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Pensions

Lone Parent Obligations: an impact assessment

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Research Report No 845

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Summary

This report presents findings from an impact assessment of Lone Parent Obligations (LPO). LPO was introduced in November 2008 and since then lone parents have lost eligibility to Income Support (IS), based on the age of their youngest child, solely on the grounds of being a lone parent. In May 2012, the age of the youngest child was reduced to five and over.

The impact assessment is part of a comprehensive evaluation of LPO that has explored whether and how lone parent employment interventions provide an effective incentive to look for paid employment, alongside an effective package of support for workless lone parents to enable them to find, enter and sustain paid employment. The impact assessment quantifies the impact of LPO by providing estimates of how many lone parents were moved off out-of-work benefits and into work as a result of LPO. It examines the impact of LPO on lone parents in the earlier phases of LPO, who lost entitlement to IS between November 2008 and the end of June 2011, at a time when their youngest child was at least seven-years-old.

The impact assessment found that LPO has had a much greater impact on moving lone parents into work than other previous Departmental employment programmes and initiatives aimed at lone parents. Three months after the loss of IS entitlement, LPO is estimated to have reduced the share of lone parents receiving any out-of-work benefit by between 11 and 13 percentage points, and to have increased the share in work by around 7 percentage points. Nine months after, the share receiving any out-of-work benefit had fallen further, to between a 13 and 16 percentage point reduction, and the share in work had increased to between eight and ten percentage points.

The focus of the impact assessment is on movement off benefit and into work, among those claiming IS. It does not account for the impact on new or repeat lone parent claimants, which was beyond the scope of this analysis.

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Abbreviations and glossary of terms

Anticipation effect	A response to a policy change by an individual that occurs before they are actually affected by the policy. In the case of LPO, this would include a lone parent leaving IS for ESA or for work in the months leading up to the loss of entitlement to IS.
Common trends	A necessary assumption for the difference-in-differences estimator to be valid – it requires that outcomes in the treatment and comparison groups would have changed by the same amount over time in the absence of any policy change.
Comparison group	A set of individuals who are not directly affected by the policy change under consideration, and whose outcomes are used to help estimate the change in outcomes that would have occurred for the treatment group had the policy change not taken place.
DiD	Difference-in-differences
DWP	Department for Work and Pensions
ESA	Employment and Support Allowance
FND	Flexible New Deal
HMRC	Her Majesty's Revenue and Customs
IA	Impact assessment
IB	Incapacity Benefit
IS	Income Support
In work	Lone parents were considered to be in work if they had claimed tax credits and had reported that they were working 16 or more hours a week.
IWC	In Work Credit is a payment of £40 a week (£60 in London) for the first year of work (16 hours and over a week) for lone parents who had been receiving IS or JSA for at least a year. It was available nationally between April 2008 and October 2012. It is being phased out from October 2012. Lone parents in receipt of a qualifying benefit on 1 October 2012 can receive IWC if they start employment on or before 30 September 2013 and meet the eligibility criteria. No IWC payments will be made from 1 October 2013.
JSA	Jobseeker's Allowance

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Lone Parent Pilots (LPP)	The Lone Parent Pilots consisted of the following elements: In Work Credit, Work Search Premium, Extended Schools Childcare and Childcare Tasters, Extended Schools Quarterly Work Focused Interviews and New Deal Plus for Lone Parents. Findings from the evaluation of the Pilots were published by DWP (Brewer <i>et al.</i> , 2009)
LPO	Lone Parent Obligations
NBD	National Benefits Database
New Deal for Lone Parents (NDLP)	NDLP was launched nationally in October 1998 and was a voluntary programme that aimed to help and encourage lone parents to improve their job readiness and employment opportunities. It was replaced by the Work Programme, when this was introduced in summer 2011.
OECD	Organisation for Economic Co-operation and Development
Potentially affected by LPO	In this report, lone parents were followed for up to 36 months. A lone parent is potentially affected by LPO if, given the date of birth of his/her youngest child at the start of the 36 month period, he/she would have lost entitlement to IS during the 36 months. The qualifier 'potentially' reflects that some of these lone parents would have been able to continue receiving IS throughout the 36 months if their circumstances changed.
SDA	Severe Disability Allowance
Treated	Used to describe individuals who are directly affected by the policy intervention being considered.
Treatment group	Set of individuals directly affected by the policy change under consideration.
Unknown destination	After leaving IS, some lone parents could not be observed to be either in receipt of an out-of-work benefit nor in work of 16 hours or more. As their destination cannot be observed from the data, they are said to be in an unknown destination.
Untreated	Used to describe individuals who are not directly affected by the policy intervention being considered.
Work Focused Interview (WFI)	This is a mandatory interview for engaging with claimants on a regular basis. It involves a face-to-face interview with a Jobcentre Plus adviser. The aim is to encourage and assist claimants to address barriers to work and move towards sustainable employment, through accessing a range of support options. As part of the WFI, lone parents are expected to agree an action plan with their adviser.
WPLS	Work and Pensions Longitudinal Study

Executive summary

Introduction

This impact assessment is part of a comprehensive evaluation of Lone Parent Obligations (LPO). LPO has meant that lone parents have lost entitlement to Income Support (IS) based on the age of their youngest child, so that, from May 2012, lone parents whose youngest child is aged five and over are no longer entitled to IS solely on the grounds of being a lone parent. The changes were brought in in phases:

- from November 2008, to lone parents with a youngest child aged 12 and over
- from October 2009, to lone parents with a youngest child aged ten and over
- from October 2010, to lone parents with a youngest child aged seven and over; and
- from May 2012, to lone parents with a youngest child aged five and over

Lone parents losing entitlement to IS are able to claim another out-of-work benefit, such as Jobseeker's Allowance (JSA) or Employment and Support Allowance (ESA), where appropriate. Some lone parents are also exempt from LPO and can continue to claim IS for another qualifying reason.

The LPO evaluation

The overall aim of the LPO evaluation has been to explore whether and how lone parent employment interventions provide an effective incentive to look for paid employment, alongside an effective package of support for workless lone parents to enable them to find, enter and sustain paid work.

Other strands of the evaluation include an international evidence review, a number of waves of qualitative research with lone parents and Jobcentre Plus staff and a longitudinal survey of lone parents originally on IS who would be affected by the policy change.

This impact assessment aims to quantify the impact of LPO by providing estimates of how many lone parents were moved off out-of-work benefits and into work as a result of LPO. It examines the impact of LPO on lone parents in the earlier phases of LPO, who lost entitlement to IS between November 2008 and the end of June 2011, at a time when their youngest child was at least seven-years-old but less than 16-years-old.

The analysis was limited to lone parents who were receiving IS at the time the policy change affected them: it does not estimate the impact of LPO on new or repeat claimants. This means that the impact estimates provided will underestimate the impact of LPO as a whole.

The analysis follows lone parents starting 12 months before they were due to lose entitlement to IS (in order to account for 'anticipation effects') until 24 months after, or until September 2011¹, whichever came first. This means that lone parents in the later phases of LPO were tracked for less time than those in the earliest phases.

¹ Which is three months after the last lone parents in the analysis lost entitlement to IS, so that impacts could be assessed for at least three months following loss of entitlement.

Evaluation design and data limitations

Following a feasibility study (Brewer, Browne and Crossley, 2010), the analysis uses a 'difference-in-differences' estimator, with lone parents with a youngest child aged 4 used as the 'comparison group'. In such a study, the difference in outcomes between the two groups before 2008 serves as a baseline against which to compare the difference in outcomes between the two groups after LPO was introduced. This approach is valid if the difference in outcomes between lone parents with older and younger children that existed before LPO was introduced is a good guide to the (unobservable) differences in outcomes between lone parents with older and younger children that might have existed after 2008, had LPO not been introduced.

The evaluation uses Department for Work and Pensions (DWP) administrative data from the Work and Pensions Longitudinal Study (WPLS), which also contains data from Her Majesty's Revenue and Customs (HMRC) on tax credits. Because many lone parents affected by LPO move into jobs with earnings below the lower earnings level (Coleman and Riley, 2012), this analysis measures 'work' using information reported by lone parents about working hours when claiming tax credits. This is a more accurate measure of whether a lone parent is in work, particularly as lone parents are likely to be more accurate in reporting their work details to HMRC when claiming tax credits than are their employers (who are responsible for submitting P45/P46 forms, which provide an alternative source of information on employment, but only need to be submitted for earnings above the lower earnings threshold). But, tax credit data may be an incomplete measure of being 'in work' if lone parents affected by LPO did not claim tax credits when in work, either through non-take-up among those who were eligible, or because they were ineligible (which would happen if they were in families who earned too much). In addition, the administrative data used in this impact assessment does not provide a complete record of whether lone parents subsequently marry or live in a couple.

The outcomes for lone parents affected by LPO

Although this does not tell us whether LPO caused these outcomes, the first step in an impact assessment is to document the outcomes experienced by the affected lone parents.

What happens around the time that lone parents lose entitlement to IS?

As, to be expected, LPO does seem to result in the majority of lone parents moving off IS at the time the data suggest that they should have lost entitlement to IS. There is a significant move between the out-of-work benefits at this time, with lone parents moving from IS to JSA or ESA.

Affected lone parents also moved slowly but steadily into work over time, but with no discernible jump at the point when they are estimated to lose entitlement to IS. However, there is a small jump (of around two to three percentage points) at this time in the fraction of affected lone parents who are not receiving any out-of-work benefits nor recorded as being in work.

What happens after lone parents have lost entitlement to IS?

The majority of lone parents affected by LPO who subsequently move from IS to JSA or ESA do not move into work during the period they are observed. For example, 18 months after moving from IS to JSA, only a quarter (Phase 1) or a third (Phase 2) of lone parents have moved into work, and 18 months after moving from IS to ESA or Incapacity Benefit (IB), only one in ten have moved into work. Consistent with other strands of the evaluation, of those lone parents who do move into work, most move directly from IS to work and usually before the loss of IS entitlement.

Twelve months after the date on which it is estimated that they should lose IS entitlement, around ten per cent of potentially affected lone parents are still receiving IS. The majority of these have experienced a change in circumstances which means that they are still eligible to receive Income Support, but, for around a third (representing around three to four percentage points of all of those potentially affected by LPO), there is no identifiable reason why the lone parent was still receiving IS at this time.

Twelve months after the estimated loss of entitlement to IS, about 15 per cent of lone parents affected by LPO seem to be not receiving any out-of-work benefits and are not in work (according to our definition of work). About half of these are receiving Child Tax Credit, suggesting they are still a lone parent with dependent children. Of the remaining half, some have re-partnered and are receiving tax credits as part of a couple, but some do not seem to be receiving any out-of-work benefits or tax credits. It is difficult to draw firm conclusions from this analysis given the potential for error or inconsistencies in the multiple sources of data that have been used, but other strands of the evaluation of LPO have investigated the size and circumstances of lone parents affected by LPO who stop receiving out-of-work benefits, but do not move into work (see Coleman and Riley (2012) and Casebourne *et al.* (2010)).

The net impact of LPO on receipt of out-of-work benefits and being in work

Three months after the loss of entitlement to IS, LPO is estimated to have reduced the share of affected lone parents receiving any out-of-work benefit by between 11 and 13 percentage points (across the three phases), and to have increased the share in work by around seven percentage points. In absolute numbers, this corresponds to 50,000 fewer receiving an out-of-work benefit, and 30,000 more recorded as being in work.

This reduction in receipt of out-of-work benefits conceals flows between out-of-work benefits: three months after the estimated loss of IS entitlement, LPO had reduced the share of potentially affected lone parents receiving IS by between 47 and 58 percentage points (across the three phases), but, of those, between 24 and 33 percentage points moved to JSA and 11 and 12 percentage points (across the three phases) to ESA. In absolute numbers, this means the phases of LPO under study in this analysis led there to be 230,000 fewer receiving IS, but 130,000 more receiving JSA and 45,000 more receiving ESA, when assessed three months after losing entitlement to IS.

The impact of LPO generally grows, so that 12 months after the loss of entitlement to IS, LPO is estimated to have reduced the share of affected lone parents receiving any out-of-work benefit by between 13 and 16 percentage points in Phase 1 and 2 respectively, and to have increased the share in work by eight and ten percentage points. (Results after 12 months were not available for lone parents in Phase 3).

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LPO was less effective at moving lone parents with older children off out-of-work benefits and into work than it was those with younger children. This may reflect that, for some lone parents with older children affected at the start of LPO, the loss of IS entitlement happened only a few months or a year or two earlier than it would have occurred anyway, but it may also reflect that the affected lone parents with older children tended to have been on out-of-work benefits for a long time. Similarly, lone parents aged under 25 appear to have been affected by LPO less than lone parents aged 25 years and older, with fewer moving off out-of-work benefits and into work. Both findings are consistent with these groups being further from the labour market, with less (recent) experience of work, and greater barriers to moving into work.

One way to avoid LPO is to remain on IS through having another child. The analysis shows that although some lone parents due to be affected by LPO did remain on IS because they had younger children, LPO does not appear to have encouraged lone parents to have more children to remain eligible for IS and avoid LPO.

The available administrative data does not record what sort of jobs lone parents move into other than the level of earnings. There is no clear evidence on whether lone parents moving into work as a result of LPO have higher or lower earnings than those who would have worked anyway. This suggests that the jobs lone parents move into following LPO are likely to be no better or worse than the jobs lone parents generally move into from benefits.

Comparison with other DWP interventions for lone parents

The headline result in this report is that LPO means that, 12 months after losing entitlement to IS, an additional 13 to 16 percentage points of lone parents formally in receipt of IS were not receiving any out-of-work benefit.² These impacts are considerably higher than the estimated impacts of the Lone Parent Pilots (LPP), Work Focused Interviews (WFIs), and the New Deal for Lone Parents (NDLP), all three of which had impacts on the population of lone parents on IS that were around two percentage points.

This suggests that, compared to previous policy interventions, LPO is an effective way of moving lone parents from out-of-work benefits and into work. In addition, the assessment does not account for new or repeat claimants (through preventing lone parents making a new claim for IS), so it is likely to underestimate the impact of LPO because of this.

Having said this though, there are wider limitations to the analysis, given its focus on off-benefit and in work outcomes. For instance, the analysis has not examined the costs of the intervention, the effect more generally of the policy on the lone parents affected (although this is considered in other strands of the evaluation) or any substitution or displacement effects through the employment impacts achieved by LPO (which was beyond the scope of this analysis). All of these issues may affect any overall assessment of LPO. And, lastly, the impact assessment has not been able to look at longer term impacts on these lone parents, nor has it considered the impacts on lone parents with younger children (aged five and six) who have since been brought into the LPO regime. It could be worth exploring these impacts in the future.

² This is for phases 1 and 2. For all lone parents (phases 1 to 3), the impact was between 13 and 16 percentage points after nine months.

1 Introduction

1.1 Structure of the report

This report presents findings from an impact assessment of Lone Parent Obligations (LPO), a policy that was introduced from November 2008.

The report is structured as follows:

- This chapter outlines the policy change, the evaluation strategy for LPO, the overall aims of the impact assessment and discusses the population of interest.
- Chapter 2 discusses the research design adopted for the impact assessment in more detail. It also considers other policy changes and issues connected to the economic environment between 2008 and 2011, and how these might affect the impact assessment.
- Chapter 3 presents findings on some key outcomes for the group of affected lone parents.
- Chapter 4 provides estimates of the impact of LPO. These are based on a difference-in-differences (DiD) design, which uses lone parents with younger children as a comparison group, and uses data from before LPO began to determine what differences we would have expected between lone parents on Income Support (IS) with differently-aged children, in the absence of LPO.
- Chapter 5 presents conclusions.
- There are a number of appendices containing additional technical information.

1.2 Background and policy context

1.2.1 Lone parents in the UK

There are an around 1.9 million lone parents in the UK who care for 2.5 million children (Labour Force Survey Household Datasets, Q4, 2012). Lone parents now make up one-quarter of all households with dependent children, and the United Kingdom (UK) has proportionately more lone parents than most Organisation for Economic Co-operation and Development (OECD) countries. The median age for a lone parent is 38 and only 1.4 per cent of lone parents are teenagers. Thirteen per cent of lone parents come from ethnic minority communities and nine per cent of lone parents are lone fathers (Labour Force Survey Household Datasets, Q4, 2012).

1.2.2 Lone parents and employment

The employment rate for lone parents has been rising over the last decade or so. Shortly before the introduction of LPO, the employment rate for lone parents was 56.4 per cent (Q2, 2008, Household Labour Force Survey). This rate was lower than the employment rate for partnered mothers at 71.6 per cent and lower than the lone parent employment rate in many other OECD countries. The latest figure for the employment rate among lone parents is 59.8 per cent (Q4, 2012, Household Labour Force Survey), whereas among partnered mothers it has remained fairly constant over this time (the latest figure is 71.8 per cent).

1.2.3 Child poverty in lone parent households

Children of lone parents are more likely to live in poverty than children in a two-parent family. In the UK, 17 per cent of all children and 22 per cent of children in lone parent families were in relative income poverty in 2011/12.³ A child in a workless lone parent family is around twice as likely to be in relative income poverty than a child in a lone parent family that works part time, and over four times more likely than a child in a lone parent family that works full time.⁴

1.2.4 Lone Parent Obligations

LPO aims to increase the number of lone parents moving into work, as a way of reducing child poverty among lone parent families, as well as to promote the wider benefits from a move into work.

Before November 2008, lone parents were able to claim IS as a lone parent until their youngest child reached 16 (or 19 if in full-time education). The key policy change in LPO is that lone parents with a youngest child aged five or over are no longer entitled to claim IS solely on the grounds of being a lone parent. This policy was phased in from November 2008 and reached steady-state in late 2012.

Lone parents who are not working for 16 hours or more and who lose entitlement to claim IS as a lone parent may be entitled to Jobseeker's Allowance (JSA) or Employment and Support Allowance (ESA). JSA is available to lone parents who are available for work, actively seeking work and who have an up-to-date, signed Jobseeker's Agreement in place. Lone parents with a health problem or disability, which limits their ability to work, may be entitled to ESA. Lone parents' entitlement to other means-tested support, such as the Child Tax Credit, Housing Benefit and Council Tax Benefit, is unaffected by LPO. Lone parents who move into work of 16 hours or more will generally be entitled to claim Working Tax Credit and possibly In Work Credit (IWC), if they meet the eligibility criteria.

As part of the LPO changes, lone parents are provided with a range of personalised support while out-of-work to help move closer to the labour market and into work, as well as post-employment support once they move into work. This includes:

- mandatory final year quarterly Work Focused Interviews (WFIs), in the year preceding loss of IS entitlement;
- a voluntary meeting with an adviser in the weeks before loss of IS entitlement, to assist with the changeover to another benefit, such as JSA or ESA. Jobcentre Plus districts also had to run 'Options and Choices' events in the year LPO was introduced, informing lone parents about the changes and the support available to them, after which they had the discretion to run events if they considered there to be a need for them;
- additional flexibilities for lone parents claiming JSA in terms of the hours they are required to work, for example; and
- post employment support from an adviser or to cover unexpected financial emergencies in the first months of moving into work.

³ Households Below Average Income 2011/12.

⁴ *ibid.*

The withdrawal of eligibility to IS for lone parents under LPO

Lone parents lost eligibility to IS based on the age of their youngest child. New/repeat lone parent claimants could not claim IS from the introduction of the relevant phase. In order to manage the transition of lone parents already claiming IS on to a different out-of-work benefit, lone parents lost entitlement to IS in sub-phases based on the age of their youngest child and according to a set formula. The different phases can be summarised as:

- Phase 1 (24/11/2008 – 24/11/2009) affected lone parents whose youngest child was aged 12 or over.
- Phase 2 (26/10/2009 – 26/10/2010) affected lone parents whose youngest child was aged ten or over.
- Phase 3 (25/10/2010 – 21/05/2012) affected lone parents whose youngest child was aged seven or over.
- Phase 4 (21/05/2012 – 18/11/2012) affected lone parents whose youngest child was aged five or over.

Appendix A gives full details of the roll-out of LPO, with precise information on the dates of birth of the youngest children in each sub-phase, and the dates on which they lost entitlement to IS as a lone parent.

Some lone parents are exempt from LPO, and so can continue to claim IS. The main categories of exemption include lone parents who are caring for a child who is entitled to the middle or higher rate care component of Disability Living Allowance, lone parents receiving Carer's Allowance and those who are fostering children.⁵

1.3 Evaluating Lone Parent Obligations

LPO is subject to a comprehensive mixed-methods evaluation. The primary aim of the evaluation has been to explore whether and how lone parent employment interventions provide an effective incentive to look for paid employment, alongside an effective package of support for workless lone parents to enable them to find, enter and sustain paid employment.

A series of qualitative studies have been conducted, as follows:

- a study focused on the first roll-out group, which was lone parents who had a youngest child aged between 12 and 15-years-old. It also examined the IS regime for lone parents with a youngest child aged between one and six years. The study focused on claimants' experience of IS eligibility ending, before they had moved to another benefit or status (Gloster *et al.*, 2010).

⁵ There are some other transitional arrangements for lone parents included in the impact assessment: lone parents who were full-time students at the point the IS entitlement changes came into force were transitionally protected for the duration of the course, and those few lone parents who had been claiming IS continuously since before April 2004 and who were receiving child additions to IS rather than the Child Tax Credit could have their eligibility extended for one period of four weeks if the Child Tax Credit claim for the lone parent moving onto JSA had not been processed at the time of the voluntary interview around six weeks before the original IS end date.

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- a second study focused on a variety of destinations that lone parents moved to after losing eligibility to IS (including claiming JSA, claiming ESA, 'unknown' destinations, being exempt from LPO and moving into work). The lone parents in the study had a youngest child aged between 12 and 15 (the first roll-out group) (Casebourne *et al.*, 2010).
- The final wave of research considered the effect of LPO on lone parents whose youngest child was aged seven or eight. It also informed the delivery of the roll-out of LPO to lone parents with a youngest child aged five or six. The research examined the work readiness of lone parents, their experience of childcare, reflections on when their youngest child started school, how they looked for work, experiences of JSA and of moving into work (Lane *et al.*, 2011).

In addition, a national quantitative longitudinal survey of lone parents has been carried out, from which two reports have been published. The first survey was conducted in 2010 while lone parents were still on IS (they had a youngest child aged seven or eight when they were due to lose entitlement to IS and were in the Phase 3 roll-out group) (Coleman and Lanceley, 2011). The second wave took place in 2012 about 12 months after lone parents' eligibility for IS had ended, and tracks lone parents' destinations and experiences over this period (Coleman and Riley, 2012).

1.4 An impact assessment of LPO

This impact assessment was designed to estimate the impact of LPO on the outcomes of lone parents who were existing claimants of IS and were directly affected by Phases 1 and 2, and part of Phase 3, of the roll-out of LPO⁶. These lone parents all had a youngest child of at least seven years of age when they lost IS entitlement. The outcomes in question are flows between and off out-of-work benefits, and movements into work. At present, there are no plans to extend the analysis to look at subsequent phases.

Because this impact assessment looked only at existing IS claimants, it does not estimate the impact of LPO on new/repeat claimants.⁷ Because of this, any estimate from this report on, for example, the impact of LPO on the number of lone parents in work will necessarily be an underestimate of the overall impact of LPO.

1.4.1 The population of interest, and the observation window

The population of interest for this report were lone parents who were existing claimants of IS and were directly affected by Phases 1 and 2, and part of Phase 3, of the roll-out of LPO.

For an individual lone parent affected by LPO, a crucial date is that on which they lose entitlement to IS as a lone parent. However, it is plausible that LPO would have had an impact on a lone parent's behaviour at least a year before they lost IS entitlement, for two reasons:

⁶ The sample excluded those known to be on Carer's Allowance, who would have been exempt from LPO, as well as those who were receiving ESA/Incapacity Benefit (IB)/ Severe Disablement Allowance (SDA).

⁷ The new/repeat lone parents would have been unable to claim IS as a lone parent (unless subject to an exemption), but may have been able to claim another benefit, such as JSA or ESA.

- lone parents receiving IS may alter their behaviour in anticipation of losing their entitlement to IS in the near future. For example, a lone parent who intends to move from IS to JSA or ESA⁸ might decide to make that transition well in advance of the date on which they lose IS entitlement, and a lone parent who does not want to claim JSA or ESA in the future might decide to move into work before they lose entitlement to IS if there is a risk that they might not be able to find such a good job offer having lost entitlement to IS.
- during the 12 months leading up to the loss of entitlement to IS as a lone parent, the lone parents faced a more intensive WFI regime, and access to additional pre-employment support, compared to the normal WFI and IS policy regime. These interventions alone may have altered lone parents' behaviour.

We refer to these as 'anticipation effects'. These anticipation effects are important because, if they exist, then it could be very misleading to examine how outcomes change only after the date when a lone parent loses entitlement to IS. Given the nature of LPO, and following the discussion in the feasibility report (Brewer, Browne and Crossley, 2010), the approach taken in this impact assessment is to examine the impact of LPO on lone parents who were claiming IS as a lone parent 12 months before their loss of entitlement to IS.⁹ These lone parents are referred to as being 'potentially affected by LPO'. This phrase is used because changes in their circumstances may mean that lone parents are actually unaffected by LPO at the time they are due to lose entitlement to IS.

The data available for this impact assessment covered outcomes measured up to 30 September 2011. Potentially affected lone parents were followed for a period which began 12 months before losing IS entitlement and ended 24 months after losing IS entitlement, or on 30 September 2011, whichever came first (the 'observation window'). In practice, this means that this report provides estimates of the impacts of LPO on existing claimants covering 24 months after the loss of IS entitlement for lone parents in Phase 1, 18 months for those in Phase 2, and 6 to 12 months for those in Phase 3.

⁸ Or, some lone parents in Phase 1 would have had the option to apply for IB rather than ESA.

⁹ Doing so would lead to two problems: first, considering only those lone parents who remained on IS until the day on which they lost IS entitlement would not capture the impact of LPO if LPO induces some lone parents to leave IS in advance of this date. Second, any impact evaluation that attempted to estimate the effect of the policy change by comparing outcomes before and after the reform would be biased if lone parents who leave IS in anticipation of the loss of IS entitlement were not representative of all lone parents affected by LPO. This is because, in this case, differences between lone parents observed before and after the reform would reflect these compositional differences as well as the impact of LPO and wider economic trends. On the other hand, a disadvantage of defining the affected population in this way is that, when the lone parents reach the point at which it was estimated that they would lose IS entitlement, the lone parents' personal circumstances may have changed in a way that means they are no longer affected by LPO, either because they have already left IS, or because they are still receiving IS and are no longer affected by LPO (because they are exempt through claiming Carer's Allowance or having had another child, or they are no longer a lone parent, for example).

1.4.2 Approach for estimating the counter-factual

The key challenge for any impact evaluation is to come up with a plausible counter-factual – what outcomes would have been observed had no policy change taken place. Following a feasibility study (Brewer, Browne and Crossley, 2010), this impact assessment uses a ‘DiD’ estimator, with lone parents with a youngest child aged four used as the ‘comparison group’. In this design, the outcomes for lone parents affected by LPO are (implicitly) compared with outcomes for lone parents with younger children, but this comparison is itself adjusted by the difference in outcomes between lone parents with older and younger children that existed before LPO was introduced. In other words, the differences in outcomes between the two groups before 2008 serves as a baseline against which to compare the differences in outcomes between the two groups after LPO was introduced. To provide valid estimates of the impact of LPO, it needs to be the case that the differences in outcomes between lone parents with older and younger children that existed before LPO was introduced are a good guide to the (unknown) differences in outcomes between lone parents with older and younger children that would have existed after 2008 had LPO not been introduced. This is considered further in Chapter 2.

1.4.3 Data sources and data limitations

Following the recommendations of the feasibility study (Brewer, Browne and Crossley, 2010), this impact assessment used Department for Work and Pensions (DWP) administrative data (Work and Pensions Longitudinal Study (WPLS)), which records information collected by DWP for administering benefit claims and welfare-to-work programmes, and information about employment, earnings and tax credit claims collected by Her Majesty’s Revenue and Customs (HMRC). Compared to household survey data, the WPLS offers very large samples, and the ability to identify precisely when a lone parent is due to lose entitlement to IS. The use of this data is now fairly standard in evaluations of DWP programmes or interventions, but there are some points which are especially relevant for this impact assessment.

Measuring and defining ‘in work’

For the purposes of this impact assessment, lone parents were considered to be in work if they had claimed tax credits and had reported that they were working 16 or more hours a week.¹⁰ This is different from the more usual measure of being in work adopted by researchers examining the impact of welfare-to-work programmes in the UK, which is based on information about the start and end dates of periods of employment reported by employers to HMRC (known as P45/P46 data). But this P45/P46 data can be inaccurate, with incorrect or uncertain start and end dates of jobs, and it is an incomplete record of low-paying jobs, because employers are not required to report to HMRC instances where they hire employees who earn too little to be liable for income tax. This second limitation is of particular concern for the evaluation of LPO: based on a survey of lone parents who lost entitlement to IS in early 2011, Coleman and Riley (2012) reported that 40 per cent of those

¹⁰ The information on a claimant’s hours worked is needed only for determining entitlement to the Working Tax Credit, but typically the Working Tax Credit is claimed jointly with the Child Tax Credit, and so this report refers to the two together as ‘tax credits’ (for example, someone who wants to claim only the Child Tax Credit, knowing that they earn too much to be entitled to the Working Tax Credit will still be asked to report their weekly hours of work when making the claim even though that information is used only for determining entitlement to the Working Tax Credit).

lone parents who were in work 12 months later earned under £100 a week; at the time, the lower earnings limit was £102 a week, and so these lone parents need not have had their spell of employment reported to HMRC by their employers. Given this concern that many lone parents affected by LPO who move into work might not be recorded as being in work by the P45/P46 data, this impact assessment, therefore, counted a lone parent as being in work if they had claimed tax credits and reported that they worked for 16 or more hours a week. This will be a more accurate measure of whether a lone parent is in work than a measure based on P45/P46 records if lone parents are more accurate at reporting the start and end dates of employment spells (and their usual weekly hours of work) to HMRC, as part of a tax credit claim, than are their employers in reporting P45/P46 information. But it will be an incomplete measure if lone parents affected by LPO did not claim tax credits when in work, either through non-take-up among those who were eligible, or because they earned too much (either in their own right or as part of a couple, or for a Child Tax Credit claim, if they no longer had dependent children). Take-up of tax credits among all lone parents was estimated to be 95 per cent during 2010–11¹¹, and, during the period under consideration, a family would be entitled to the Child Tax Credit with a combined gross income of up to £58,000.

However, this measure of work may be incomplete for some lone parents in Phase 1 of LPO who are followed over a period where some will no longer have dependent children. Although those without dependent children can be entitled to Working Tax Credit, entitlement runs out at earnings levels which are considerably lower than for families with dependent children, and take-up rates among those who are entitled are also much lower. However, any former lone parents who are claiming tax credits as a single person or couple without dependent children and who report being in work of at least 16 hours a week will be captured and will be counted as being in work for the purposes of this impact assessment.

Identifying lone parents who are neither receiving an out-of-work benefit nor are in work

In several places in this report, lone parents are classified into three mutually-exclusive states: receiving an out-of-work benefit (IS, JSA, ESA/IB/SDA or Carer's Allowance¹²), being in work of 16 or more hours, and neither of these.¹³ This final group – lone parents formerly affected by LPO and now not receiving an out-of-work benefit nor in work – is of interest because one concern about LPO is that lone parents might lose entitlement to IS but not move to another benefit or find work. Section 3.2 contains estimates of the size of this group, and Section 3.4.4 analyses what is known about such lone parents given their claims for all benefits and tax credits. However, because of the combination of data sources used to identify such lone parents, and the potential for error in the data, it is difficult for this analysis to draw firm conclusions about the size of or circumstances of such a group of lone parents. This caveat also applies to the analysis in Chapter 4, where it is shown LPO seemed to move more lone parents off out-of-work benefits than it did move lone parents into work, the implication being that LPO moved a few lone parents off out-of-work benefits, but not into work.

¹¹ <http://www.hmrc.gov.uk/statistics/fin-takeup-stats/cwtc-take-up.pdf>. Take-up rates are, in general, lower for those entitlement to smaller amounts, but official statistics do not also break these down by family type.

¹² Although technically not an out-of-work benefit, Carer's Allowance does require claimants to be caring for someone full-time, and allows claimants to do only a very limited amount of paid work.

¹³ If a lone parent appears to be both in work of 16 or more hours and receiving an out-of-work benefit, then they are classified as receiving an out-of-work benefit.

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Other strands of the evaluation of LPO, though, do investigate the size and circumstances of this group. For example, results from the quantitative survey of lone parents affected by Phase 3 of LPO found that, 12 months after losing entitlement to IS, nine per cent were not in work and not receiving any of IS, ESA or JSA, half of whom had repartnered (Coleman and Riley (2012)). As discussed more in Section 3.4.4, it is reassuring that analysis based on administrative data is broadly consistent with this overall finding. Chapter 5 of Casebourne *et al.* (2010), which is based on qualitative interviews with lone parents affected by the early stages of LPO, also investigates the circumstances of a (small sample of) lone parents who are neither receiving an out-of-work benefit nor in work.

Measuring whether (former) lone parents affected by LPO are living in a couple

The administrative data used in this impact assessment does not provide a complete record of whether lone parents subsequently marry or live in a couple. There are two cases where the data does record instances where former lone parents subsequently live in a couple:

- where a (former) lone parent is receiving an out-of-work benefit as the main claimant, and declares the presence of a (non-working) partner
- where a (former) lone parent is living in a couple which claims tax credits and which meets the work conditions necessary for the Working Tax Credit.

It should be clear this is by no means a complete record: for example, neither instances where a (former) lone parent is living in a couple which does not claim tax credits or which does not meet the work conditions necessary for the Working Tax Credit, nor instances where the (former) lone parent's partner is the main claimant of an out-of-work benefit, will be captured. For this reason, this impact assessment does not attempt to measure whether lone parents affected by LPO go on to live with partners (with a limited exception in Section 3.4.4, which looks at what information is known about those lone parents who do not seem to be receiving an out-of-work benefit or be in work.) However, information on partnering rates among lone parents affected by LPO can be found in Coleman and Riley (2012).

Measuring the quality of jobs

The administrative data contains no information on the quality of the jobs, other than recording the hours worked per week (as reported by lone parents who claim tax credits), and the annual earnings (as reported by employers to HMRC). Other strands of the evaluation of LPO do investigate the types of jobs carried out by lone parents affected by LPO, as well as lone parents' wider experiences of work: see Chapter 2 of Casebourne *et al.* (2010), Chapter 7 of Lane *et al.* (2011) and Chapter 3 of Coleman and Riley (2012).

Measuring time spent receiving Training Allowance

The DWP administrative data used in this impact assessment does not record whether a lone parent is receiving Training Allowance (such lone parents would probably appear in the data as receiving no DWP benefits). However, as the number of recipients of Training Allowance in the period was small, and it is thought that relatively few were lone parents, the impact on any results in this report should be negligible.

2 The evaluation design

This chapter sets out the evaluation design for this impact assessment in more detail. It draws heavily on a feasibility study that was carried out to help inform the analysis (Brewer, Browne and Crossley, 2010). It also discusses how the evaluation design is affected by other policy changes that happened at the same time as Lone Parent Obligations (LPO).

2.1 The evaluation design: difference-in-differences using lone parents with younger children as a comparison group

The goal of an impact assessment is to determine how the outcomes of the individuals affected by a policy change or reform were altered by that policy change or reform (and these individuals are sometimes known as the ‘treated’ individuals). The key problem in an impact assessment, which the comparison group is intended to solve, is that the counterfactual outcome of the treated group is not observed. For example, in evaluating the effect of LPO, the outcomes of a group of lone parents who lose their entitlement to IS are observed. What can never be observed are the outcomes of exactly that group of lone parents in exactly that time period, had they not lost their entitlement to IS. The role of the comparison group in an impact assessment, therefore, is to serve as a basis for estimating the unobserved, counterfactual outcomes of the treatment group.

The recommendation made by the feasibility study was to implement a ‘difference-in-differences (DiD)’ estimator using lone parents with younger children as the comparison group, and using cohorts of lone parents observed before and after LPO was introduced. In this design, the outcomes for lone parents affected by LPO are (implicitly) compared with outcomes for lone parents with younger children, but this comparison is itself adjusted by the difference in outcomes between lone parents with older and younger children that existed before LPO was introduced. Another way of seeing this is to consider that the differences in outcomes between lone parents with older and younger children that existed before LPO was introduced might be a good guide to the (unobservable) differences in outcomes between lone parents with older and younger children that might have existed after 2008, had LPO not been introduced.¹⁴ In other words, the differences in outcomes between the two groups before 2008 serves as a baseline against which to compare the differences in outcomes between the two groups after LPO was introduced.

¹⁴ The previous feasibility study recommended this over a simple ‘difference’ design (that would have compared affected lone parents with lone parents with much younger children) on the grounds that it is likely that the two groups will behave differently precisely because they have differently-aged children, and such differences would be impossible to eliminate by controlling for observable characteristics. For more on the principles behind a DiD design for evaluating LPO, see Section 3 of Brewer, Browne and Crossley (2010). See also discussions in Blundell and Costa Dias (2000 and 2010), Angrist and Pishke (2009), Morgan and Winship (2007).

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Several assumptions are needed for DiD to produce a valid estimate of the impact of a policy intervention, but the key one is known as the ‘common trends’ assumption. This effectively requires that the outcomes for the treated population follow a similar path over time as the outcomes for the comparison group; it is simply another way of stating that the differences in outcomes between lone parents with older and younger children that existed before LPO was introduced might be a good guide to the (unobservable) differences in outcomes between lone parents with older and younger children that might have existed after 2008, had LPO not been introduced. Conversely, common trends would fail if the labour market behaviour of lone parents with younger children were changing in a way which was different from the change in the labour market behaviour of lone parents with older children even in the absence of LPO.

The feasibility study contained a form of test of the common trends assumption, in this case by comparing (in a regression framework) the outcomes of lone parents with older and younger children in a four-year period before LPO began (see Section 3 of Brewer, Browne and Crossley (2010)). This found some evidence that the ‘common trends’ assumption did not hold during the period from 2001 to 2007, but the divergences were usually small and may not have been statistically significant.¹⁵ The overall assessment of the feasibility study was that *‘if an eventual IA is intended to test whether [LPO] had impacts as large as 5 to 10 ppts (compared with no effect), then a DiD or a trend-adjusted DiD model should provide robust answers’*.

This report provides an update of that assessment in Appendix C. The main DiD results are also robust to an alternative DiD specification which explicitly allows for differences in trends between groups (this is known as a ‘trend-adjusted DiD’).

A related assumption is that the comparison group are not themselves affected by the treatment. One way in which they could have been affected is through substitution or displacement effects, which would occur if any additional lone parents looking for work as a result of LPO made it harder for other people to find work themselves. The research was not able to estimate the size of any of these effects, but they are typically assumed to be very small. If such substitution or displacement effects do exist, then the impact of LPO on employment overall will be less than suggested by the estimates in this report.

2.1.1 The definition of the groups for the DiD analysis

This section describes the principles guiding the selection of the different groups of lone parents used in the DiD analysis. Further technical details can be found in Appendix B. All lone parents were initially sampled from the Income Support (IS) history dataset, after resolving any inconsistencies internal to the IS history dataset following the criteria described in Appendix B. The IS history file contains information on IS claims, and the spells within them. Each row in the dataset records information relating to a specific ‘spell’, where a spell within a claim corresponds to a period of time within which the claimant’s circumstances were unchanged.

The group of lone parents directly affected by LPO can be easily identified based on the date of birth of their youngest child, as set out in Appendix A. For example, any lone parent with a youngest child born between 1 February 1999 and 26 October 1999 fell into sub-phase 2aF and lost entitlement to IS between 25 October 2010 and 25 October 2011 on a date which depended on the birthday of the child and on the date of the lone parent’s WFI. Given

¹⁵ However, even if common trends were thought to hold between 2001 and 2007, there is no guarantee that it will still hold after LPO is introduced.

the information in the Work and Pensions Longitudinal Study (WPLS), an estimate of the exact date on which a lone parent lost entitlement to IS was constructed. Where there were uncertainties (for example, when the dates of Work Focused Interviews (WFIs) were not recorded), the earliest date was used. To account for possible anticipation effects discussed above, **the observation period** for each affected lone parent begins 12 months before the actual loss of entitlement to IS, and a lone parent has to be receiving IS at this point in time to enter the sample. Each lone parent is then followed for up to 36 months, i.e. until up to two years after the loss of entitlement or until 30 September 2011, whichever came first.

Comparison groups were constructed separately for each sub-phase of LPO. The ideal comparison group should be observed at the same time as the treated group, be followed for a 36-month period during which time it should not be affected by LPO, and should include lone parents with youngest children as close in age as possible to the youngest child of the treated lone parents (in order to maximise the plausibility of the common trends assumption). These constraints mean that the comparison group for every sub phase consists of lone parents whose youngest child turns four during the same window of calendar time in which the treated lone parents lose entitlement to IS¹⁶. For example, the comparison group for sub-phase 2aF is made up of lone parents whose youngest child turns four between 25 October 2010 and 25 October 2011. Just as with the treatment group, the observation period for the comparison group starts 12 months before this date (ie on the third birthday of the youngest child), and a lone parent has to be receiving IS at this point in time to enter the comparison group. The lone parents are then followed until the sixth birthday of their youngest child, or until 30 September 2011.¹⁷

The DiD analysis requires that groups similar to the treated and the comparison groups also be observed before the implementation of the policy. This is necessary in order to measure what the differences in outcomes between the two groups would be in the absence of any policy differences. To achieve this, additional groups of lone parents are sampled whose youngest child is of the same age as the youngest child of the lone parents in the treated and comparison groups, but who are observed in our data at various points in time **before** the beginning of LPO. For example, the treated group for sub-phase 2aF comprises lone parents whose youngest child turns 11 between 25 October 2010 and 25 October 2011. To produce an equivalent group of lone parents observed before LPO, we select the lone parents whose youngest children turned 11 during various windows before the implementation of LPO. We refer to these groups, who are not affected by LPO because they are observed before LPO begins, as the **pre-treated** groups.

¹⁶ By reducing the length of the observation window, it is of course possible to use a comparison group with lone parents whose children are slightly older. When lone parents with children turning five are used as a comparison group (and the observation period is restricted to 24 months), the results of the DiD analysis are very similar to the ones presented in this report.

¹⁷ An implication of this choice of comparison group is that the age of the youngest children in the treated groups varies across sub-phases, but lone parents in the comparison groups for every sub-phase have the same aged youngest children (aged four). This in turn implies that the age differences between children of lone parents in the treated and comparison groups are smaller for the later phases. To the extent that parents of children of similar age are more likely to behave similarly over time, this can be taken as a suggestion that the common trends assumption is more credible for the later phases.

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Ideally, these lone parents should also be observed over a period of 36 months (which, in the example of sub-phase 2aF, means from the 10th to the 13th birthday of the child). This is not possible for cohorts observed relatively soon before LPO began, as some of these pre-treated lone parents would go on to be affected by LPO themselves within 36 months). To ensure that this does not happen, the first pre-treatment cohort is selected to be four years earlier than the actual treated group. Additional cohorts are then drawn from earlier years, subject to the constraint that WPLS data is available only from summer 1999. So, again, if the treated group includes lone parents whose youngest child turned 11 between 25 October 2010 and 25 October 2011, the first cohort of the pre-treated group includes lone parents whose youngest child turned 11 between 25 October 2006 and 25 October 2007; the second cohort between 25 October 2005 and 25 October 2006, and so forth. Similarly, we select various **pre-comparison groups** of lone parents who have a youngest child aged four, like the comparison group, but who are observed before LPO began, and at the same time as the pre-treated lone parents.

Overall, then, for each sub-phase, we observe outcomes for lone parents with older children (in the treated and pre-treated groups) and with younger children (in the comparison and pre-comparison groups), and who are drawn from one of up to six cohorts, one of which is affected by LPO, and up to five of which are observed before LPO.

2.2 Other policy changes affecting the lone parents affected by LPO

This sub-section discusses relevant changes to policy which took place just before, or during, the period over which LPO was rolled out. In general terms, other policy changes will confound an impact evaluation if they affect the treatment and comparison groups differently. In such a case, the 'common trends' assumption underpinning the DiD methodology would not hold (because trends in the outcomes of the treatment and comparison groups might be different in the absence of LPO because of these other policies). Therefore, in general, an impact evaluation needs to account for other contemporaneous policy changes. Broadly speaking, there are two ways in which this can be done:

- If the net impact of these policies is the same on the treatment and comparison groups, then ignoring the existence of these policies would not bias the estimates in the DiD model. In this case the additional policies form part of the 'common trends' affecting both groups and so do not invalidate the DiD estimator.
- If the net impact of these policies on the treatment group is not identical to that of the comparison group, then the policies can be modelled explicitly in a DiD regression model by including an additional explanatory variable which indicates those lone parents who were affected by this additional policy. In order to be valid, there would need to be some variation in who was affected by these additional policies within both the group of lone parents affected by LPO and within the comparison groups.

Neither of these techniques will work, though, if, for example, a policy is introduced which affects only lone parents with younger children, and is introduced in all areas of the country at the same time. In this case, the DiD estimator cannot be used to estimate the effect of LPO, as the comparison group will be affected by something that does not affect the treatment group, violating the 'common trends' assumption. The DiD estimator would then be estimating the net effect of the lone parent policy change minus the effect of the other policy.

The rest of this sub-section discusses some relevant policies in more detail.

2.2.1 JSA and Flexible New Deal

In April 2009, the JSA regime changed, with a policy known as Flexible New Deal (FND), which affected the support available to all Jobseeker's Allowance (JSA) claimants. This initially applied in certain Jobcentre Plus districts, with the remaining districts affected from April 2010¹⁸.

The estimated impacts of LPO provided in this report do not take explicit account of FND, but the DiD regressions do control for Jobcentre Plus district to allow for any differences at district level, and for these to change over time, as a way to account for the gradual roll-out of FND. This also means that the overall estimated impacts are effectively averaged over areas with and without FND.

2.2.2 Employment and Support Allowance

Employment and Support Allowance (ESA) replaced Incapacity Benefit (IB) for new claimants from October 2008, just before LPO began. ESA claimants have to undergo a Work Capability Assessment to assess whether their health condition limits the work they are able to undertake. Lone parents on IS before the introduction of ESA and who may have had a work-limiting health condition may have a strong incentive to claim IB before October 2008, after which date IB was closed to new claimants, rather than wait until the end of their IS entitlement and make an ESA claim.

The estimated impacts of LPO provided in this report do not separate out this impact from the impact of LPO. It is expected that the introduction of ESA would have mostly affected the early sub-phases of LPO, and might have resulted in greater than expected moves from IS to IB.

2.2.3 In Work Credit roll-out

In Work Credit (IWC), a payment of £40 a week (£60 in London) for the first year of work (16 hours and over a week) for lone parents who had been receiving IS or JSA for at least a year, was available nationally between April 2008 and October 2012¹⁹. It was previously available in certain Jobcentre Plus districts, covering around 45 per cent of lone parents receiving IS. Therefore, the change in April 2008 affected only lone parents in districts that did not previously have IWC, but in these areas, the national roll-out of IWC affected the treatment and comparison groups equally.

¹⁸ FND, as well as most other New Deal employment programmes, came to an end with the introduction of the Work Programme in the summer 2011.

¹⁹ IWC is being phased out from October 2012. Lone parents in receipt of a qualifying benefit on 1 October 2012 can receive IWC if they start employment on or before 30 September 2013 and meet the eligibility criteria. No IWC payments will be made from 1 October 2013.

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The estimated impacts of LPO provided in this report take no account of IWC, but the DiD regressions do control for Jobcentre Plus district to allow for any differences at district level, and for these to change over time, as a way to account for the gradual roll-out of IWC.

2.2.4 The Work Programme

The Work Programme began in summer 2011 and replaced FND and most other New Deal employment programmes. Therefore, up until 30 September 2011 (the end point for this analysis), it is possible that a small number of lone parents may have entered the Work Programme during this time. However, it was not possible to determine this from the data used for this analysis. The estimated impacts of LPO provided in this report, therefore, do not separate out any impact of LPO from the impact of the Work Programme; equivalently, the overall estimated impacts are effectively averaged over those few lone parents who were affected by the Work Programme and the many who were not.²⁰

2.3 Summary

Since November 2008, entitlement to IS as a lone parent has been removed from lone parents according to the date of birth of their youngest child, starting with lone parents with a youngest child aged 12 and over, and ending (in the period under study in this report) with lone parents with a youngest child aged seven and over.

The focus of this report is on the impact of LPO on lone parents who were already receiving IS when the policy affected them. It does not investigate whether LPO has deterred lone parents with older children from claiming benefit. Because LPO might affect lone parents before the date on which they lose IS entitlement, this report examines the impact of LPO on potentially affected lone parents beginning 12 months before their loss of entitlement to IS.

The recommendation made by an earlier feasibility study was to implement a 'DiD' estimator using lone parents with younger children as the comparison group, and using cohorts of lone parents observed before and after LPO was introduced. The premise for this is that the differences in outcomes between lone parents with older and younger children that existed before LPO was introduced might be a good guide to the (unobservable) differences in outcomes between lone parents with older and younger children that might have existed after 2008, had LPO not been introduced. In other words, the differences in outcomes between the two groups before 2008 serves as a baseline against which to compare the differences in outcomes between the two groups after LPO was introduced.

For every sub-phase, the comparison group (of lone parents with younger children) consists of those lone parents whose youngest child turns four in the same window of calendar time as lone parents in each sub-phase lose IS entitlement, and information on outcomes in the absence of LPO are taken from up to five equivalent (ie same-aged youngest children) cohorts observed before LPO begins.

²⁰ Early figures provided on work entry following participation in the Work Programme were published in July 2012. Our assumption is that the vast majority of lone parents who may have been on the Work Programme between 10 June 2011 and 30 September 2011 will have remained on benefit during this time.

3 Benefit and work outcomes for lone parents potentially affected by LPO

3.1 Introduction

This chapter presents a descriptive analysis of the benefit and employment outcomes for the group of lone parents potentially affected by Lone Parents Obligations (LPO). It does not attempt to estimate the impact of LPO on those same outcomes: this is covered in Chapter 4. Instead, this chapter provides background, contextual information on the group of lone parents covered in the analysis, by giving a brief overview of outcomes (Section 3.2), with more detail on four different sub-groups:

- Those who do not leave Income Support (IS) during the window of observation (Section 3.3).
- Those who leave IS directly for Jobseeker's Allowance (JSA) (Section 3.4).
- Those who leave IS directly for Employment and Support Allowance (ESA) (Section 3.4).
- Those who move from IS to work (perhaps via other destinations) (Section 3.4).
- Those who are not receiving an out-of-work benefit and are not in work (Section 3.4).

Box 3.1 briefly describes how the sample for the analysis in this chapter was constructed, and how the various outcome measures were calculated.

Box 3.1 Details of the analysis of the outcomes of potentially affected lone parents

Section 2.1 described the population of interest, and how this was constructed from the available administrative data.

Outcomes are measured at monthly intervals for up to 36 months, or until 30 September 2011, whichever occurs first, beginning on the day on which the lone parent is estimated to be 12 months away from losing IS entitlement as a lone parent. On each day, lone parents can be characterised as being in one of the following mutually-exclusive states:

- Receiving IS with Carer's Allowance.
- Receiving JSA.
- Not receiving JSA, but receiving ESA/Incapacity Benefit (IB)/Severe Disablement Allowance (SDA).
- Not receiving JSA, ESA/IB/SDA, but receiving IS.
- Not receiving JSA, ESA/IB/SDA or IS, but receiving Carer's Allowance.
- Not receiving JSA, ESA/IB/SDA, IS or Carer's Allowance, but in work.

The remaining category (which is left blank in the figures) consists of those lone parents who do not appear to be receiving any of JSA, ESA/IB/SDA, IS or Carer's Allowance, and do not appear to be in work.

As background to the analysis in this chapter and Chapter 4, Appendix D reports sample sizes for each phase, and also reports the key characteristics of lone parents who are potentially affected by each phase of LPO. It shows that lone parents on IS and potentially affected by Phase 1 are older, have fewer dependent children, are more likely to be male, and have spent more time in the recent past receiving out-of-work benefits than lone parents on IS and potentially affected by later phases.

3.2 Outcomes for lone parents potentially affected by LPO, by phase

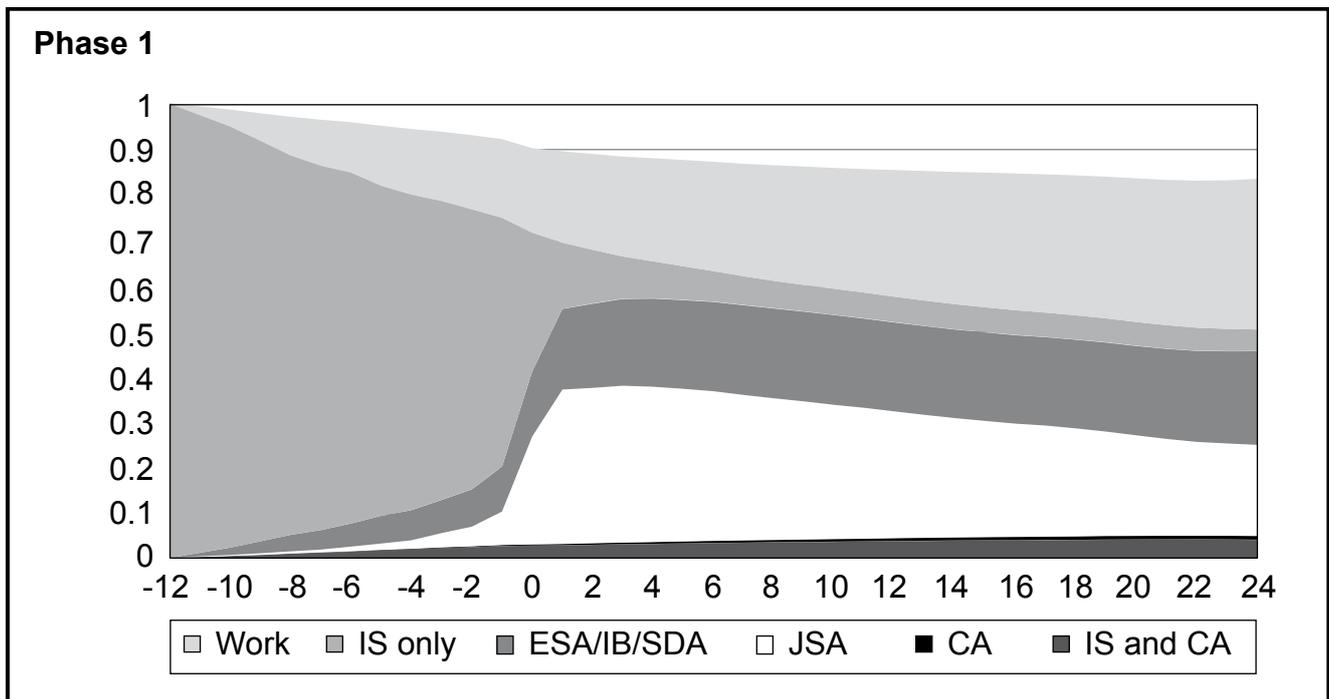
Figure 3.1 shows the main benefit and work outcomes by phase, and Figure 3.2 repeats this for those lone parents who have left IS by month 15. The figures show several important points:

- Because of the way the sample was constructed, all the lone parents are initially receiving IS. Over time, some of these lone parents leave IS, with some moving onto JSA and ESA, some claiming Carer's Allowance, some leaving out-of-work benefits altogether and entering work, as well as some leaving out-of-work benefits altogether and not entering work.
- The fraction receiving IS falls considerably around month 12, which corresponds to the date on which we estimate that they would have lost IS entitlement given the date of birth of the youngest child at the time that the lone parents were initially sampled. But some lone parents continue to receive IS after the date on which we thought they would lose IS entitlement. In month 18 (six months after the estimated date when they should have lost entitlement to IS), about 10 per cent of potentially affected lone parents are still receiving IS in Phases 1 and 2, and about 13 per cent in Phase 3.
- There is clear evidence of significant moves between the out-of-work benefits (IS, JSA and ESA/IB/SDA) around the time the lone parents lose IS entitlement, with the fraction of JSA and ESA rising as the fraction on IS falls.
- The fraction recorded as being in work increases steadily over time, from up to 12 months before loss of IS entitlement, with no discernible jump at the time that lone parents are estimated to lose IS entitlement.
- The fraction not receiving an out-of-work benefit and not recorded as being in work increases steadily over time but jumps up by some two to three percentage points at around month 12. This means that about two to three percentage points of lone parents affected by LPO appear to stop receiving out-of-work benefits, and do not appear to start work, about the time they are estimated to have lost IS entitlement; outcomes for these lone parents are explored further in Section 3.4.
- There are few very large differences in the outcomes between the three phases, but there are two points worth mentioning. Firstly, lone parents affected by Phase 1 of LPO are slightly more likely to go on ESA/IB/SDA than lone parents in the other phases. This is consistent with the fact that, from autumn 2008, people wanting to claim an out-of-work benefit on the grounds of disability had to claim ESA rather than IB, and this seems to have led to a larger-than-usual flow of lone parents from IS to IB during late 2007 and early 2008; it is also consistent with lone parents in this phase being older, on average, and having spent more time on benefit in the past. Secondly, lone parents in Phase 3 are slightly more likely to remain on IS than lone parents in the earlier phases. This is explored

further in Section 3.4, and suggests that lone parents affected by Phase 3 seem to be more likely to have subsequent children than lone parents in earlier Phases with older children.

- The results for Phase 3 are similar to results on destinations from a quantitative survey of lone parents who lost entitlement to IS in early 2011 (Coleman and Riley. 2012). That report estimated that amongst those who left IS, 41 per cent were receiving JSA, 13 per cent ESA, 33 per cent were in work, and nine per cent not on benefit or in work²¹, all measured 12 months after losing entitlement.

Figure 3.1 Outcomes for lone parents potentially affected by LPO, by Phase



²¹ The remainder were on other benefits.

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Figure 3.1 Continued

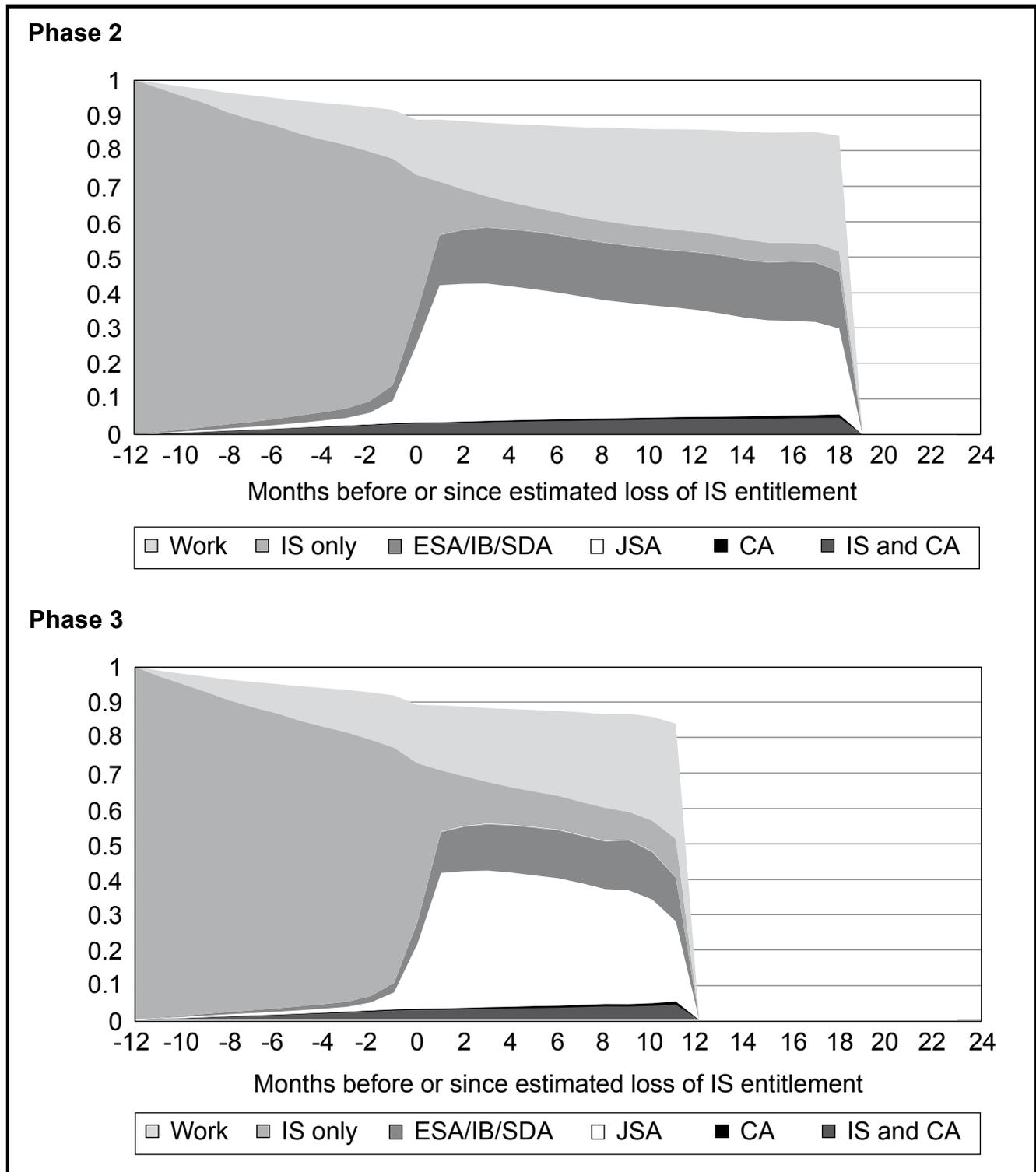


Figure 3.2 Outcomes for lone parents potentially affected by LPO and who leave IS by month 15, by Phase

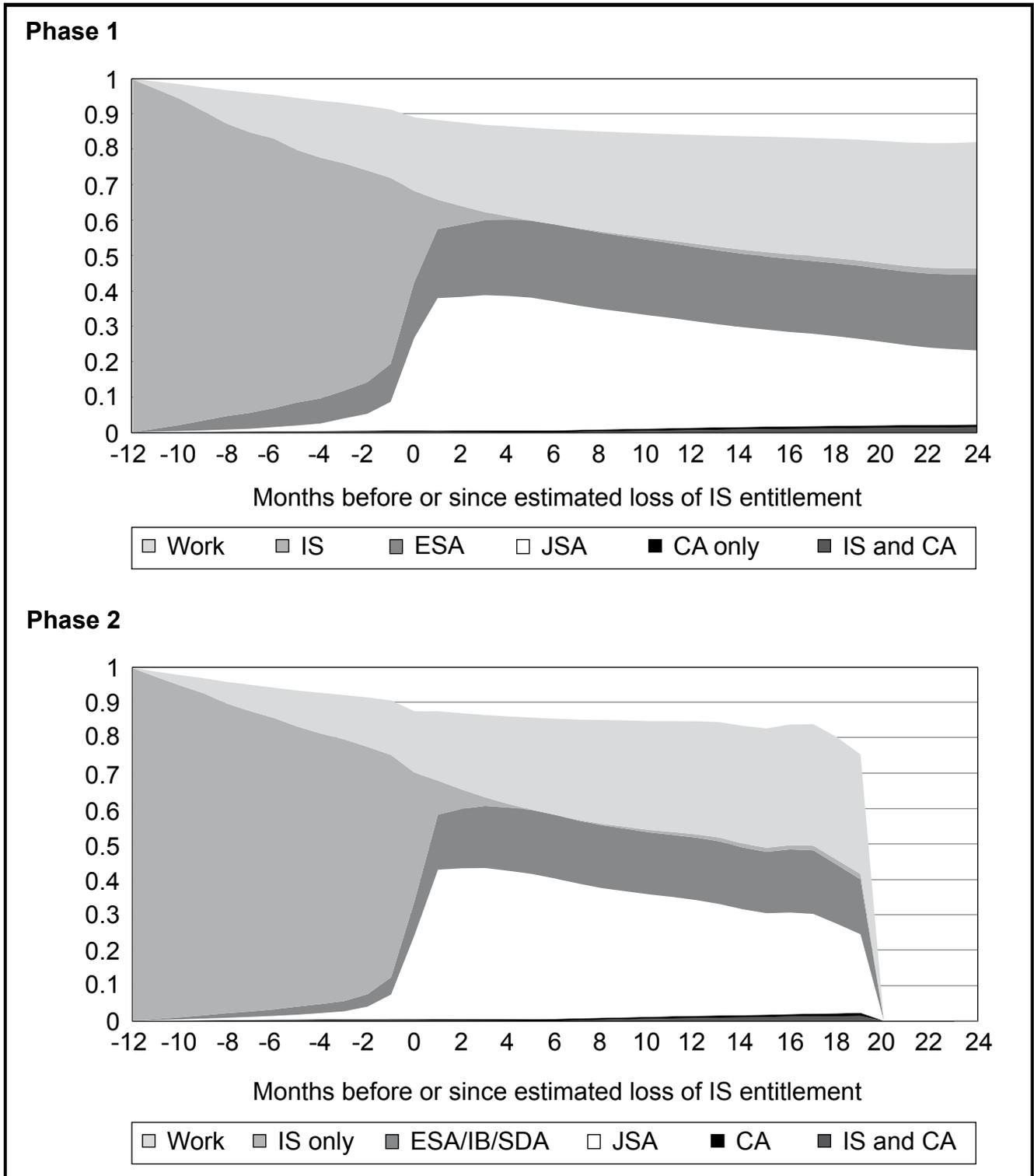
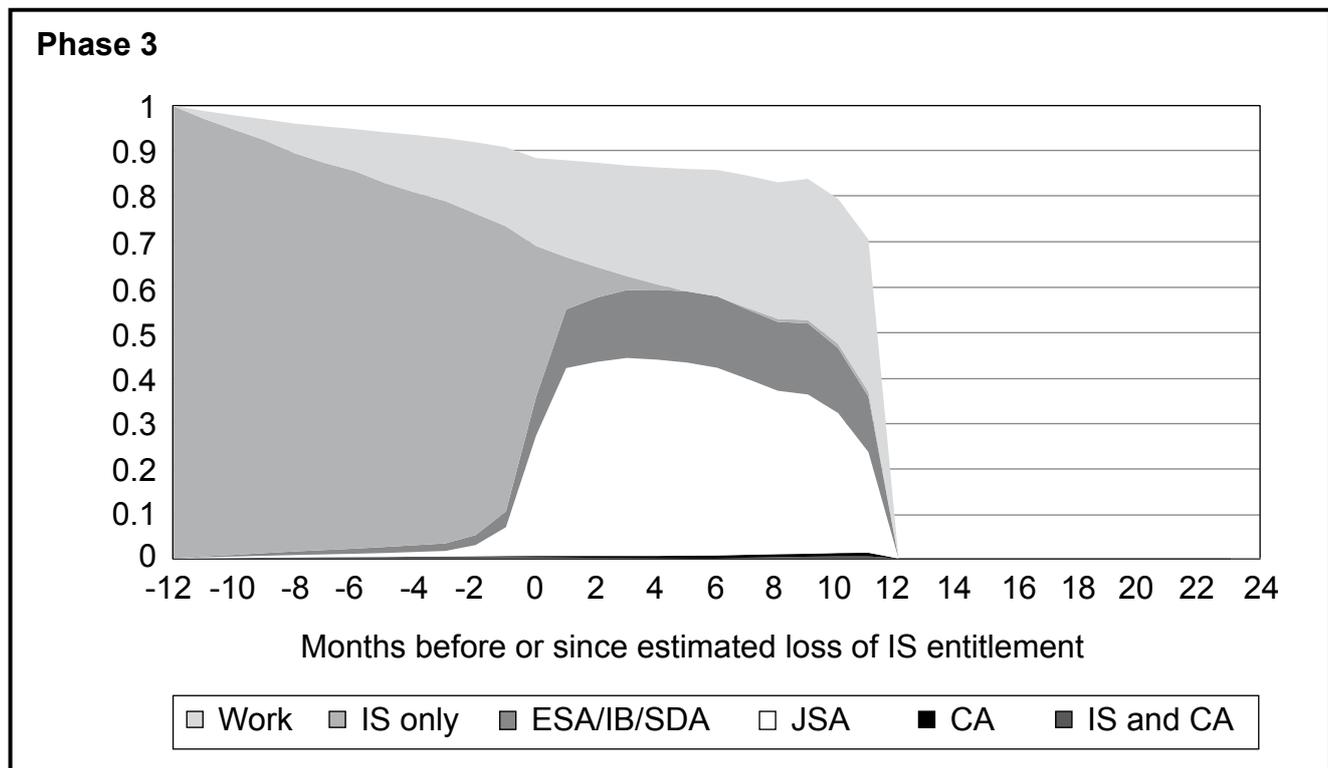


Figure 3.2 Continued



3.3 Characteristics of those lone parents remaining on IS

This sub-section analyses the characteristics of those lone parents who remain on IS after the estimated date of loss of IS entitlement.

About 10 per cent of lone parents in the sample were still receiving IS six months after the date on which they were estimated to lose IS entitlement. There are three reasons why this could occur:

- It could reflect that the lone parent is exempt from LPO.
- It could reflect inaccuracies in the data which mean that either the date on which they should have lost IS entitlement is wrongly estimated, or the data wrongly suggests that they have not left IS when in fact they have.
- It could reflect a mistake in the operation of the LPO policy in practice indicating they should have lost entitlement to IS, but didn't.

As noted in Chapter 2, there are some exemptions from LPO which cannot be observed in the available administrative data, but Tables 3.1 and 3.2 examine those exemptions which can be observed. The tables provide breakdowns for the following mutually-exclusive categories:²²

²² If more than one was applicable, lone parents were placed in the first category.

- Receiving Carer’s Allowance along with IS.²³
- Receiving IS but not as a lone parent, either because the claim is now from a couple or because there are no dependent children.
- Receiving IS with a younger child
- Receiving IB along with IS.²⁴
- None of the above, ie there was no identifiable reason why the lone parent was still receiving IS.

Among Phase 1 lone parents (Table 3.1), very few continue to receive IS because they have since had another child, but some continue to receive IS as single adults (perhaps in conjunction with IB).

Table 3.1 Reasons for remaining on IS after date when estimated to lose IS entitlement, Phase 1

	18 months after sampled (6 months after IS end date)	27 months after sampled (15 months after IS end date)	36 months after sampled (24 months after IS end date)
Receiving Carer’s Allowance	23%	29%	31%
No longer a lone parent	3%	4%	7%
With a younger child	9%	9%	8%
Receiving ESA/IB/SDA	28%	27%	27%
No apparent reason	37%	31%	27%
All cases	100%	100%	100%
(as fraction of all potentially eligible)	15,757 (14%)	14,756 (13%)	12,284 (11%)

In Phase 2 (Table 3.2), slightly more had started a claim for Carer’s Allowance and slightly fewer were no longer lone parents. Compared to Phase 1, more parents in Phase 2 were observed to be receiving IS and having a younger child. For lone parents in Phase 3, there was no identifiable reason why the lone parent was still receiving IS in around a third of cases, with roughly equal fractions of the remainder having started a claim of Carer’s Allowance or having had a younger child. Overall though, there was no identifiable reason why the lone parent was still receiving IS in around a third of cases (across phases).

²³ Box 3.1 notes that lone parents receiving Carer’s Allowance when sampled were excluded from the sample, because they were exempt from LPO. An ex post analysis of lone parents affected by LPO might well conclude that these lone parents were never potentially affected by LPO. However, the sample for analysis in this chapter was constructed by taking those lone parents who, given their date of birth of youngest child, were due to lose IS entitlement in 12 months. The lone parents in this category, then, must have started a claim of Carer’s Allowance in the 12 months preceding the date when they would have lost IS entitlement.

²⁴ Lone parents receiving IB when sampled were excluded from the sample, because they were exempt from LPO. The lone parents in this category, then, must have started a claim of IB in the 12 months preceding the date when they would have lost IS entitlement, something which was possible only for lone parents affected by Phase 1 of LPO.

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Table 3.2 Reasons for remaining on IS after date when estimated to lose IS entitlement, Phase 2 and 3

	Phase 2 18 months after sampled (6 months after IS end date)	27 months after sampled (15 months after IS end date)	Phase 3 18 months after sampled (6 months after IS end date)
Receiving Carer's Allowance	37%	44%	27%
No longer a lone parent	1%	1%	1%
With a younger child	24%	21%	36%
Receiving ESA/IB/SDA	1%	1%	<1%
No apparent reason	36%	32%	36%
All cases	100%	100%	100%
(as fraction of all potentially eligible)	8,619 (10%)	5,364 (8%)	13,390 (8%)

Further analysis shows (the detail for which is provided in Appendix D), that overall there were no large differences between lone parents who stayed on IS and those who left, except for their history of benefit receipt in the six months prior to when the lone parents were sampled. In particular, across phases, it appears that lone parents who, before the start of the observation period, spent more time on ESA/IB/SDA and more time receiving Carer's Allowance (one of the possible exemptions from LPO) and less time working were more likely to remain on IS at the end of the observation period.

3.4 Outcomes for those lone parents who leave IS

This section analyses the characteristics of and transitions made by lone parents who are potentially affected by LPO and who go on to leave IS. It focuses on four sub-groups:

- Those who leave IS directly for JSA (Section 3.4.1).
- Those who leave IS directly for ESA (Section 3.4.2).
- Those who move from IS to work (perhaps via other destinations) (Section 3.4.3).
- Those who are not receiving an out-of-work benefit and are not in work (Section 3.4.4).

Box 3.1 gives details of how the samples were constructed and of the precise definition of the outcome measures. To account for the fact that some lone parents are followed for longer periods of time than others, as well as to show how transition patterns change with time, this section uses 'survival graphs'; an explanation of how to interpret these plots is given in Box 3.2.

Box 3.2 Interpreting ‘survival graphs’

The graphs in this section (which are known as ‘Kaplan-Meier survival graphs’) plot the fraction of a group who have not left their initial state as time elapses (equivalently, ‘1 minus the fraction shown’ is the fraction of a group who have experienced an exit from the initial state).

All the graphs are constructed by taking a group of lone parents who are initially all in the state, and so the fraction still in that state begins at 1 (or 100 per cent).

As time passes, some will leave this state. At each moment in time (represented on the horizontal axis), the graphs show the fraction of individuals who have not yet left the initial state. For example Figure 3.4 shows how long it takes lone parents who have moved from IS to JSA to move into work. Initially, all individuals start out on JSA and not in work. After 12 months, approximately a quarter of lone parents (potentially affected by Phase 1 of LPO) have found work. Thirty-six months after having first moved from IS to JSA, just under a half of lone parents in Phase 1 have found work. The graph reflects only how long it takes lone parents initially to find work; the graphs cannot be used to show how many are subsequently in work (in other words, it shows simply the time until the first move from JSA to work).

3.4.1 Outcomes for lone parents affected by LPO and who move from IS to JSA

Figure 3.3 and Figure 3.4 look at lone parents affected by LPO who move from IS to JSA. Figure 3.3 plots, separately by phase, the fraction that have not yet left JSA at different points of time (where time is recorded in months since moving from IS to JSA), and Figure 3.4 plots, separately by phase, the fraction that remain out of work at different points of time.²⁵

²⁵ Note that the full 36 months can be observed only for those parents affected by Phase 1 of LPO and who moved very quickly from IS to JSA. Lone parents in later phases can be followed for less time: up to 24 months, for example, for lone parents in Phase 3.

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Figure 3.3 Proportion of lone parents who stay on JSA (after having moved from IS to JSA)

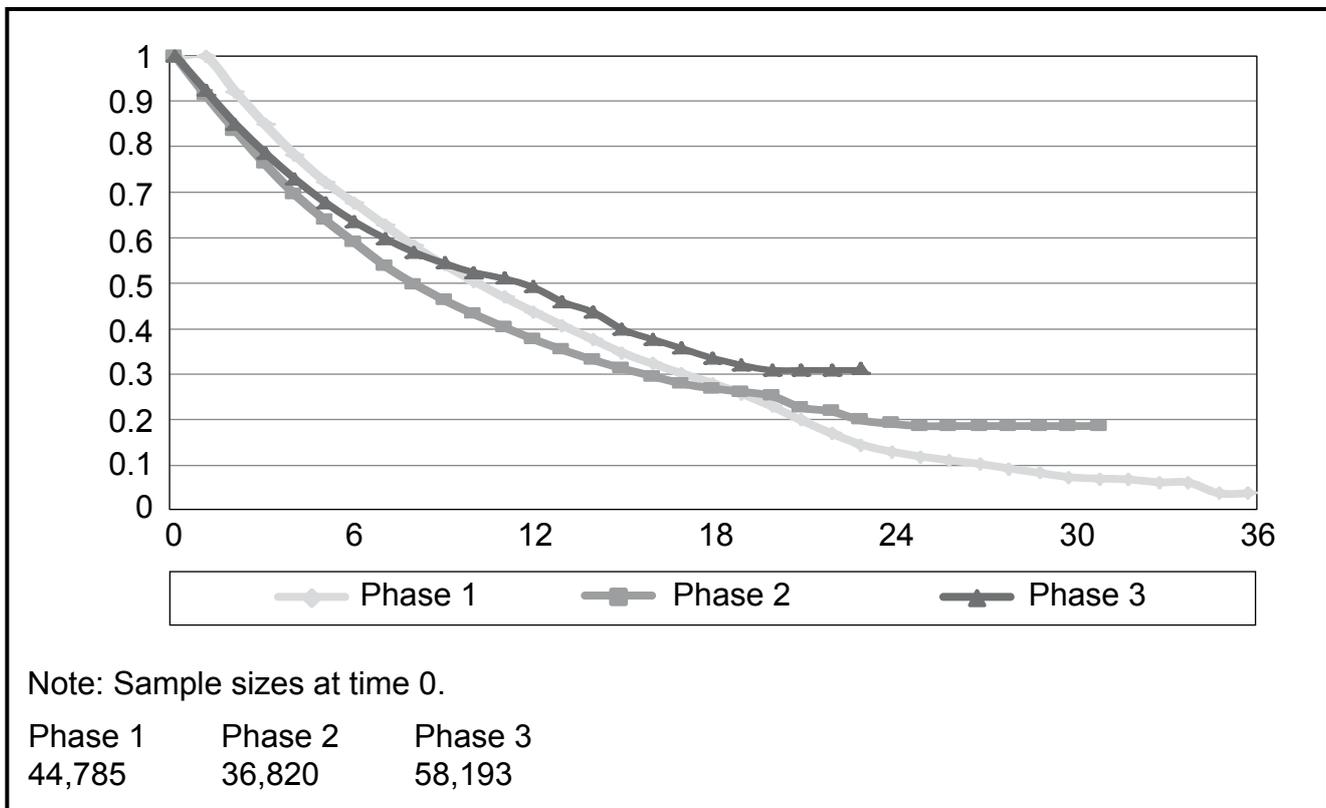
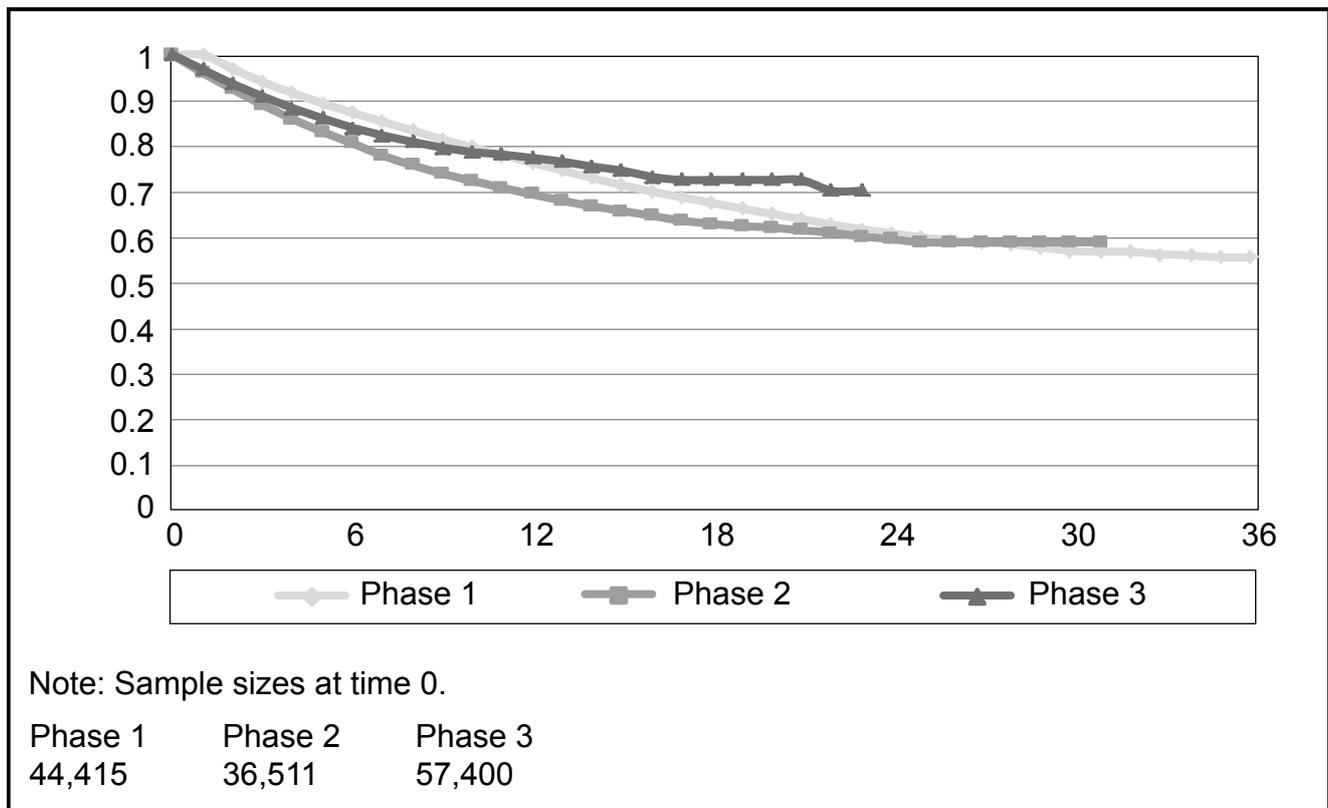


Figure 3.3 shows that few claims of JSA by lone parents who move from IS to JSA last for very long periods of time: only four per cent of lone parents in Phase 1 have a continuous claim of JSA for 36 months, and about half have a claim of less than 12 months (although they may return to JSA in a separate claim). Lone parents affected in Phase 3 are slightly more likely not to have left JSA after 12 months compared to lone parents in the other two phases.

However, many of these exits from JSA do not correspond to moves into work. Figure 3.4 shows that, 18 months since moving from IS to JSA, between three-quarters and two-thirds of lone parents have not recorded a move into work. Even after 30 months, less than half of former JSA recipients have recorded a move into work (some of whom, of course, may no longer be in work).

Figure 3.4 Proportion of lone parents who have moved from IS to JSA who have not since found work



Lone parents who leave JSA but who are not recorded as moving into work are either moving to another benefit destination (IS or ESA or Carer’s Allowance), or may no longer be receiving JSA for another reason, other than moving into work. Table 3.3 shows the initial destination of lone parents who leave JSA²⁶. It shows that, on average, around 40 per cent of lone parents who leave JSA move into work, around 15 per cent move from JSA to ESA or IS, and that a large percentage of lone parents (especially in Phase 1) are leaving JSA for a destination that is neither another out-of-work benefit nor in work (although this will include those who have a gap of over a month between claims of different benefits).

²⁶ Results for the three phases should not be directly compared, as lone parents in earlier phases are observed for longer periods of time and, therefore, have more time to make a transition from JSA (whatever the destination).

Table 3.3 Destination states for lone parents leaving JSA in the observation period

Destination state (% of all who leave JSA)	All	Phase 1	Phase 2	Phase 3
IS	6.4 (5,400)	4.9 (1,871)	6.3 (1,589)	9.0 (1,940)
ESA	7.3 (6,196)	7.7 (2,937)	7.0 (1,724)	7.1 (1,535)
Work	40.0 (33,925)	35.8 (13,686)	44.4 (11,148)	42.2 (9,091)
Unknown	46.4 (39,331)	51.6 (19,693)	42.4 (10,634)	41.7 (9,004)
All	100.0 (84,852)	100.0 (38,187)	100.0 (25,095)	100.0 (21,570)

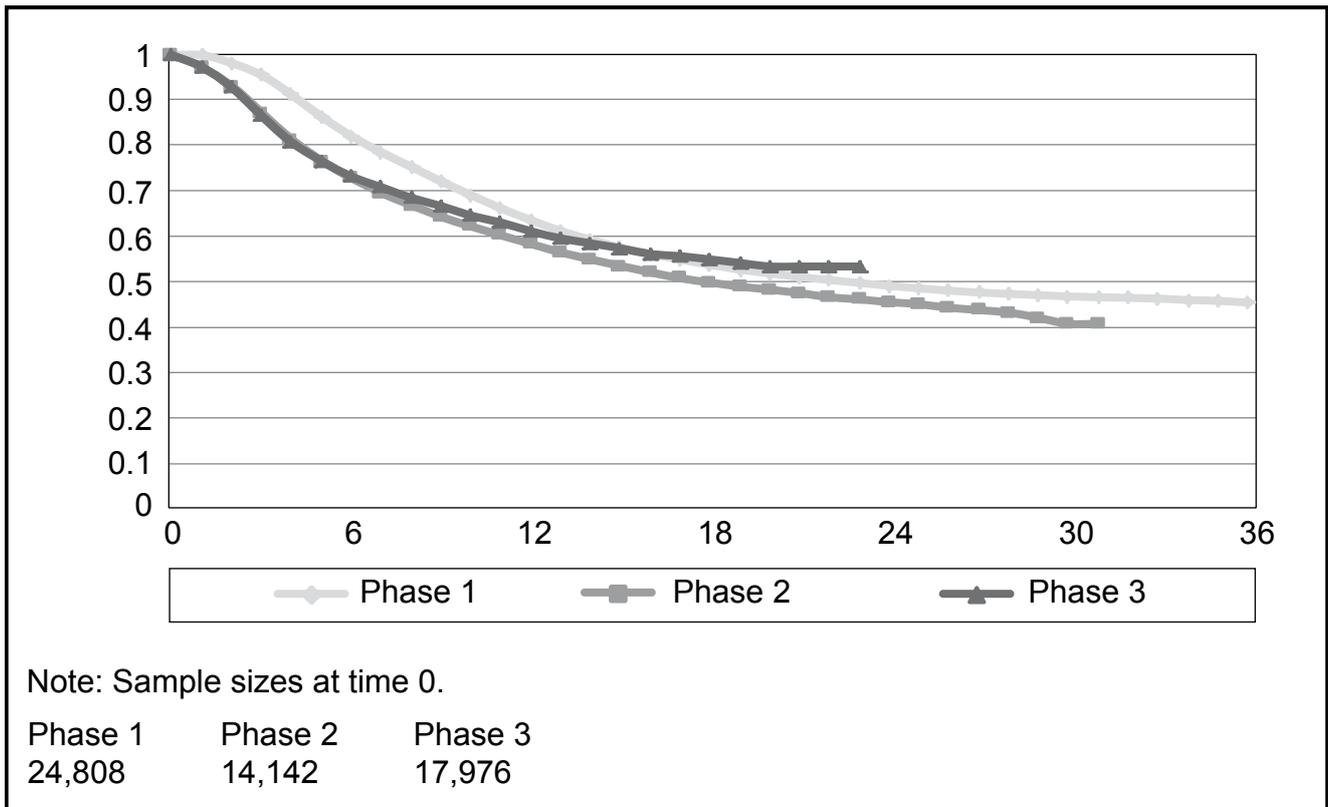
3.4.2 Outcomes for lone parents affected by LPO and who move from IS to ESA

Some lone parents affected by LPO move from IS to ESA. Figure 3.5 shows that large proportions of lone parents who move from IS to ESA then remain on ESA, with about two-thirds of these ESA claims still ongoing after 12 months. The survey of lone parent destinations after leaving IS found that many ESA claimants have also claimed JSA at some point after leaving IS (Coleman and Riley, 2012). However, the large majority of these lone parents have claimed JSA before claiming ESA.²⁷

Figure 3.6 shows the time from moving onto ESA until finding work. Consistent with the expectation that lone parents moving on to ESA are more likely to face health-related barriers to employment, the proportions of lone parents who move from IS to ESA and subsequently move into work is low. For example, after 30 months from having moved on to ESA only 23 per cent of lone parents affected in Phase 1 have moved into work (and some of these may have subsequently left work).

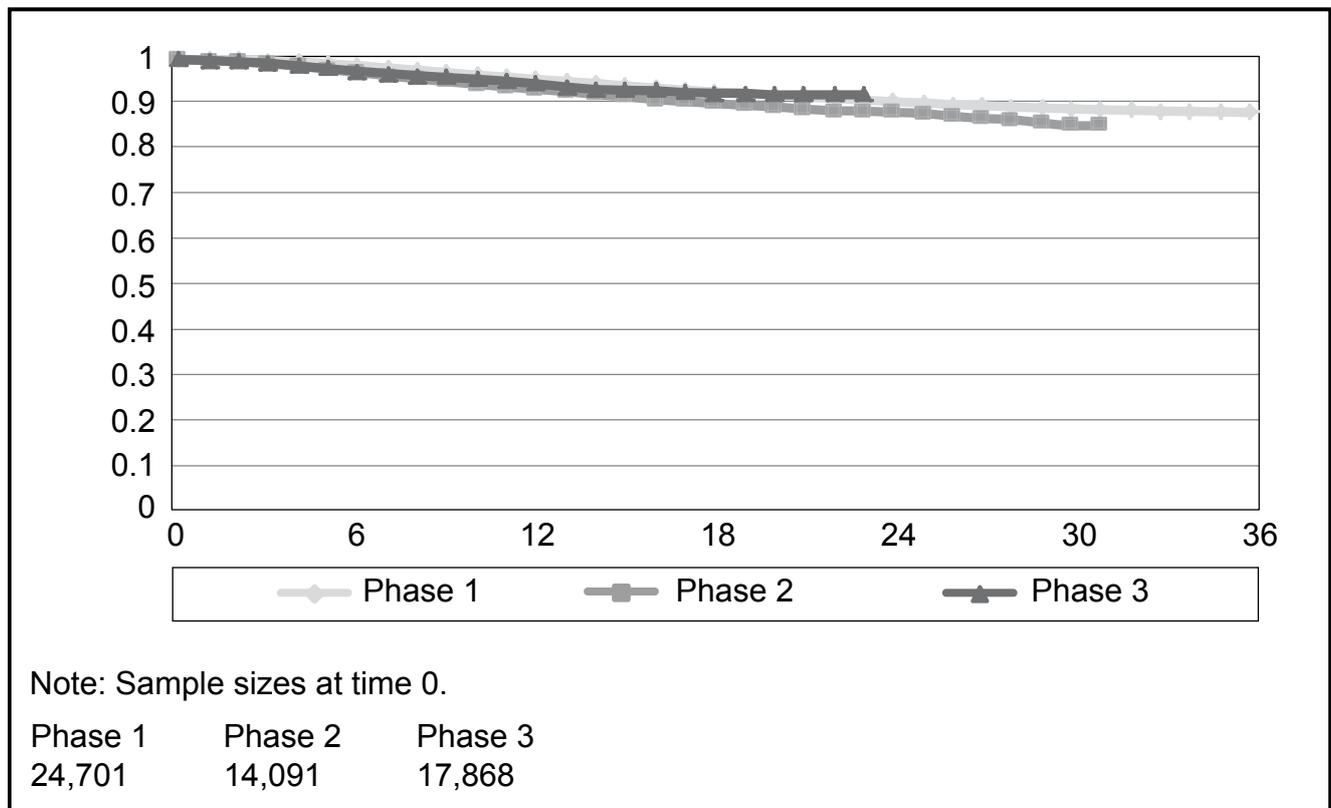
²⁷ Coleman and Riley found that 12 per cent of lone parents have claimed both ESA and JSA; of these, 65 per cent claimed JSA before making an ESA claim; Coleman and Riley (2012), p.20.

Figure 3.5 Proportion of lone parents staying on ESA (after moving from IS to ESA)



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Figure 3.6 Proportion of lone parents who have moved from IS to ESA who have not since found work



A comparison between Figure 3.5 and Figure 3.6 shows that, as with those lone parents whose JSA claim ends, many who leave ESA are not recorded as moving into work. Table 3.4 shows the destinations of those who leave ESA²⁸. Only a very small proportion (typically less than ten per cent) of lone parents leaving ESA does so as a result of moving into work. The largest proportion of ESA off-flows is to JSA: this pattern is consistent with lone parents initially making a claim for ESA rather than JSA, but then moving to JSA, probably due to being found 'fit for work' following a Work Capability Assessment. The second most common destination is 'unknown', i.e. not on benefits, but also not in work (although this will include those who have a gap of over a month between claims of different benefits).

²⁸ Results for the three phases should not be directly compared, as lone parents in earlier phases are observed for longer periods of time and, therefore, have more time to make a transition from ESA.

Table 3.4 Destinations for lone parents leaving ESA

Destination state (% of all who leave ESA)	All	Phase 1	Phase 2	Phase 3
IS	12.9 (3,095)	16.4 (2,039)	7.5 (497)	11.1 (559)
JSA	50.0 (12,003)	42.8 (5,308)	58.2 (3,833)	57.1 (2,862)
Work	7.8 (1,861)	7.6 (949)	8.5 (560)	7.0 (352)
Unknown	29.4 (7,064)	33.2 (4,119)	25.8 (1,701)	24.8 (1,244)
All				

3.4.3 Outcomes for those who eventually move into work of 16 hours or more

This sub-section examines the patterns of transitions made by lone parents who eventually move into work. Table 3.5 shows their destination immediately after leaving IS²⁹. The analysis looks at the first spell of work for an individual only.

Most lone parents who eventually move into work do so directly from IS (58 per cent)³⁰. Just under a third of lone parents who move from IS to work do so via an intermediary spell of JSA.³¹

²⁹ Results for the three phases should not be directly compared, as lone parents in earlier phases are observed for longer periods of time and, therefore, have more time to make a transition into work.

³⁰ Since our window of observation is capped at 36 months, moving into a non-work state after IS essentially reduces time during which a transition into work can be observed. For example, lone parents affected during Phase 3 are observed to have the highest share of direct IS to work transitions. However, this does not mean that lone parents are more likely to move directly into work during Phase 3. Instead, these parents have been observed for the shortest period of time among the three groups. Whenever they transition to another benefit or another non-work state, there is little time left during which they can be observed entering into work. As expected, few lone parents enter work via ESA.

³¹ These are similar to results on destinations from a quantitative survey of lone parents who lost entitlement to IS in early 2011, which found that, among those who moved into work, 52 per cent did so from IS, and 35 per cent did so via a claim of JSA or ESA (p33 of Coleman and Riley. 2012).

Table 3.5 Immediate destination after moving off IS for lone parents who eventually find work

Destination state	All	Phase 1	Phase 2	Phase 3
JSA	30.4 (38,734)	34.2 (16,930)	37.6 (12,419)	20.9 (9,385)
ESA	3.5 (4,392)	5.0 (2,484)	3.9 (1,296)	1.4 (612)
Work	57.5 (73,269)	51.0 (25,267)	48.9 (16,147)	70.9 (31,855)
Unknown	8.7 (11,048)	9.8 (4,833)	9.5 (3,139)	6.9 (3,076)
All	100 (127,443)	100 (49,514)	100 (33,001)	100 (44,928)

3.4.4 Outcomes for those who are not receiving an out-of-work benefit and are not recorded as being in work

One concern about LPO is that lone parents might lose entitlement to IS, but not move on to another benefit or find work. Figure 3.1 in Section 3.2 showed that around 15 per cent of potentially affected lone parents were not receiving an out-of-work benefit and not recorded as being in work around 12 months after their estimated loss of entitlement to IS.

Although these lone parents are not recorded as receiving an out-of-work benefit and not recorded as being in work, some of them do appear in other parts of the Work and Pension Longitudinal Study (WPLS), and so it is possible to say something about their circumstances. This sub-section, therefore, examines what other benefits and tax credits are being received by the lone parents who are not receiving an out-of-work benefit (including Carer's Allowance) and have not reported being in work of 16+ hours when claiming tax credits. Given the available administrative data, lone parents can be divided into one of the following mutually exclusive categories:³²

- They could be working less than 16 hours themselves, but in a couple entitled to WTC due to their partner's working hours.
- They could be entitled to WTC as a lone parent or a single adult, but without reporting work of 16 or more hours (this would suggest an inconsistency between the data on 'entitlements to WTC' and the data on hours worked recorded in the tax credit administrative data).
- They could be receiving Child Tax Credit, but not have reported working 16 or more hours.
- They could be receiving no other working-age benefits or tax credits in their own right³³.

Figure 3.7 shows the breakdown of lone parents who are not recorded as receiving an out-of-work benefit and not recorded as being in work separately by Phase. In Phase 1, around half of the cases do not appear to be receiving any tax credit or out-of-work benefit in their own right, around 40 per cent are entitled to Child Tax Credit, and most of the rest have an entitlement to WTC as a couple. In later phases, the fraction which have an entitlement to

³² If more than one applied, lone parents were put into the first category that applied.

³³ It was not possible to determine whether any of these lone parents went on to be the partner of a claimant of an out-of-work benefit.

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WTC as a couple is higher, and the fraction which do not appear to be receiving any tax credit or benefit in their own right is lower. This pattern is not entirely surprising: the lone parents in Phase 1 had a youngest child aged between 12 and 15 when first sampled, and so it is clearly possible that some will have no dependent children after at least a year, and may not be entitled to tax credits as a single person either.

Figure 3.7 Outcomes for lone parents not receiving any of ESA/IB/SDA, CA, IS, JSA and not reporting work of 16+ hours when claiming tax credits, by Phase

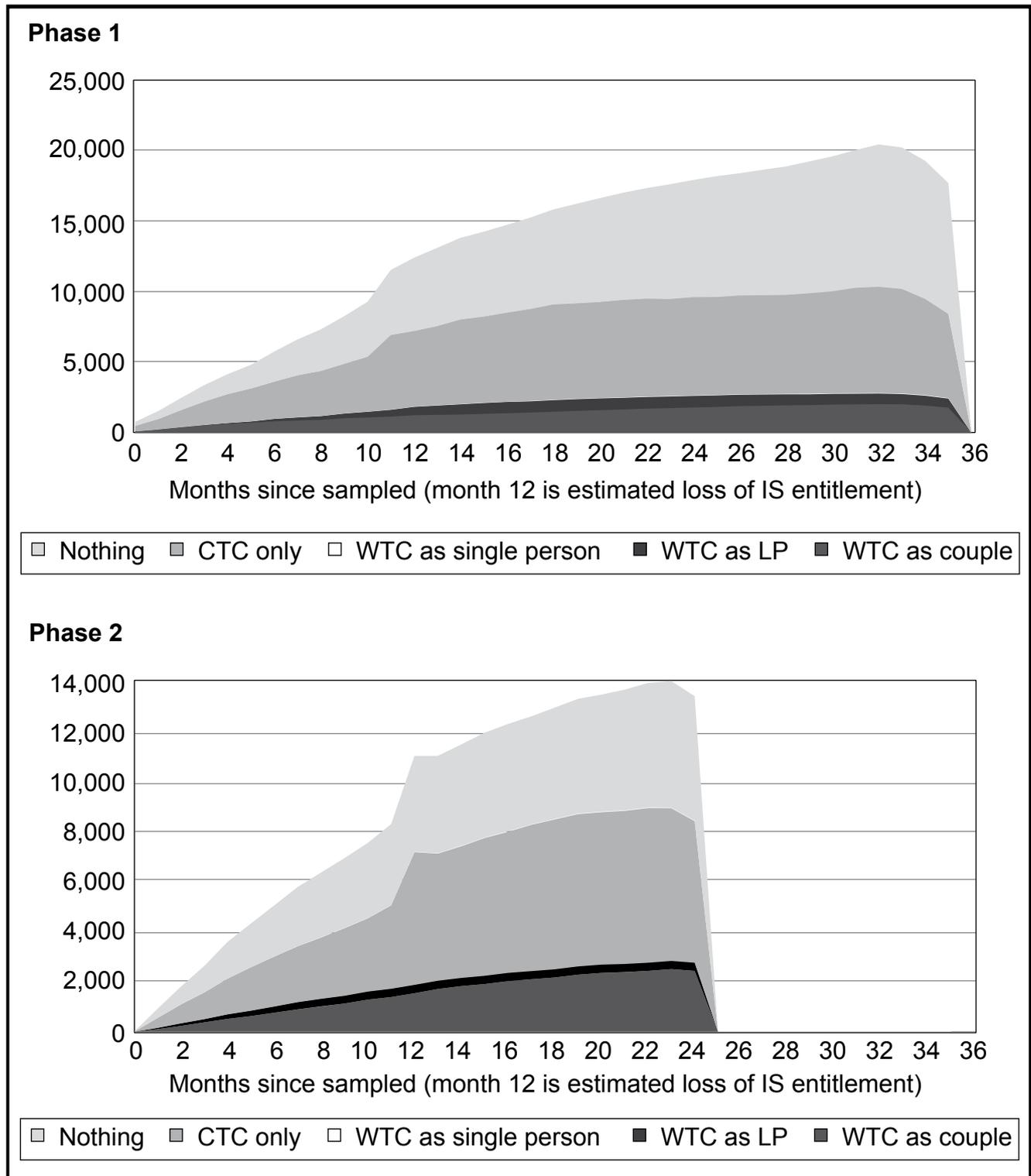
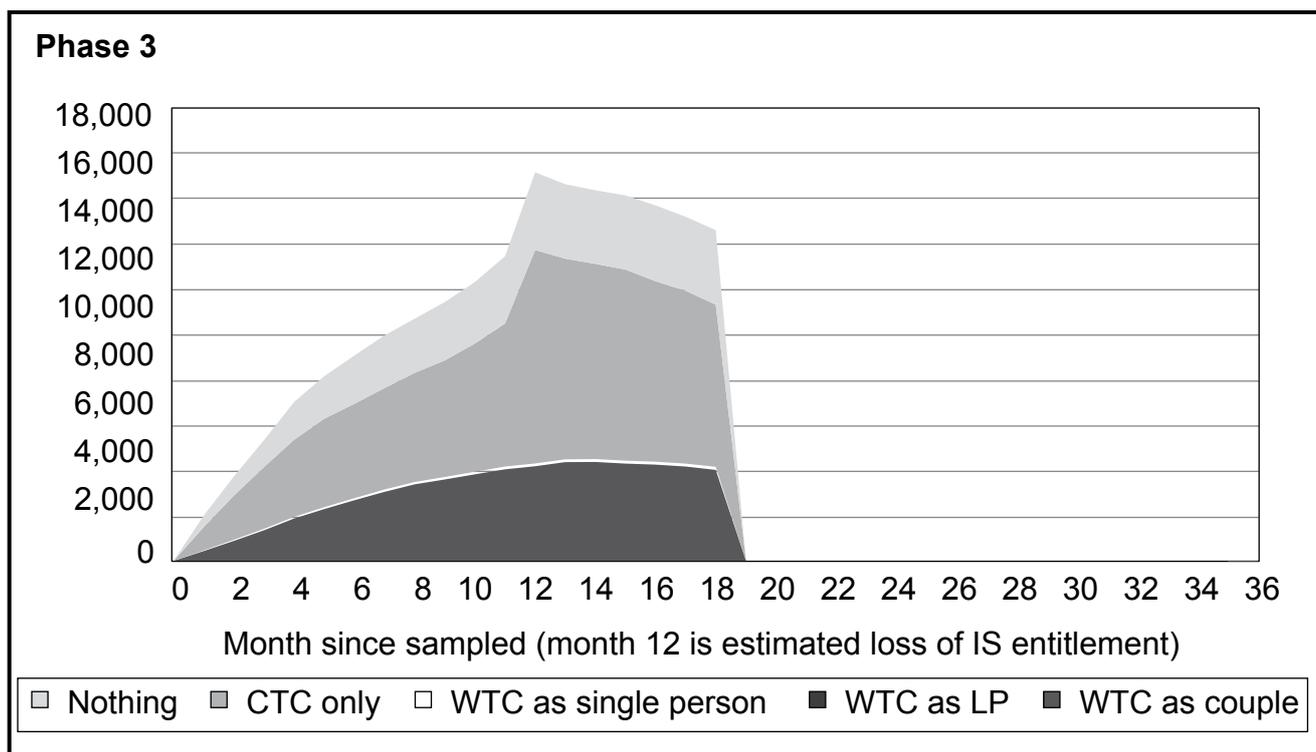


Figure 3.7 Continued



Half of lone parents who are not recorded as receiving an out-of-work benefit and not recorded as being in work of 16 or more hours (approximately seven to eight per cent of all lone parents potentially affected by LPO) appear, 12 months after the estimated loss of entitlement to IS, to be receiving only Child Tax Credit. Of the remaining half (again about seven to eight per cent of all lone parents potentially affected by LPO), some do not seem to be receiving any out-of-work benefits or tax credits in their own right. Even within that last group, these lone parents could be in one of a number of situations: some may no longer have dependent children and are not claiming or eligible for WTC in their current circumstances; some may have re-partnered and not be claiming tax credits as a couple; some may have re-partnered and in a family receiving benefits that are being claimed by their new partner.

Because of the combination of sources used for this part of the analysis and the potential for error in the data, it is difficult to draw firm conclusions about the existence or circumstances of such a group of lone parents from this analysis (in particular, former lone parents who no longer have dependent children are much less likely to receive an out-of-work benefit or a tax credit, so are less identifiable in the data, and therefore, the analysis for this group is even more tentative). Section 1.4.3 discusses the problems of using administrative data to make strong inferences about this group, concluding that, because of the combination of data sources used to identify such lone parents, and the potential for error in the data, it is difficult for this analysis to draw firm conclusions about the size of or circumstances of such a group of lone parents. It also discusses why the available administrative data does not provide a complete record of whether lone parents subsequently marry or live in a couple.

But, in broad terms, these findings are consistent with those from the survey of lone parents affected by Phase 3 of LPO. Of these lone parents, whose entitlement to IS ended in early 2011, 11 per cent were not in work and not receiving any of IS, ESA or JSA 12 months later, half of whom had re-partnered (Coleman and Riley (2012)). Coleman and Riley also found that:

'At the time of the Wave 2 interview, [as well as two per cent who were working for less than 16 hours], nine per cent were neither in work nor receiving benefits, and five per cent had not been in work or on benefits at all since the end of their IS claim. Looking in more detail at those who were not in work or on benefit at the time of the Wave 2 survey, many of these had re-partnered since their IS claim (48 per cent). This group was also younger than average, often with a large number of children (21 per cent of those with four or more children were neither in work nor on benefits at the time of the Wave 2 interview). Few respondents in this group had worked since leaving IS (nine per cent), and most were not looking for work (70 per cent). The income of these respondents was similar to others in the survey, often because of the presence of a partner or someone else in the household who was in work.'

(p23)

Chapter 5 of Casebourne *et al.* (2010), which is based on qualitative interviews with lone parents affected by the early stages of LPO, also investigates the circumstances of a (small sample of) lone parents who are neither receiving an out-of-work benefit nor in work.

3.5 Summary

This section has analysed the main benefit and work outcomes, as recorded in the WPLS, for those lone parents potentially affected by LPO. It does not say anything about the extent to which LPO caused these outcomes to be different from what would otherwise have occurred: the next chapter looks in more detail at the net impact of LPO on these outcomes.

The fraction of lone parents potentially affected by LPO receiving IS falls considerably around the date on which it is estimated that they should lose IS entitlement, but there are significant moves between the out-of-work benefits (IS, JSA and ESA/IB/SDA), with the fraction of JSA and ESA rising as the fraction on IS falls. The fraction recorded as being in work increases steadily over time, with no discernible jump at the time that lone parents are estimated to lose IS entitlement. Lone parents affected by Phase 1 of LPO are slightly more likely to receive ESA/IB/SDA following a move from IS than lone parents in the other phases.

Approximately 12 months after the date on which it is estimated that they should lose IS entitlement, around 10 per cent of potentially affected lone parents are still receiving IS. The majority of these have experienced a change in circumstances which means that they are still eligible to receive Income Support, but, for around a third (representing around three to four percentage points of all of those potentially affected by LPO), there was no identifiable reason why the lone parent was still receiving IS at this time. Lone parents in Phase 3, who are on average younger than those in earlier phases, are slightly more likely to have another child in the 12 months preceding what would otherwise have been their loss of IS entitlement.

The majority of lone parents affected by LPO who move from IS to JSA or ESA do not subsequently move into work during the period they are observed. For example, 18 months after moving from IS to JSA, only a quarter (Phase 1) or a third (Phase 2) of lone parents have moved into work, and 18 months after moving from IS to ESA or IB, only one in ten have moved into work. Of those lone parents who do move into work, most move directly from IS to work.

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Twelve months after the estimated loss of entitlement to IS, about 15 per cent of lone parents affected by LPO seem to be not receiving any out-of-work benefits and do not report being in work of 16 hours or more (and the fraction in this group does increase by around two to three percentage points at the time they are estimated to have lost IS entitlement). Because of the combination of sources used for this part of the analysis and the potential for error in the data, it is difficult to draw firm conclusions about the circumstances of this group. About half of these are receiving Child Tax Credit, suggesting they are still a lone parent with dependent children, but are not claiming WTC. Of the remaining half, some do not seem to be receiving any out-of-work benefits or tax credits, and some are receiving tax credits as part of a couple. These findings are in line with other parts of the evaluation of LPO.

4 The impact of LPO on affected lone parents

This chapter presents estimates of the impact of LPO; in other words, it answers the question ‘what difference did Lone Parent Obligations (LPO) make to the outcomes of those affected by it?’.

As described in Section 2.1, these estimates use a difference-in-differences (DiD) design, which compares the outcomes of lone parents affected by LPO with those of lone parents with younger children, and then uses data from before LPO began to assess what differences would normally be expected between lone parents with differently-aged children receiving Income Support (IS).

The main results are presented in Section 4.1 and look at five outcomes related to being on an out-of-work benefit and being in work.

Section 4.2 looks at a number of specific areas of interest when looking at the impact of LPO; namely the impact on earnings, on having another child, and on whether the main impacts vary significantly by age of the lone parent.

Appendix C contains the technical details about how results reported in this chapter were estimated and how inference was conducted about the statistical significance of the estimated results.

4.1 The impact of LPO on the main benefit and work outcomes

This sub-section presents the main results, looking at the impact LPO had on:

- Whether a lone parent is receiving IS (Section 4.1.1).
- Whether a lone parent is receiving Jobseeker’s Allowance (JSA) (Section 4.1.2).
- Whether a lone parent is receiving Employment and Support Allowance (ESA)/Incapacity Benefit (IB)/Severe Disablement Allowance (SDA) (Section 4.1.2).
- Whether a lone parent is receiving any of IS, JSA and ESA/IB/SDA (Section 4.1.3).
- Whether a lone parent is in work (of 16 or more hours according to the tax credit administrative data) (Section 4.1.4).

4.1.1 Probability of being on IS

Table 4.1 reports the DiD estimates of the impact of LPO on the probability that a lone parent potentially affected by LPO is on IS at different points in time relative to the estimated date of loss of IS entitlement. The reported coefficients are from a linear probability model and can be interpreted as percentage point changes. Each row presents the estimated coefficients and standard errors for a different sub-phase, and the headings of the columns indicate how many months after the start of the observation period the outcome of interest (in this case, whether on IS) is observed. As previously explained, the observation period begins

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12 months before the estimated loss of entitlement to IS and the first estimates after the loss of entitlement are those reported in column 3 (for three months after estimated loss of entitlement).³⁴

Across all sub-phases, there is evidence of very small anticipation effects nine months before the loss of entitlement (column 1), with the largest estimates never exceeding three percentage points. LPO, however, does seem to have caused some lone parents to leave IS three months earlier than when their IS entitlement would have ended (column 2). In most of the early sub-phases, this anticipation effect is larger than seven percentage points, but generally smaller for the later ones (from p2bF). As a result, the average impact reported for Phase 3 is less than five percentage points (bottom row); this might reflect that lone parents in Phase 3 probably had more warning about LPO than those in earlier phases.

Column 3 shows that three months after the estimated loss of entitlement, the probability of being on IS for a lone parent affected by LPO in the later sub phases of phase 1 drops by more than 50 percentage points, while the reduction in the probability exceeds 55 percentage points (and is often close to 60 percentage points) in phase 2 and 3. The rows at the bottom of the table show that the average reduction in the probability of being on IS in phases 2 and 3 after 15 months of observation is around 57 percentage points.

The figures show that in most sub-phases the estimated impacts of LPO appear substantially stable nine months after the estimated loss of IS entitlement. This is consistent with most of those who are left on IS at this time being exempt from LPO, and therefore, remaining on IS through the rest of the observation period.

³⁴ We do not report estimates for the impact of LPO at time 0 (loss of entitlement) because differences in the accuracy of the estimated date of the loss of IS entitlement across phases lead to artificial differences in the estimates of the impact of LPO across phases at that point in time. In most 'flow' phases the exact date of loss of entitlement corresponds to the youngest child's birthday, while for the stock phases it also depends on the Work Focused Interview (WFI) date. The differences in the estimated impacts might be due to the fact that a prediction of the last day of entitlement is used, rather than that of the first day of lack of entitlement. Because this is more accurately predicted for the flow phases (since it corresponds to the date of birth of the child in most cases) this lead to more lone parents being observed on IS at that point in time within those phases. This problem becomes gradually negligible over time, so we report estimates at month 15, i.e. three months after the estimated loss of entitlement.

Table 4.1 Impact of LPO on the probability of being on IS at different intervals relative to estimated loss of IS entitlement. DiD estimates from separate linear probability models for each sub-phase

	(1) -9	(2) -3	(3) +3	(4) +9	(5) +12	(6) +15	(7) +24
p1iS	-0.3 (0.4)	-8.0*** (0.7)	-18.1*** (1.5)	-19.6*** (1.1)	-20.1*** (1.0)	-19.2*** (1.2)	-21.1*** (1.6)
p1aS	-0.8* (0.3)	-10.4*** (0.7)	-48.0*** (0.7)	-47.1*** (0.8)	-36.6*** (2.7)	-22.9*** (2.0)	-21.3*** (1.6)
p1aF	-2.3*** (0.4)	-8.4*** (0.6)	-51.4*** (0.7)	-48.8*** (0.7)	-47.5*** (0.8)	-45.6*** (0.8)	-31.5*** (2.2)
p1bS	-1.7** (0.4)	-11.9*** (0.4)	-51.0*** (0.4)	-50.3*** (0.4)	-49.1*** (0.3)	-47.6*** (0.5)	-43.1*** (0.8)
p1bF	-1.5** (0.3)	-4.5*** (0.5)	-51.4*** (0.9)	-51.7*** (1.2)	-50.5*** (1.1)	-49.0*** (0.8)	-45.9*** (0.5)
p2aS	-0.8* (0.3)	-8.3*** (0.6)	-56.8*** (0.6)	-55.2*** (0.6)	-53.4*** (0.8)	-51.8*** (0.6)	–
p2aF	-2.4*** (0.3)	-8.3*** (0.7)	-59.9*** (0.8)	-55.9*** (0.9)	-54.2*** (1.0)	-53.3*** (0.9)	–
p2bS	-1.3*** (0.2)	-7.9*** (0.6)	-58.4*** (0.3)	-56.6*** (0.7)	-54.6*** (0.8)	-44.7*** (0.9)	–
p2bF	-0.9* (0.3)	-3.7*** (0.5)	-57.9*** (0.5)	-55.9*** (0.8)	-54.8*** (0.7)	-54.4*** (1.0)	–
p3aS	-0.8** (0.2)	-4.1*** (0.8)	-57.7*** (0.8)	-54.4*** (1.5)	–	–	–
p3aF	-2.1*** (0.4)	-5.9*** (0.5)	-59.6*** (0.6)	-55.5*** (0.4)	–	–	–
p3bS	-1.1* (0.5)	-6.3*** (0.9)	-55.7*** (0.9)	–	–	–	–
p3bF	-0.7 (0.3)	-3.3*** (0.5)	-57.6*** (0.7)	–	–	–	–
p3cF	-1.0*** (0.2)	-3.3*** (0.6)	–	–	–	–	–
All – phases 1	-1.4*** (0.2)	-9.9*** (0.4)	-46.2*** (0.5)	-45.5*** (0.5)	-42.1*** (1.1)	-37.6*** (1.0)	-28.7*** (1.3)
All – phases 2	-1.3*** (0.2)	-7.4*** (0.5)	-58.0*** (0.4)	-55.6*** (0.5)	-53.9*** (0.6)	-51.3*** (0.6)	–
All – phases 3	-1.1** (0.3)	-4.7*** (0.5)	-57.1*** (0.6)	-54.6*** (0.8)	–	–	–

Sample of lone parents not receiving Carer’s Allowance and aged<57 at time 0.

* p<0.10 ** p<0.05 *** p<0.01

Standard errors are estimated following Donald and Lang (2007), treating a ‘group’ as the interaction of ‘treatment/comparison’ and ‘cohort’.

4.1.2 Probability of receiving JSA and ESA

The estimates above clearly indicate that (in most sub-phases) LPO led to more than half of the affected lone parents leaving IS three months after losing entitlement. Table 4.2 provides estimates of the impact of LPO on the fraction receiving JSA while Table 4.3 focuses on estimates of the impact of LPO on the fraction receiving ESA/IB/SDA (which, for the sake of simplicity, we refer to as ESA in this section).

As to be expected, LPO had little impact on the fraction of potentially affected lone parents receiving JSA before the estimated loss of entitlement to IS, as indicated in the first two columns of Table 4.2. However, after that, LPO did cause substantial flows onto JSA. For example, three months after the estimated loss of IS entitlement, LPO had increased the fraction receiving JSA by between 24 per cent and 36 per cent across the various sub-phases (with the exception of the first one). The last few rows of the table show that, in Phase 2 overall, LPO increased the fraction of lone parents receiving JSA by 33 percentage points, and the figure for Phase 3 is slightly higher at 34 percentage points. The estimated impact on JSA then falls over the remainder of the observation period (and falls especially quickly for the Phase 1 lone parents, but this reflects that the children of lone parents in the pre-treated group are turning 16 at these times).

Column 2 of Table 4.3 shows that, in the earlier sub-phases, LPO seems to have increased flows from IS to ESA (which will presumably be moves to IB, as there is little reason for lone parents to move to ESA earlier than they have to) as early as three months before the estimated loss of IS entitlement, which at four percentage points for Phase 1 exceeded that towards JSA. Column 3, however, shows that, three months after the estimated loss of IS entitlement, the impact of LPO was to increase the fraction of potentially affected lone parents receiving ESA by between 10 and 14 percentage points. The share on ESA appears more stable over time (again, net of the issues affecting the estimates for the earlier phases in the later periods). For example, the bottom of Table 4.3 shows that, in Phase 2, LPO is estimated to have moved 12 per cent of lone parents onto ESA three months after the estimated loss of IS entitlement, and the impact remains stable thereafter (column 5).

The estimated impact of LPO on ESA for Phase 1 will be affected by the fact that ESA replaced IB for new claimants from October 2008. There was an incentive for lone parents in this Phase to claim IB while it was still available (those needing to claim ESA subsequently would be subject to a Work Capability Assessment to confirm eligibility). Receiving IB also means that lone parents are potentially able to continue to claim IS, making them exempt from LPO. The results confirm that there seems to have been a small, but noticeable, flow of lone parents in Phase 1 from IS onto IB in the months before the estimated loss of entitlement to IS, something which does not seem to have happened in later phases.

Table 4.2 Impact of LPO on the probability of being on JSA at different intervals relative to estimated loss of IS entitlement. DiD estimates from separate linear probability models for each sub-phase.

	(1) -9	(2) -3	(3) +3	(4) +9	(5) +12	(6) +15	(7) +24
p1iS	-0.1 (0.1)	1.7*** (0.2)	5.0** (1.5)	6.4*** (1.2)	6.2*** (1.2)	5.2** (1.5)	5.1*** (0.9)
p1aS	0.0 (0.0)	1.8*** (0.1)	24.1*** (0.2)	21.6*** (0.2)	13.4*** (0.6)	4.0** (1.0)	2.7** (0.8)
p1aF	0.2** (0.0)	1.7*** (0.1)	28.1*** (0.0)	23.8*** (0.1)	21.5*** (0.1)	19.9*** (0.1)	8.0*** (0.6)
p1bS	0.0 (0.0)	2.6*** (0.1)	27.5*** (0.1)	23.9*** (0.1)	21.9*** (0.1)	19.6*** (0.1)	14.9*** (0.2)
p1bF	0.0 (0.1)	0.2 (0.1)	31.3*** (0.1)	27.2*** (0.1)	24.5*** (0.1)	22.7*** (0.1)	16.7*** (0.1)
p2aS	0.0 (0.0)	1.1*** (0.0)	31.6*** (0.1)	25.7*** (0.1)	23.8*** (0.1)	21.9*** (0.1)	– –
p2aF	0.2*** (0.0)	2.0*** (0.0)	34.0*** (0.1)	27.6*** (0.1)	25.3*** (0.1)	23.2*** (0.1)	– –
p2bS	0.1 (0.1)	1.2*** (0.1)	32.4*** (0.1)	28.3*** (0.1)	26.0*** (0.1)	17.2*** (0.1)	– –
p2bF	0.0 (0.0)	0.0 (0.1)	34.4*** (0.1)	29.3*** (0.2)	27.2*** (0.2)	24.7*** (0.2)	– –
p3aS	0.0 (0.0)	0.0 (0.1)	34.1*** (0.2)	27.4*** (0.2)	– –	– –	– –
p3aF	0.2*** (0.0)	1.3*** (0.1)	35.6*** (0.0)	28.6*** (0.1)	– –	– –	– –
p3bS	0.1** (0.0)	0.7*** (0.0)	33.0*** (0.1)	– –	– –	– –	– –
p3bF	0.0 (0.0)	0.2* (0.1)	36.2*** (0.1)	– –	– –	– –	– –
p3cF	0.2** (0.0)	0.0 (0.0)	– –	– –	– –	– –	– –
All – phases 1	0.0 (0.0)	1.9*** (0.1)	24.2*** (0.3)	21.4*** (0.3)	18.0*** (0.4)	14.2*** (0.6)	7.3*** (0.4)
All – phases 2	0.1*** (0.0)	1.2*** (0.1)	32.8*** (0.1)	27.2*** (0.1)	25.0*** (0.1)	21.7*** (0.1)	– –
All – phases 3	0.1*** (0.0)	0.5*** (0.1)	34.3*** (0.1)	27.5*** (0.2)	– –	– –	– –

Sample of lone parents not receiving Carer's Allowance and aged<57 at time 0.

* p<0.10 ** p<0.05 *** p<0.01

Standard errors are estimated following Donald and Lang (2007), treating a 'group' as the interaction of 'treatment/comparison' and 'cohort'.

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Table 4.3 Impact of LPO on the probability of being on ESA, IB or SDA at different intervals relative to estimated loss of IS entitlement. DiD estimates from separate linear probability models for each sub-phase

	(1) -9	(2) -3	(3) +3	(4) +9	(5) +12	(6) +15	(7) +24
p1iS	1.0** (0.4)	4.3*** (0.4)	0.2 (0.5)	-1.9** (0.4)	-3.1*** (0.6)	-3.4** (0.8)	-5.1*** (1.0)
p1aS	0.5 (0.3)	5.0*** (0.3)	13.6*** (0.3)	12.6*** (0.2)	5.8*** (0.3)	1.2*** (0.2)	-1.1 (0.5)
p1aF	1.4*** (0.1)	4.2*** (0.1)	14.3*** (0.2)	13.8*** (0.2)	13.0*** (0.2)	12.7*** (0.2)	5.5*** (0.6)
p1bS	1.9*** (0.1)	4.2*** (0.2)	11.7*** (0.2)	12.4*** (0.0)	12.1*** (0.1)	11.9*** (0.2)	12.3*** (0.4)
p1bF	1.1*** (0.2)	2.0*** (0.3)	10.8*** (0.3)	11.9*** (0.5)	11.5*** (0.4)	11.3*** (0.4)	12.4*** (0.5)
p2aS	0.5** (0.1)	2.1*** (0.2)	12.9*** (0.3)	12.8*** (0.3)	12.5*** (0.2)	12.1*** (0.2)	– –
p2aF	0.4 (0.2)	1.3*** (0.3)	12.3*** (0.3)	11.7*** (0.2)	11.6*** (0.3)	11.4*** (0.2)	– –
p2bS	-0.1 (0.2)	0.8*** (0.2)	11.4*** (0.3)	11.7*** (0.4)	11.5*** (0.4)	10.1*** (0.3)	– –
p2bF	0.0 (0.2)	0.4 (0.4)	11.8*** (0.4)	12.1*** (0.4)	12.0*** (0.3)	12.4*** (0.9)	– –
p3aS	0.0 (0.1)	0.4** (0.2)	10.6*** (0.2)	10.8*** (0.4)	– –	– –	– –
p3aF	0.1* (0.0)	0.6*** (0.1)	12.1*** (0.2)	11.6*** (0.3)	– –	– –	– –
p3bS	0.0 (0.1)	0.3 (0.2)	9.8*** (0.3)	– –	– –	– –	– –
p3bF	0.0 (0.1)	0.1 (0.1)	10.2*** (0.2)	– –	– –	– –	– –
p3cF	-0.1 (0.1)	0.4 (0.3)	– –	– –	– –	– –	– –
All – phases 1	1.3*** (0.2)	4.2*** (0.2)	10.9*** (0.2)	10.7*** (0.2)	8.6*** (0.2)	7.2*** (0.2)	2.3*** (0.3)
All – phases 2	0.3 (0.2)	1.4*** (0.2)	12.2*** (0.3)	12.1*** (0.2)	12.0*** (0.2)	11.7*** (0.2)	– –
All – phases 3	0.0	0.4***	10.5***	10.9***	–	–	–

Sample of lone parents not receiving Carer's Allowance and aged<57 at time 0.

* p<0.10 ** p<0.05 *** p<0.01

Standard errors are estimated following Donald and Lang (2007), treating a 'group' as the interaction of 'treatment/comparison' and 'cohort'.

4.1.3 Probability of being on IS, JSA or ESA (any out-of-work benefit)

Table 4.4 reports the DiD estimates of the impact of LPO on the probability of a lone parent potentially affected by LPO to be receiving any of the main out-of-work benefits (IS, JSA, ESA) at different points within the observation period.

The first two columns of the table are consistent with those of Table 4.1: across sub-phases, there is no indication of an anticipation effect nine months before the estimated loss of IS entitlement, but there is evidence of a small reduction in the probability of being on any benefits three months before. But the differences with Table 4.1 become much larger, though, when the outcomes are observed from this point onwards until slightly after the loss of IS entitlement. The estimates suggest that LPO does reduce the fraction of potentially affected lone parents who are receiving an out-of-work benefit, the impact ranging some 11 to 13 percentage points across the three phases. Overall, then, although LPO is moving over half of potentially affected lone parents off IS, many of those are moving instead to JSA or ESA, as seen in Table 4.2 and Table 4.3. In the remaining columns of Table 4.4, it can be seen that, although the impact of LPO on the probability of receiving any of IS, JSA and ESA rises over time, it does so slowly, so that the largest estimates found towards the end of the observation period do not exceed 20 percentage points.

Table 4.4 Impact of LPO on the probability of being on any benefits at different intervals relative to estimated loss of IS entitlement. DiD estimates from separate linear probability models for each sub-phase.

	(1) -9	(2) -3	(3) +3	(4) +9	(5) +12	(6) +15	(7) +24
p1iS	-0.6 (0.4)	-4.9*** (0.8)	-1.6* (0.6)	-2.0* (0.8)	-3.1** (0.8)	-3.5*** (0.7)	-5.6** (1.3)
p1aS	-1.0** (0.3)	-7.3*** (0.7)	-11.8*** (0.7)	-13.4*** (0.7)	-11.6*** (2.3)	-7.9*** (1.3)	-7.8*** (1.2)
p1aF	-2.0** (0.5)	-5.1*** (0.7)	-11.6*** (0.7)	-13.4*** (0.7)	-14.7*** (0.8)	-14.4*** (0.8)	-11.7*** (2.0)
p1bS	-1.9*** (0.3)	-7.2*** (0.4)	-13.7*** (0.4)	-15.7*** (0.4)	-16.5*** (0.3)	-17.2*** (0.5)	-17.0*** (0.8)
p1bF	-1.3*** (0.2)	-2.7*** (0.5)	-10.5*** (0.9)	-13.5*** (1.1)	-15.2*** (1.1)	-15.6*** (0.9)	-16.8*** (0.5)
p2aS	-0.4 (0.4)	-5.4*** (0.5)	-12.3*** (0.6)	-16.5*** (0.5)	-16.8*** (0.7)	-17.2*** (0.5)	– –
p2aF	-1.5*** (0.3)	-4.6*** (0.6)	-13.0*** (0.7)	-15.9*** (0.7)	-16.5*** (0.8)	-17.7*** (0.8)	– –
p2bS	-0.8** (0.2)	-5.3*** (0.5)	-14.0*** (0.2)	-15.9*** (0.7)	-16.4*** (0.7)	-18.3*** (0.7)	– –

Continued

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Table 4.4 Continued

	(1) -9	(2) -3	(3) +3	(4) +9	(5) +12	(6) +15	(7) +24
p2bF	-0.6 (0.3)	-2.8*** (0.5)	-11.0*** (0.4)	-13.5*** (0.7)	-14.7*** (0.8)	-16.2*** (0.8)	– –
p3aS	-0.6** (0.2)	-3.3** (0.7)	-12.5*** (0.7)	-15.9*** (1.4)	– –	– –	– –
p3aF	-1.5** (0.3)	-3.7*** (0.4)	-11.2*** (0.5)	-14.7*** (0.6)	– –	– –	– –
p3bS	-0.7 (0.5)	-4.8*** (0.8)	-12.3*** (0.9)	– –	– –	– –	– –
p3bF	-0.5 (0.3)	-2.6*** (0.4)	-10.6*** (0.7)	– –	– –	– –	– –
p3cF	-0.7** (0.2)	-2.5** (0.6)	– –	– –	– –	– –	– –
All – phases 1	-1.5*** (0.2)	-6.3*** (0.5)	-11.1*** (0.5)	-12.8*** (0.4)	-13.1*** (0.8)	-12.6*** (0.6)	-10.6*** (1.1)
All – phases 2	-0.7** (0.2)	-4.7*** (0.4)	-12.6*** (0.4)	-15.7*** (0.4)	-16.3*** (0.5)	-17.5*** (0.5)	– –
All – phases 3	-0.8** (0.2)	-3.5*** (0.4)	-11.8*** (0.5)	-15.8*** (0.9)

Sample of lone parents not receiving Carer's Allowance and aged <57 at time 0.

* p<0.10 ** p<0.05 *** p<0.01

Standard errors are estimated following Donald and Lang (2007), treating a 'group' as the interaction of 'treatment/comparison' and 'cohort'.

4.1.4 Probability of being in work

Table 4.5 reports the DiD estimates of the impact of LPO on the probability of being in work.

Three months after the loss of entitlement to IS, LPO is estimated to have increased the share in work by around seven percentage points. Nine months after the estimated loss of IS entitlement, in most sub-phases the impact of LPO on the probability of a potentially affected lone parent being in work was between eight percentage points and 10 percentage points and remained very close to those levels at +12 months. The bottom of Table 4.5 confirms that the average effect during Phases 2 and 3 was just under 10pp, and the impact of LPO on the probability of being in work only increased slightly later in the observation period, falling just short of 12 percentage points 15 months after the loss of entitlement to IS in Phase 2.³⁵

³⁵ Whether or not a lone parent is in work is assessed using tax credit data which are only available from April 2003, and this means that only a limited number of pre-LPO cohorts could be observed for some of the sub-phases; this is reflected in the statistical imprecision of the estimates for Phase 1 found in the first rows of Table 4.5. On the other hand, the estimates for Phases 2 and 3 generally attain statistical significance.

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Overall, therefore, these results indicate that LPO did cause potentially affected lone parents to move off IS, JSA and ESA, and increased the probability that they were in work.

Table 4.5 Impact of LPO on the probability of being in work at different intervals relative to estimated loss of IS entitlement. DiD estimates from separate linear probability models for each sub-phase

	(1) -9	(2) -3	(3) +3	(4) +9	(5) +12	(6) +15	(7) +24
p1iS	1.1 (0.2)	4.6** (0.7)	3.5 (1.3)	4.9 (2.6)	5.4 (3.1)	5.7 (3.0)	9.6 (5.8)
p1aS	1.0** (0.0)	6.3* (1.7)	7.4** (1.2)	8.3*** (1.3)	7.2** (2.0)	6.1* (2.1)	7.6 (4.3)
p1aF	1.5** (0.0)	3.2** (0.5)	6.1*** (0.2)	7.4*** (0.2)	8.2*** (0.5)	8.5*** (0.6)	7.3** (2.1)
p1bS	2.3 (0.5)	5.4* (1.3)	7.9*** (0.5)	9.0*** (0.3)	10.0*** (0.4)	10.9*** (0.7)	11.0*** (0.9)
p1bF	1.1 (0.4)	1.9** (0.4)	5.3** (0.6)	7.0*** (0.9)	8.2*** (1.2)	8.6*** (1.0)	10.0*** (0.8)
p2aS	0.4** (0.1)	2.6** (0.4)	6.1*** (0.3)	10.0*** (0.7)	10.1*** (0.8)	11.0*** (0.9)	–
p2aF	0.9* (0.2)	2.8** (0.5)	7.6*** (0.4)	10.3*** (0.6)	10.9*** (0.5)	12.0*** (0.3)	–
p2bS	0.6 (0.5)	3.8 (1.7)	8.4*** (0.1)	10.5*** (0.3)	10.9*** (0.4)	11.6*** (0.6)	–
p2bF	0.5 (0.3)	2.0** (0.4)	6.7*** (0.2)	9.4*** (0.7)	10.0*** (0.6)	12.2*** (0.8)	–
p3aS	0.5 (0.6)	2.5*** (0.3)	6.9*** (0.8)	9.9*** (1.0)	–	–	–
p3aF	1.2** (0.2)	3.1*** (0.4)	7.0*** (0.3)	8.7*** (0.8)	–	–	–
p3bS	0.6 (0.4)	3.5*** (0.5)	6.8*** (0.5)	–	–	–	–
p3bF	0.5 (0.3)	2.3*** (0.5)	6.4*** (0.4)	–	–	–	–
p3cF	0.5 (0.3)	2.0** (0.6)	–	–	–	–	–
All – phases 1	1.6*** (0.1)	4.8** (0.5)	6.9*** (0.6)	7.8*** (0.4)	8.3*** (0.8)	8.9*** (1.5)	9.0** (3.1)
All – phases 2	0.4 (0.2)	2.6*** (0.3)	6.8*** (0.2)	9.7*** (0.6)	10.3*** (0.4)	11.5*** (0.4)	–
All – phases 3	0.8 (0.2)	2.9*** (0.4)	7.0*** (0.4)	9.6*** (0.7)	–	–	–

Sample of lone parents not receiving Carer's Allowance and aged < 57 at time 0.

* p<0.10 ** p<0.05 *** p<0.01

Standard errors are estimated following Donald and Lang (2007), treating a 'group' as the interaction of 'treatment/comparison' and 'cohort'.

4.1.5 Impact of LPO on either benefit or work outcomes

Figure 4.1, Figure 4.2 and Figure 4.3, plot the estimated impact of LPO on the proportion of potentially affected lone parents who are no longer receiving an out-of-work benefit, and the proportion recorded as being in work, at different points over the observation period for Phases 1, 2 and 3 respectively.

The figures confirm earlier results that the estimated impact of LPO is smaller in Phase 1 than in other phases. As mentioned in Chapter 2, this probably reflects that LPO represents a much larger policy change for the later sub-phases than it does for the early sub-phase: for example, lone parents in 'Phase 1a Stock' will lose IS entitlement between one day and two years earlier than they would have done had LPO not been introduced, and lone parents in 'sub-phase 3b Flow' will lose IS entitlement seven years earlier than they would have done had LPO not been introduced.

The figures suggest that LPO had more impact moving lone parents off IS, JSA and ESA than it did moving them into work, with the implication that LPO also led some lone parents to stop claiming IS, JSA and ESA but then not move into work, either into a 'known' or 'unknown' destination.

As discussed in Chapter 1 and Section 3.4.4, one concern about LPO is that lone parents might lose entitlement to IS, but not move to another benefit nor find work. However, because of the combination of data sources used to identify such lone parents and the potential for error in the data, it is difficult for this analysis to draw firm conclusions about the size of, or circumstances of, such a group of lone parents, for two main reasons:

- the difference could be due to measurement error in one or both of the underlying datasets (and the underlying datasets come from entirely different administrative sources); and
- the measure of 'work' comes from tax credit data, so any lone parent who did move into work, but did not claim a tax credit, would not be classified as 'in work' in this analysis.

Other strands of the evaluation of LPO, though, do investigate the size and circumstances of the group who are not receiving an out-of-work benefit and not in work and found that the circumstances of this group varied. For example, many had re-partnered, some were not claiming benefit or working (but with an alternative source of income) and some were claiming health-related benefits (Coleman and Riley, 2012; Casebourne *et al.*, 2010). Section 3.4.4 provides more detail from these strands of the evaluation.

Figure 4.1 Impact of LPO on the probability of no longer receiving any of IS, JSA and ESA, and on being in work, relative to estimated month of loss of IS entitlement, Phase 1

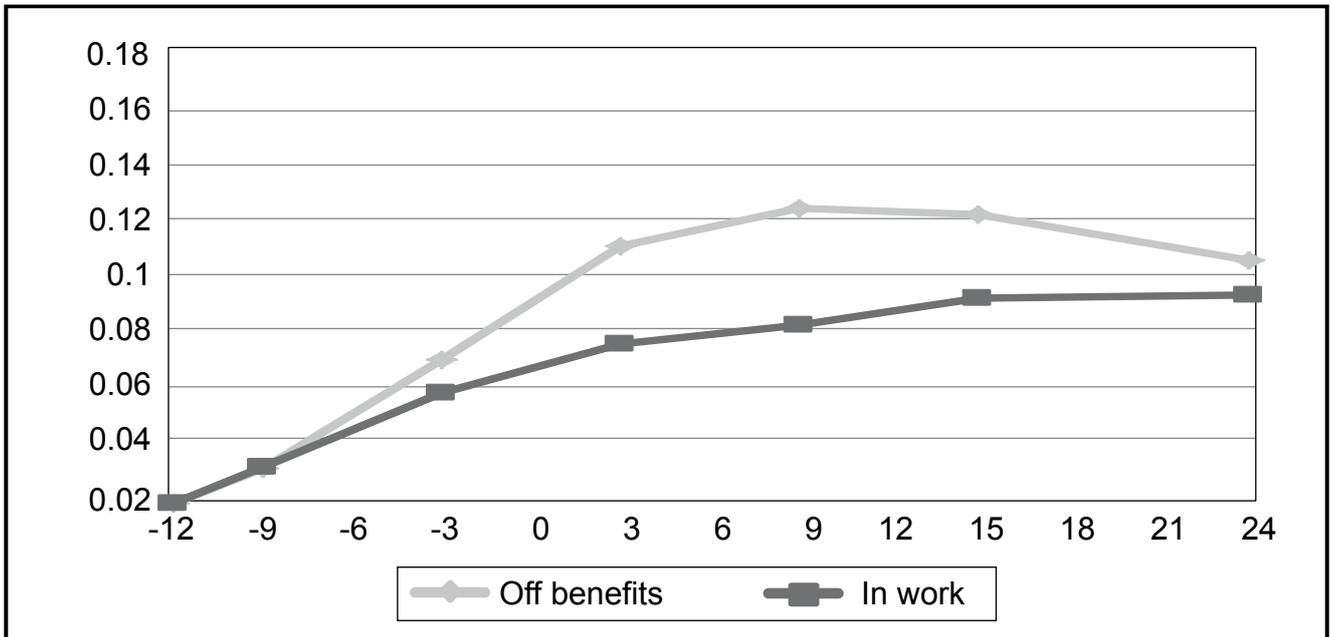


Figure 4.2 Impact of LPO on the probability of no longer receiving any of IS, JSA and ESA, and on being in work, relative to estimated month of loss of IS entitlement, Phase 2

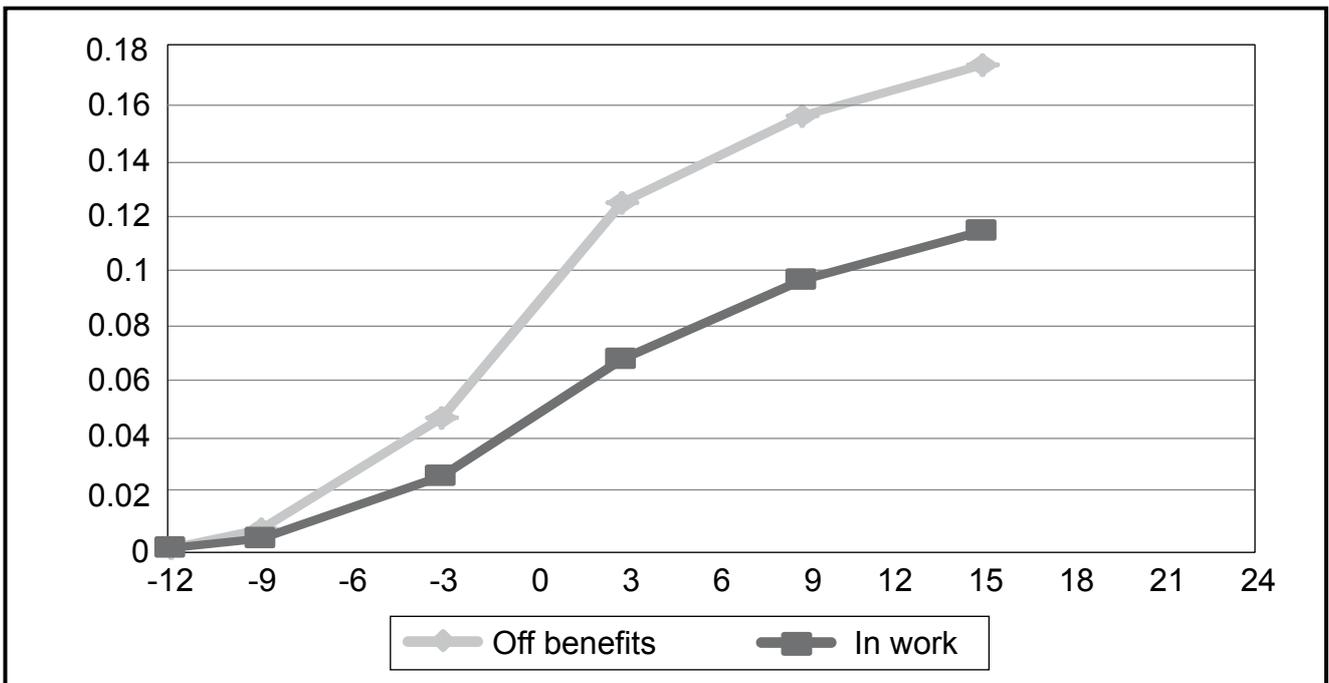


Figure 4.3 Impact of LPO on the probability of no longer receiving any of IS, JSA and ESA, and on being in work, relative to estimated month of loss of IS entitlement, Phase 3

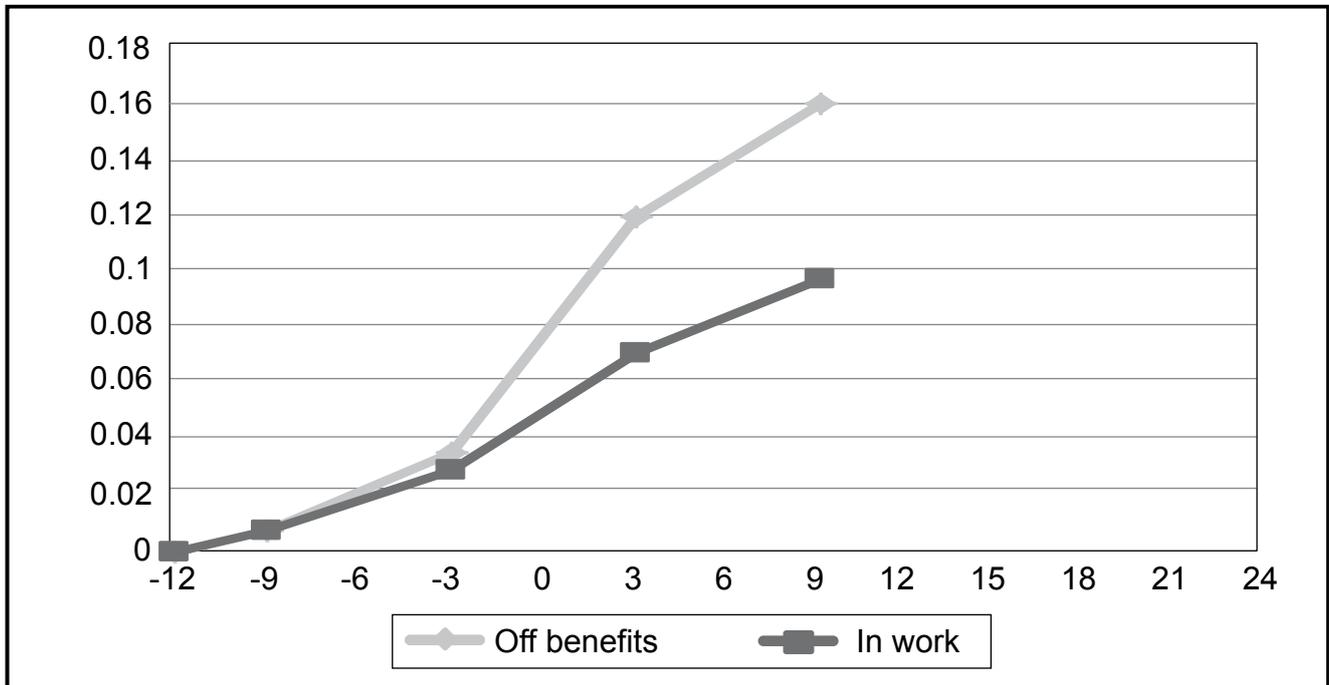


Table 4.6 shows the estimated impacts of LPO in a different way, expressing them as the number of additional lone parents who have moved into work and/or are no longer receiving benefits.³⁶ Across Phases 1 to 3, and measured three months after the loss of IS entitlement, LPO meant that, to the nearest 5,000, there were just under 50,000 fewer lone parents receiving an out-of-work benefit (230,000 fewer receiving IS, but 130,000 more receiving JSA and 45,000 more receiving ESA), and there were 30,000 more recorded as in being in work. It is possible to estimate longer-run outcomes only for Phases 1 and 2. The number of lone parents who moved off benefits as a result of LPO had increased in Phase 1 from 16,000 at three months to 18,000 at 12 months and in Phase 2 from 11,000 to 15,000. Both of these changes were mostly driven by a decrease in the number of people on JSA (down from 35,000 to 25,000 and from 29,000 to 20,000), which was accompanied by a smaller increase in the number of people in work (from 10,000 to 12,000 in Phase 1 and from 6,000 to 9,000 in Phase 2).

³⁶ These are calculated simply as the percentage impacts reported earlier in this chapter multiplied by the number of lone parents thought to be potentially eligible for LPO. Note that these figures account fully for the fact that some lone parents were exempt from LPO.

Table 4.6 Estimated impact of LPO on the number of lone parents formerly receiving IS receiving any out-of-work benefits or in work

	Phase 1	Phase 2	Phase 3	All
3 months after loss of IS entitlement				
Receiving any out-of-work benefit, of which	-16,012	-10,991	-22,837	-49,840
Receiving IS	-66,397	-50,723	-110,924	-228,044
Receiving JSA	34,780	28,685	66,632	130,096
Receiving ESA/IB/SDA	15,665	10,669	20,398	46,732
In work	9,984	5,981	13,576	29,541
12 months after loss of IS entitlement				
Receiving any out-of-work benefit, of which	-18,826	-14,255	n/a	-33,082
Receiving IS	-65,392	-48,624	n/a	-114,015
Receiving JSA	25,869	21,863	n/a	47,732
Receiving ESA/IB/SDA	12,359	10,494	n/a	22,854
In work	11,929	9,008	n/a	20,936
15 months after loss of IS entitlement (Phase 1 and 2 only)				
Receiving any out-of-work benefit, of which	-18,073	-15,313	n/a	-33,386
Receiving IS	-54,038	-44,863	n/a	-98,901
Receiving JSA	20,408	18,977	n/a	39,385
Receiving ESA/IB/SDA	10,348	10,232	n/a	20,580
In work	12,798	10,092	n/a	22,889

4.2 The impact of LPO on other outcomes

This sub-section looks at some specific areas of interest on the impact of LPO and presents supplementary results for the impact LPO had on annual earnings, on the likelihood that lone parents had another child, and on whether the overall impact of LPO varied by the age of the lone parent.

4.2.1 Earnings

Table 4.7 reports the estimates of the impact of LPO on annual earnings of those lone parents who are recorded as having earnings.³⁷ As in the previous tables, the impact of LPO is estimated at different points throughout the observation period, and the measure of earnings used at each date is that of the tax year within which the given date falls. For example, if the estimated loss of IS entitlement for a given lone parent is 25 January 2010, the earnings used as the dependent variable after nine months (25 October 2010) would be the total earnings in the 2010-11 tax year.

³⁷ Data on total annual earnings come from P14 records provided by HM Revenue and Customs.

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It is important to note that the sample consists of lone parents who report any earnings, and so the outcome variable is 'average annual earnings among those who have positive earnings'. This means that a positive (or negative) impact of LPO would suggest that those lone parents who moved into work as a result of LPO had higher (or lower) earnings, on average, than those lone parents who would have worked in the absence of LPO. On balance, theory would suggest that those lone parents entering work because of LPO would have lower than average earnings than those lone parents already in work.

Consistent with earlier findings, Table 4.7 offers little support to any effect taking place before the actual loss of entitlement to IS. However, columns 3 and 4 show that, three and nine months after the estimated loss of IS entitlement respectively, the estimated impact of LPO on the average earnings of those who have earnings is mostly negative and large in Phases 1 and 2, but positive and smaller in absolute value for Phase 3. The bottom rows report an estimated reduction in annual earnings at nine months after the estimated loss of IS entitlement of £1,000 in Phase 1 and of around £730 in Phase 2, against an increase of £300 in Phase 3. (For comparison, the average earnings of lone parents in the comparison group nine months after the estimated loss of IS entitlement are around £4,200 in Phase 1 and around £3,800 in Phase 2 and 3). The remaining columns to the right show that as one looks further into the observation period the estimates exhibit some instability (with changes in signs for some sub-phases) and statistical precision is often lost. For example, the average impact in Phase 2 becomes a positive £300 15 months after the estimated loss of IS entitlement and stays around the same at 24 months.

However, the pattern of results overall exhibits a great deal of instability across phases and over time, and this means that one should not infer too much from these results.

Table 4.7 Impact of LPO on earnings (in £) for lone parents who move into work at different intervals relative to estimated loss of IS entitlement. DiD estimates from separate linear probability models for each sub-phase

	(1) -9	(2) -3	(3) +3	(4) +9	(5) +12	(6) +15	(7) +24
p1iS	447.9 (335.0)	-534.0** (99.4)	-1077.3*** (64.4)	-1940.3*** (252.5)	-1816.1*** (205.3)	-1659.3*** (210.4)	-881.9*** (146.6)
p1aS	586.6 (98.2)	-298.7** (51.1)	-855.7** (147.0)	-1257.5** (216.6)	-976.4*** (124.7)	-991.2*** (95.2)	-218.8* (79.3)
p1aF	-10.3 (65.2)	-800.2 (315.1)	-1185.4** (142.9)	-1329.6*** (73.0)	-1276.0*** (108.5)	-1223.6*** (112.6)	-304.9** (102.8)
p1bS	-486.6 (210.3)	-87.7 (31.3)	-973.8 (478.7)	-426.0*** (49.4)	-832.9** (155.7)	-996.1* (381.2)	10.3 (181.3)
p1bF	227.0 (281.1)	-1059.5** (142.6)	-1059.5** (142.6)	-1036.1*** (83.9)	-1033.6*** (83.6)	-1036.1*** (83.9)	41.9 (45.2)
p2aS	-1.2 (144.1)	-1024.8* (273.5)	-537.5** (109.4)	-1243.8** (283.3)	-625.1** (168.6)	438.4** (127.7)	-25.4 (143.1)
p2aF	-124.3* (41.1)	-670.7** (136.8)	-1009.4*** (162.5)	-847.5*** (97.8)	-466.0*** (88.5)	340.6** (122.4)	-121.9 (143.3)

Continued

Table 4.7 Continued

	(1) -9	(2) -3	(3) +3	(4) +9	(5) +12	(6) +15	(7) +24
p2bS	-183.5 (147.5)	-316.2 (174.2)	-1109.6*** (121.8)	122.0 (178.9)	642.9*** (104.0)	273.8*** (47.6)	–
p2bF	-70.5* (20.9)	-955.3*** (47.6)	-1177.7*** (90.7)	-761.9** (218.1)	110.5 (276.3)	111.5 (276.2)	–
p3aS	-180.3 (700.6)	-534.1 (638.7)	-922.2** (227.0)	35.3 (147.4)	-256.5 (198.1)	-121.1 (150.1)	–
p3aF	-246.2** (50.0)	-694.6* (262.3)	-672.3*** (100.2)	-10.1 (85.8)	-23.0 (52.0)	11.1 (68.7)	–
p3bS	228.0 (136.1)	-813.4** (250.4)	944.4*** (61.5)	232.5 (202.6)	45.9 (237.3)	–	–
p3bF	-308.9*** (43.2)	-451.3*** (76.4)	25.4 (58.9)	113.4** (29.0)	254.5*** (34.2)	–	–
p3cF	205.8 (294.2)	118.4 (229.1)	-125.3 (93.9)	–	–	–	–
All – phases 1	200.4 (279.3)	-368.1* (109.4)	-840.0 (386.2)	-993.3*** (83.2)	-1065.1*** (43.3)	-1011.0** (304.2)	-155.4*** (26.0)
All – phases 2	-81.7 (57.3)	-730.0*** (70.4)	-828.0*** (54.2)	-732.2*** (31.4)	-309.9*** (25.6)	298.0*** (22.4)	297.1** (70.7)
All – phases 3	93.5 (34.5)	-460.8** (145.8)	-198.3*** (31.2)	296.6*** (37.7)	235.3*** (22.3)	310.3** (110.2)	–

Sample of lone parents not receiving Carer’s Allowance and aged<57 at time 0.

* p<0.10 ** p<0.05 *** p<0.01

Standard errors are estimated following Donald and Lang (2007), treating a ‘group’ as the interaction of ‘treatment/comparison’ and ‘cohort’.

4.2.2 Probability of remaining on IS and having another child

Section 3.3 showed that a proportion of lone parents remained on IS even after the initially estimated end of IS entitlement, and that some of these lone parents did go on to have younger children.

Table 4.8, therefore, reports the estimated impact of LPO on the probability of potentially affected lone parents remaining on IS and having another child. Overall, it shows little evidence that lone parents had more children because of LPO. Indeed, the results suggest LPO reducing the probability of lone parents in Phases 1 and 2 having another child, but (very slightly) increasing the probability of lone parents in Phase 3 having another child. In all cases, the estimated impacts are very small.

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Table 4.8 Impact of LPO on the probability of being of having a child at different intervals relative to estimated loss of IS entitlement. DiD estimates from separate linear probability models for each sub-phase

	(1) -9	(2) -3	(3) +3	(4) +9	(5) +12	(6) +15	(7) +24
p1iS	-0.3** (0.1)	-0.7** (0.2)	-1.3** (0.4)	-1.7** (0.5)	-2.0** (0.5)	-2.2** (0.6)	-2.7** (0.7)
p1aS	-0.2** (0.0)	-0.6** (0.1)	-1.2** (0.3)	-1.7** (0.4)	-2.1** (0.5)	-2.4*** (0.5)	-2.8** (0.7)
p1aF	-0.2*** (0.0)	-0.5** (0.2)	-1.1** (0.3)	-1.7*** (0.3)	-2.0*** (0.4)	-2.3*** (0.4)	-2.7*** (0.5)
p1bS	-0.1 (0.1)	-0.4** (0.2)	-1.0*** (0.2)	-1.7*** (0.3)	-2.0*** (0.3)	-2.4*** (0.3)	-2.7*** (0.5)
p1bF	0.0 (0.1)	-0.2 (0.2)	-0.6* (0.3)	-1.5*** (0.3)	-1.9*** (0.3)	-2.3*** (0.4)	-2.6*** (0.5)
p2aS	-0.2 (0.2)	-0.4 (0.4)	-0.8* (0.3)	-1.7** (0.4)	-2.1*** (0.4)	-2.5*** (0.4)	–
p2aF	0.0 (0.1)	-0.3 (0.2)	-0.6* (0.2)	-1.6*** (0.2)	-2.0*** (0.3)	-2.7*** (0.3)	–
p2bS	0.2 (0.2)	-0.4 (0.2)	-0.7 (0.4)	-1.7*** (0.4)	-2.0*** (0.3)	-2.1** (0.6)	–
p2bF	0.1 (0.1)	-0.2 (0.2)	-0.4 (0.2)	-1.4** (0.4)	-2.0*** (0.4)	-3.3** (0.8)	–
p3aS	0.0 (0.1)	0.3* (0.2)	0.3 (0.2)	-0.1 (0.4)	–	–	–
p3aF	-0.1 (0.1)	0.1 (0.1)	-0.2 (0.2)	-1.1* (0.4)	–	–	–
p3bS	0.0 (0.2)	0.3 (0.1)	0.2 (0.1)	–	–	–	–
p3bF	0.4** (0.1)	0.7** (0.2)	0.9** (0.3)	–	–	–	–
p3cF	0.3** (0.1)	1.4*** (0.1)	–	–	–	–	–
All – phases 1	-0.2*** (0.0)	-0.5** (0.2)	-1.1** (0.3)	-1.7*** (0.3)	-2.1*** (0.4)	-2.4*** (0.4)	-2.9*** (0.6)
All – phases 2	0.0 (0.0)	-0.4 (0.2)	-0.7* (0.3)	-1.6*** (0.3)	-2.1*** (0.3)	-2.5*** (0.4)	–
All – phases 3	0.2** (0.0)	0.5** (0.1)	0.4** (0.1)	-0.4 (0.4)	–	–	–

Sample of lone parents not receiving Carer's Allowance and aged <57 at time 0.

* p<0.10 ** p<0.05 *** p<0.01

Standard errors are estimated following Donald and Lang (2007), treating a 'group' as the interaction of 'treatment/comparison' and 'cohort'.

4.2.3 Results by age group

Table 4.9 reports estimates of the impact of LPO by lone parents' age and by phase.³⁸ The first three columns show the results for lone parents aged 18 to 24, 25 to 34, and 35 to 49 separately³⁹, while the last column refers to the entire sample.⁴⁰

The table shows that those aged 25 or over exhibit a pattern of results very similar to that for the full sample reported in column 4. For example, for Phase 1, the average reduction in the proportion of time spent on IS is 28 percentage points for the full sample and 29.4 percentage points and 27.6 percentage points for age group 25 to 34 and age group 35 to 49 respectively. On the other hand, younger lone parents (under 25) seem to have been affected by LPO less in most phases (but not in all). The differences appear to be smaller in the later phases (only three percentage points for Phase 3 at 18 months), but overall, the impact of LPO on younger lone parents seems to be smaller than for older lone parents.

Table 4.9 Impact of LPO on the proportion of time spent on IS from the start of the observation period to different intervals relative to estimated loss of IS entitlement. DiD estimates from separate linear probability models for each sub-phase

	(1) Age 18-24	(2) Age 25-34	(3) Age 35-49	(4) ALL
+24 months				
p1iS		-13.3*** (1.6)	-13.2*** (0.3)	-14.9*** (1.0)
p1aS		-26.0*** (0.9)	-26.0*** (0.7)	-26.8*** (1.0)
p1aF		-32.4*** (1.7)	-33.4*** (0.4)	-33.5*** (0.7)
p1bS		-34.1*** (0.9)	-35.0*** (0.5)	-34.8*** (0.6)
				Continued

³⁸ Results are not shown for the small number of lone parents aged under 25 who appear to be in Phase 1 (ie appear to have a youngest child aged 11 to 15 when sampled) as this combination of dates of birth of mother and child seems likely to reflect inaccuracies in the data.

³⁹ Results for lone parents aged 50+ are very similar to those for the age group 35 to 49 and are not reported here.

⁴⁰ Differently from Section 4.1, and to save the number of comparisons that need to be made, the dependent variable is the proportion of time spent on IS over the entire observation period. The exact length of the observation period varies from 18 to 36 months across sub-phases due to data censoring, and it is indicated in the bold headings that separate the different panels in the table. For example, lone parents affected in phase 1 can be observed over the entire period of 36 months (from 12 months before to 24 months after the loss of entitlement to IS), while lone parents affected in the last few sub-phases can only be followed for 18 months.

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Table 4.9 Continued

	(1) Age 18–24	(2) Age 25–34	(3) Age 35–49	(4) ALL
p1bF		-32.1*** (1.0)	-35.4*** (0.3)	-34.6*** (0.7)
All – phases 1		-29.4*** (0.8)	-27.6*** (0.3)	-28.0*** (0.8)
+18 months				
p2aS	-30.6** (9.4)	-31.8*** (0.8)	-33.3*** (0.4)	-33.5*** (0.5)
p2aF	-48.2** (16.4)	-33.6*** (0.8)	-34.3*** (0.8)	-34.8*** (0.6)
All – phases 2	-32.7*** (5.8)	-32.6*** (0.9)	-33.7*** (0.5)	-33.9*** (0.5)
+12 months				
p2bS	-25.6*** (5.1)	-30.4*** (1.0)	-32.1*** (0.3)	-31.8*** (0.6)
p2bF	-20.9** (5.5)	-28.3*** (0.8)	-29.7*** (0.3)	-29.5*** (0.4)
All – phases 2	-26.7*** (2.6)	-29.5*** (0.6)	-30.9*** (0.3)	-30.9*** (0.4)
+6 months				
p3aS	-19.3*** (3.4)	-21.3*** (1.1)	-22.3*** (0.5)	-22.0*** (0.7)
p3aF	-18.4*** (0.9)	-20.5*** (0.5)	-21.8*** (0.5)	-21.3*** (0.4)
p3bS	-19.3*** (1.4)	-20.6*** (0.7)	-22.6*** (0.8)	-21.6*** (0.5)
p3bF	-16.4*** (1.1)	-19.3*** (0.8)	-21.2*** (0.7)	-19.9*** (0.6)
All – phases 3	-18.8*** (0.7)	-20.7*** (0.7)	-22.3*** (0.5)	-21.6*** (0.5)

Sample of lone parents not receiving Carer's Allowance at time 0.

* $p < 0.10$ ** $p < 0.05$ *** $p < 0.01$

Standard errors account for clustering following Donald and Lang (2007).

Table 4.10 reports the estimates of the impact of LPO on the proportion of time spent in work over the observation period by age group. As seen for the impact on IS, the younger age group appears different from the rest of the sample: the first column shows that most (but not all) of the estimates for lone parents aged under 25 are smaller than those for the other age groups, and in the majority of cases they are consistent with LPO having had no impact at all.

Overall, these results suggest that LPO had slightly larger impacts on benefit and work outcomes for older lone parents than younger lone parents.

Table 4.10 Impact of LPO on the proportion of time spent in work from the start of the observation period to different intervals relative to estimated loss of IS entitlement. DiD estimates from separate linear probability models for each sub-phase

	(1) Age 18–24	(2) Age 25–34	(3) Age 35–49	(4) ALL
+24 months				
p1iS		4.1 (3.9)	4.9 (4.0)	5.7 (3.1)
p1aS		6.0* (2.7)	6.0 (2.9)	6.8** (2.1)
p1aF		6.5** (1.9)	5.8** (2.0)	6.4*** (1.1)
p1bS		7.6*** (1.5)	8.0** (2.1)	8.6*** (1.2)
p1bF		4.5** (1.4)	5.7** (1.4)	5.9*** (0.8)
All – phases 1		6.3** (1.9)	6.5* (2.6)	7.0** (1.7)
+18 months				
p2aS	5.3 (3.6)	5.2** (1.3)	5.8** (1.3)	6.5*** (0.8)
p2aF	0.0 (14.2)	4.5*** (0.5)	5.2*** (0.8)	5.8*** (0.3)
All – phases 2	2.0 (3.5)	5.6*** (1.0)	6.0*** (1.1)	6.7*** (0.6)
+12 months				
p2bS	4.3 (3.8)	4.7** (0.8)	4.8*** (0.4)	5.6*** (0.3)
p2bF	1.2 (4.3)	3.9** (0.5)	3.7** (0.5)	4.6*** (0.3)
All – phases 2	5.6 (4.1)	4.0** (0.6)	4.2*** (0.3)	4.9*** (0.2)
+6 months				
p3aS	2.4 (3.4)	3.2** (0.9)	3.1** (0.7)	3.3*** (0.7)
p3aF	2.2 (2.7)	3.0*** (0.3)	2.5*** (0.2)	3.1*** (0.2)
p3bS	2.6* (1.0)	3.5*** (0.5)	2.9** (0.8)	3.5*** (0.4)
p3bF	1.6* (0.6)	2.3** (0.5)	2.6** (0.5)	2.6*** (0.3)
All – phases 3	2.4*** (0.5)	3.2*** (0.6)	2.9*** (0.4)	3.3*** (0.4)

Sample of lone parents not receiving Carer's Allowance at time 0.

* p<0.10 ** p<0.05 *** p<0.01

Standard errors account for clustering following Donald and Lang (2007).

4.3 Summary

This impact assessment was designed to estimate the impact of LPO on the outcomes of lone parents who were existing claimants of IS and who were directly affected by Phases 1 and 2, and part of Phase 3, of the roll-out of LPO. These lone parents all had a youngest child aged seven years and over when they lost IS entitlement. The outcomes in question are flows between and off out-of-work benefits, and movements into work.

These estimates use the DiD design, which compares the outcomes of lone parents affected by LPO with those of lone parents with younger children, and then uses data from before LPO began to assess what differences would normally be expected between lone parents with differently-aged children receiving IS. The analysis confirms that it is reasonable to compare these two groups of lone parents to assess the impact of LPO using the DiD approach.

Three months after the loss of entitlement to IS, across the three phases, LPO is estimated to have reduced the share of affected lone parents receiving any out-of-work benefit by between 11 and 13 percentage points, and to have increased the share in work by around seven percentage points. This reduction in receipt of out-of-work benefits conceals flows between out-of-work benefits: three months after the estimated loss of IS entitlement, LPO had reduced the share of potentially affected lone parents receiving IS by between 47 and 58 percentage points, but, of those, between 24 and 33 percentage points moved to JSA and 11 and 12 percentage points to ESA. In absolute numbers, this means that, measured three months after the loss of IS entitlement, Phases 1 to 3 of LPO led there to be (to the nearest 5,000) just under 50,000 fewer lone parents receiving an out-of-work benefit (230,000 fewer receiving IS, but 130,000 more receiving JSA and 45,000 more receiving ESA), and 30,000 more recorded as being in work.

Twelve months after the loss of entitlement to IS, LPO is estimated to have reduced the share of affected lone parents receiving any out-of-work benefit by between 13 and 16 percentage points in Phase 1 and 2 respectively, and to have increased the share in work by 8 and 10 percentage points. Again, this reduction in receipt of out-of-work benefits conceals flows between out-of-work benefits: 12 months after the estimated loss of IS entitlement, LPO reduced the share of potentially affected lone parents receiving IS by between 42 and 54 percentage points in Phases 1 and 2 respectively, but, of those, 18 and 25 percentage points moved to JSA and 8 and 12 percentage points to ESA in Phases 1 and 2 respectively. Results after 12 months were not available for lone parents in Phase 3.

These estimates imply that LPO led some lone parents to leave out-of-work benefits but not to move into work. The combination of data sources used to identify such lone parents, and the potential for error in the data, means it is difficult for this analysis to draw firm conclusions about the size of or circumstances of such a group of lone parents. For instance, it is not possible to make an assessment of whether LPO affected the number of lone parents who subsequently marry or live in a couple. However, the results of the analysis, on the potential size of this group and where it was possible to say something about what happened to them once they moved off benefit, are broadly consistent with other strands of the evaluation of LPO.

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Lone parents aged under 25 appear to have been impacted by LPO less than lone parents aged 25 years and older.

There are mixed findings on whether lone parents who move into work as a result of LPO have higher or lower earnings than they would have done in the absence of LPO.

Although some lone parents due to be affected by LPO did remain on IS because they had younger children, LPO does not appear to have encouraged lone parents to have more children to remain eligible for IS and avoid LPO.

5 Conclusions

This impact assessment is part of a comprehensive evaluation of Lone Parent Obligations (LPO). The overall aim of the evaluation has been to explore whether and how lone parent employment interventions provide an effective incentive to look for paid employment, alongside an effective package of support for workless lone parents to enable them to find, enter and sustain paid work. This impact assessment aimed to quantify the impact of LPO by providing estimates of how many lone parents were moved off out-of-work benefits and into work as a result of LPO. It examined the impact of LPO on lone parents in the earlier phases of LPO, who lost entitlement to Income Support (IS) between November 2008 and the end of June 2011, at a time when their youngest child was at least seven-years-old but less than 16-years-old, and corresponding to Phases 1 and 2 and the early part of Phase 3 of the roll-out of LPO.

5.1 LPO and moving off out-of-work benefits and into work

Three months after the loss of entitlement to IS, LPO is estimated to have reduced the share of affected lone parents receiving any out-of-work benefit by between 11 and 13 percentage points (across the three phases), and to have increased the share in work by around seven percentage points. In absolute numbers, this corresponds to 50,000 fewer receiving an out-of-work benefit, and 30,000 more recorded as being in work.

This reduction in receipt of out-of-work benefits conceals flows between out-of-work benefits: three months after the estimated loss of IS entitlement, LPO had reduced the share of potentially affected lone parents receiving IS by between 47 and 58 percentage points (across the three phases), but, of those, between 24 and 33 percentage points moved to Jobseeker's Allowance (JSA) and 11 and 12 percentage points to Employment and Support Allowance (ESA).

The impact of LPO generally grows over time (but more slowly following the loss of IS entitlement than before), so that nine months after the loss of entitlement to IS, LPO is estimated to have reduced the share of affected lone parents receiving any out-of-work benefit by between 13 and 16 percentage points (across the three phases), and to have increased the share in work by eight and ten percentage points. The impact for Phases 1 and 2 are the same for both measures at the 12-month point following loss of entitlement to IS.

The majority of lone parents who subsequently move from IS to JSA or ESA do not move into work during the period they are observed. For example, 18 months after moving from IS to JSA, only a quarter of Phase 1 lone parents or a third of Phase 2 lone parents have moved into work, and 18 months after moving from IS to ESA or Incapacity Benefit (IB), only one in ten have moved into work. Of those lone parents who do move into work, most move directly from IS to work (58 per cent), suggesting that they are able to move into work before the loss of IS entitlement and so avoid moving to another benefit as a result of LPO.

5.2 What about lone parents who move off out-of-work benefits but not into work?

The estimates within this impact assessment imply that LPO led some lone parents to leave out-of-work benefits but not to move into work. One concern raised about LPO is that lone parents might lose entitlement to IS, but not move on to another out-of-work benefit or into work, leaving them in an 'unknown' destination and potentially more 'financially vulnerable'.

This analysis found that, 12 months after the estimated loss of entitlement to IS, about 15 per cent of lone parents affected by LPO seem to not be receiving any out-of-work benefits and are not in work. The combination of data sources used to identify such lone parents, and the potential for error in the data, means it is difficult for this analysis to draw firm conclusions about the size or circumstances of this group of lone parents. What we are able to determine is that of this group, about half are receiving Child Tax Credit, suggesting they still have dependent children (but do not have an entitlement to Working Tax Credit). Of the remaining half, some are receiving tax credits as part of a couple, but some do not seem to be receiving any out-of-work benefits or tax credits.

Findings from other strands of the evaluation provide further information on the circumstances of this group. The LPO survey (Coleman and Riley, 2012) found that of lone parents whose entitlement to IS ended in early 2011, nine per cent were not in work and not receiving any of IS, ESA or JSA 12 months later (although only five per cent had not been on benefit or worked at all since leaving IS). The survey found that half of these had re-partnered.

Other evaluation research into the destinations of lone parents after IS eligibility ends found that the circumstances of these lone parents varied greatly, with re-partnering, living off an alternative source of income (other than benefits or work) and claiming benefits on the grounds of disability or ill-health, being some of the destinations of these lone parents. Although this impact assessment has not been able to definitively confirm the outcomes for all lone parents, it has been able to shed light on the circumstances of some of these lone parents and, in common, with other strands of the evaluation, estimate that the proportion of lone parents in an 'unknown' destination is small.

5.3 The effect of LPO on different groups of lone parents and outcomes

The analysis looked at the impact of LPO on lone parents depending on the age of their youngest child, on the age of the lone parent, the effect on any earnings and whether lone parents were becoming pregnant to remain on IS and so avoid being affected by LPO; all areas of particular policy interest.

The analysis showed that LPO was less effective at moving lone parents with older children off out-of-work benefits and into work than it was those with younger children. This may reflect that, for some lone parents with older children who were affected at the start of LPO, the loss of IS entitlement happened only a few months or a year or two earlier than it would have occurred anyway, whereas for affected lone parents with younger children, the loss of IS could have been up to nine years earlier than would have occurred anyway. But, it may also reflect that the affected lone parents with older children tended to have been on out-

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of-work benefits for a long time and so may not move off benefit and into work to the same extent as some other lone parents. Similarly, lone parents aged under 25 appear to have been affected by LPO less than lone parents aged 25 years and older, with fewer moving off out-of-work benefits and into work. Both findings are consistent with these groups being further from the labour market, with less (recent) experience of work, and greater barriers to moving into work.

The data available for this impact assessment does not record information about the type or quality of employment, other than the hours worked and the annual earnings. There are mixed findings on whether lone parents who move into work as a result of LPO have higher or lower earnings than they would have done in the absence of LPO.

Although some lone parents due to be affected by LPO did remain on IS because they had younger children, LPO does not appear to have encouraged lone parents to have more children to remain eligible for IS and avoid LPO.

5.4 The impact of LPO compared to other DWP interventions aimed at lone parents

The headline result in this report is that LPO has meant an additional 13 to 16 percentage points of lone parents formally in receipt of IS not receiving any out-of-work benefit nine months after loss of IS entitlement.

Comparing 'off benefit' results with other interventions requires us to compare impacts at 12 months as well (comparable with other evaluations). The impacts from LPO given above are the same for Phases 1 and 2 at the 12-month period following loss of IS entitlement⁴¹. For those in Phase 3 we are likely to see, in all probability, a slightly higher impact at 12 months as well.

The impacts from LPO are, therefore, considerably higher than the estimated impacts of the Lone Parent Pilots (LPP), Work Focused Interviews (WFIs) and the New Deal for Lone Parents (NDLP). These showed that:

- The estimated impact of the LPP (Brewer *et al.* 2009) among lone parents who had been on IS for 12 months was 1.6 percentage points after 12 months, and 2.0 percentage points after 24 months.
- The estimated impact of WFIs (Cebulla *et al.* 2008), after 12 months, was 0.8 per cent for lone parents with youngest children aged over 13 and 2.0 per cent for lone parents with youngest children aged 9 to 12.
- The estimated impact of NDLP (Cebulla *et al.* 2008) among all lone parents (not just those who participated) on IS was 1.7 percentage points after nine months and 1.4 percentage points after 24 months.

⁴¹ With a reduction in Phase 1 from -12.8 at nine months to -13.1 at 12 months and a reduction in Phase 2 from -15.7 at nine months to -16.3 at 12 months.

It should be noted that the estimated impacts of these programmes are all for slightly different populations and the programmes were in place at different points in time over the past 13 years⁴².

In addition, of these interventions, two are mandatory (WFIs and LPO) and two were voluntary programmes (NDLP and In Work Credit (IWC)).

Of the mandatory interventions, LPO is clearly much more effective at moving lone parents off out-of-work benefits and into work than are WFIs. This is fully in line with the considerable difference in intensity (and conditionality associated with different benefits) underpinning the two interventions.

Comparisons with the voluntary programmes of NDLP and IWC are more subtle. It is estimated that, among those lone parents who participated in NDLP, NDLP increased the proportion who left IS within nine months of participation by 22 to 26 percentage points (Cebulla *et al.* 2008). However, because less than ten per cent of lone parents on IS participated in NDLP, the overall impact on all lone parents on IS was estimated to be below two percentage points. So LPO is more effective at moving lone parents off out-of-work benefits and into work than IWC and NDLP partly because of its mandatory nature.

On the other hand, it must be noted that the large impact of NDLP among participants was associated with the flexibility and customised nature of the programme, and that more 'disadvantaged' lone parents appeared to benefit more from NDLP. By contrast, this impact assessment has found that most of those lone parents affected by LPO who found work moved into work directly from IS, before they had to move to another benefit. The circumstances of these lone parents may mean that they have the skills, experience, motivation or opportunities to move into work relatively easily. Those lone parents who go on to claim JSA or ESA may need more support to help with a move into work. This is something that has been raised in other strands of the evaluation, which have found that lone parents moving to JSA and ESA did not always feel that they were getting enough support to help move closer to, and into work, comparing their experiences less favourably with when they were on IS.

⁴² The LPP estimates are for all lone parents whose IS claim reached 12 months in the pilot districts, the NDLP estimate is for all lone parents on IS in Great Britain, and the WFI estimates are for the stock of lone parents on IS with children of various ages) and the programmes were in place at different points in time over the past 13 years. Cebulla *et al.* (2008) sought to compare the findings of a number of evaluations and impact assessments of government policies designed to encourage lone parents to work: see especially their Table 1 on pages 10–11. Brewer *et al.* (2009), which estimated the impact of the LPP (a package of reforms including IWC piloted in the mid-2000s) on lone parents receiving IS. Cebulla *et al.* discussed extensively the difficulties involved in making direct comparisons, given the different approaches taken by the original evaluations. One very important difference is that the most-cited result for NDLP refers to its impact on NDLP participants, but the headline results for the evaluations of WFIs, and of the LPPs presented in this report, are for their impacts among lone parents who were potentially eligible for a WFI or for IWC, not all of whom actually had a WFI or received IWC.

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In conclusion, though, this impact assessment suggests that compared to previous policy interventions, LPO is an effective way of moving lone parents from out-of-work benefits and into work. In addition, the assessment does not account for new or repeat claimants (through preventing lone parents making a new claim for IS), so it is likely to underestimate the impact of LPO because of this.

Having said this though, there are wider limitations to the analysis, given its focus on off-benefit and in work outcomes. For instance, the analysis has not examined the costs of the intervention, the effect more generally of the policy on the lone parents affected (although this is considered in other strands of the evaluation) or any substitution or displacement effects through the employment impacts achieved by LPO (which was beyond the scope of this analysis). All of these issues may affect any overall assessment of LPO. And, lastly, the impact assessment has not been able to look at longer term impacts on these lone parents (particularly those in the later roll-out phases, with younger children) and nor has it considered the impacts on lone parents with a youngest child aged five and six, who have since been brought into the LPO regime. It could be worth exploring these impacts in the future.

Appendix A

Detail of Phases 1 to 3 of LPO (existing customers only)

Table A.1 LPO phases and loss of IS entitlement

Phase	DOB of youngest child	IS end date determined by	Memo: age of youngest child when lose IS entitlement
Phase 1 stock	25/11/1992 to 01/03/1993	Child's 16th birthday, from 25/11/2008 to 01/03/2009	Age 16 exactly
Phase 1i stock	02/03/1993 to 24/11/1993	On first of child's 16th birthday or date of WFI between 02/03/2009 and 28/08/2009	Age 15–16
Phase 1a stock	25/11/1993 to 01/03/1995	On date of WFI between 02/03/2009 to 28/08/2009	Aged 14–16
Phase 1a flow	02/03/1995 to 24/11/1995	Child's 14th birthday, from 02/03/2009 to 24/11/2009	Age 14 exactly
Phase 1b stock	25/11/1995 to 05/07/1997	On date of WFI between 06/07/2009 to 06/01/2010	Aged 12–14
Phase 1b flow	6/07/1997 to 24/11/1997	On child's 12th birthday, from 06/07/2009 to 24/11/2009	Age 12 exactly
Phase 2a stock	25/11/1997 to 31/01/1999	On date of WFI between 01/02/2010 to 01/05/2010	Age 11–12
Phase 2a flow	01/02/1999 to 26/10/1999	Child's 11th birthday, from 01/02/2010 to 26/10/2010	Age 11 exactly
Phase 2b stock	27/10/1999 to 06/06/2000	On date of WFI between 07/06/2010 to 07/09/2010	Age 10
Phase 2b flow	07/06/2000 to 26/10/2000	Child's 10th birthday between 07/06/2010 and 26/10/2010	Age 10 exactly
Phase 3a stock	27/10/2000 to 24/10/2001	On date of WFI between 25/10/2010 to 25/01/2011	Age 9–10
Phase 3a flow	25/10/2001 to 25/10/2002	Child's 9th birthday, from 25/10/2010 to 25/10/2011	Age 9 exactly
Phase 3b stock	26/10/2002 to 02/01/2004	On date of WFI between 03/01/2011 to 03/04/2011	Age 7–8
Phase 3b flow	03/01/2004 to 25/10/2004	Child's 7th birthday, from 03/01/2011 to 25/10/2011	Age 7 exactly

Appendix B

More details on data processing

B.1 Resolving inconsistencies between start and end dates of claims and spells in the IS history file

The Income Support (IS) history file contains information on IS claims, and the spells within them. Each row in the dataset records information relating to a specific 'spell', where a spell within a claim should correspond to a period of time within which the claimant's circumstances were unchanged (and so a new spell should accompany a change in the claimant's circumstances). However, this does not appear the case in the version of the dataset used for this analysis: this might be due to errors or to the fact that the change in circumstances recorded in variables not included in the dataset used for this report.

In addition, the dataset presented a number of inconsistencies, both between and within claims. These included overlapping spells within a claim (often implying the contemporaneous existence of conflicting circumstances such as the presence and the absence of a partner) or uncovered gaps between spells within a given claim.

In order to be able to conduct the analysis of this report, it was necessary to resolve such inconsistencies. This was done following systematic rules which are summarised in the remainder of this appendix. These rules were informed by the two basic principles:

- a The start-of-claim dates were assumed reliable. So only end-of-claim dates were adjusted to solve inconsistencies.
- b Within a claim, any pair of spells with consecutive dates (i.e. when the end date of spell n is one day earlier than the start date of spell $n+1$) were considered more reliable than other possibly conflicting spells.

These are the steps taken in cleaning the IS history file:

- 1 Spells that appear identical duplicates were dropped from the dataset.
- 2 End-of-claim date:
 - a Sort the spells within a claim by start date and end date.
 - b Consider the 'Maximum Claim Date' associated with the last spell(s).
 - c Set the maximum value as the End of Claim date.
 - d If there is no 'Maximum Claim Date', set the claim as ongoing.
 - e Adjust the end-of-claim date to avoid overlapping with the following claim.
- 3 The end of each spell is constrained to be less or equal to the end of claim.
- 4 The start date of all first spells is constrained to be equal to the start of claim

- 5 When there are conflicting 'last spells' (multiple spells with the same start date which appear at the end of the claim):
 - a Select the one for which end of spell is the same as end of claim.
 - b If there are none, take the one with minimum difference between end of spell and end of claim.
 - c If either of the two previous steps gives multiple candidates, the candidate last in order is kept as the 'last spell of the claim'.
- 6 Identify all the spells within a claim that appear consecutive (they are only one day apart) even if they do not appear adjacent in the dataset when the dataset is sorted by start of claim, start of spell and end of spell.
- 7 Within each claim, start from the first spell with at least one consecutive spell and apply the following rules:
 - a If the spell only has one successive consecutive spell, this latter is selected.
 - b If the spell has multiple consecutive spells, select the one which has a consecutive spell itself. If more than one has consecutive spells, select the first one. If none has a consecutive spell, select the first one as well.
 - c Now all spells which are in between two selected consecutive spells are dropped.
- 8 In case of gaps between spells, extend the end date of the earlier spell.
- 9 In case of overlaps between spells, take back the end date of the earlier spell.
- 10 The few spells which end up with negative duration are dropped.

B.2 Measuring the date of birth of youngest child

A very important step of the analysis of this report is to select the lone parents affected by Lone Parent Obligations (LPO) in different sub-phases. Whether and when a lone parent is affected by LPO depends on the date of birth of their youngest child. The IS history file does provide information on the date of birth of youngest children, but this variable is not free from issues. There are often changes in the date of birth of youngest children which appear implausible (both in the pattern and in the number of changes) and which are very likely to be the result of reporting or recording errors. Given the difficulty of establishing which reported date of birth is to be taken as the correct one, the following simple rules were followed:

- 1 The relatively few claims which were associated with more than three changes in date of birth were dropped. In the vast majority of cases these were self-evidently mistakes (for example, when four different dates of birth were recorded with the same day and month but varying years).
- 2 The two most recent dates of birth were selected (note: not necessarily the two most recently reported ones).

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- 3 If the earlier of the two dates of birth selected implied that the lone parent should be included in a given group, that was selected as the relevant date of birth. In addition, if the later date of birth fell within the observation period for the analysis established on the basis of the earlier date of birth, then the child born on the most recent date of birth was regarded as 'an outcome' and used in the relevant analysis of the paper.
- 4 If a lone parent was not eligible for inclusion in a given group based on the earlier date of birth, it was checked whether she would be eligible based on the more recent date of birth.

B.3 Using the tax credit data set to measure whether working 16 or more hours

The tax credit data supplied to the research team contained information of spells of entitlement to Working Tax Credit, spells of entitlement to Child Tax Credit and information of hours worked per week. Within the spells of entitlement to Working Tax Credit and Child Tax Credit, there were sub-spells corresponding to entitlement to the different elements of Working Tax Credit and Child Tax Credit. In general, inconsistencies could be found within and between all these pieces of information. For example:

- within a spell of entitlement to Working Tax Credit, it is possible to find people entitled to no elements of Working Tax Credit (which should not happen) as well as people entitled to both the 'lone parent' and the 'second adult' element (which is not possible);
- spells of entitlement to Child Tax Credit did not always match spells of entitlement to Working Tax Credit; and
- information on hours worked was not always consistent with spells of entitlement to Working Tax Credit.

In this report, the measure of work was taken from the spells of hours worked reported by lone parents, and not from the spells of entitlement to Working Tax Credit. (One disadvantage of using spells of entitlement to Working Tax Credit to infer whether a person is in work is that entitlement to Working Tax Credit could derive from the working hours of a partner).

B.4 Using tax credit administrative data in impact assessments

The usual measure of being in work adopted by researchers examining the impact of welfare-to-work programmes in the UK is based on information about the start and end dates of periods of employment reported by employers to Her Majesty's Revenue and Customs (HMRC) (known as P45/P46 data). But this P45/P46 data can be inaccurate, with incorrect or uncertain start and end dates of jobs, and it is an incomplete record of low-paying jobs, because employers are not required to report to HMRC instances where they hire employees who earn too little to be liable for income tax. This second limitation is of particular concern for the evaluation of LPO: based on a survey of lone parents who lost entitlement to IS in early 2011, Coleman and Riley (2012) reported that 40 per cent of those lone parents who

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were in work 12 months later earned under £100 a week; at the time, the lower earnings limit was £102 a week, and so these lone parents need not have had their spell of employment reported to HMRC by their employers.

Given this concern that many lone parents affected by LPO who move into work might not be recorded as being in work by the P45/P46 data, this impact assessment, therefore, counted a lone parent as being in work if they had claimed tax credits and reported that they worked for 16 or more hours a week. This will be a more accurate measure of whether a lone parent is in work than a measure based on P45/P46 records if lone parents are more accurate at reporting the start and end dates of employment spells (and their usual weekly hours of work) to HMRC, as part of their Working Tax Credit claim, than are their employers in reporting P45/P46 information. But it will be an incomplete measure if lone parents affected by LPO did not claim tax credits when in work, either through non-take-up among those who were eligible, or because they earned too much (either in their own right or as part of a couple, or if they no longer had dependent children). It is, therefore, recommended that, where possible, future research examine the consistency between the measures of work in the tax credit data, and the P45/P46 data.

Appendix C

Additional details about the difference-in-differences regressions, and characteristics of treatment and comparison groups

This Appendix gives more details about the data used for the difference-in-differences (DiD) analysis in Chapter 4.

Section 2.1 described the principle behind the construction of the sample of lone parents used for the regressions. The data at hand do not account fully for the possible exemptions from Lone Parent Obligations (LPO), but all the DiD estimates are conducted excluding those lone parents who received both Income Support (IS) and Carer's Allowance at the start of the observation period. The sample is restricted to lone parents under the age of 57 at the start of the observation period.

The DiD results are all obtained from linear regressions (propensity score matching on datasets of this size would have been prohibitively time-consuming). These regressions include separate dummies for the different cohorts to capture any variation in outcomes over time before the introduction of LPO (where this variation is assumed to be common between the treated and the comparison groups). In addition, a number of observable characteristics are controlled for in the regression to purge the estimates of the LPO impact of any bias due to differences in the composition of the treated and comparison group; all regressions include controls for: gender, number of children, age, ethnicity, disability, incapacity, travel-to-work areas, Jobcentre Plus areas and their interaction with cohort dummies, work and benefits histories at the start of the observation period⁴³, and the rank of the ward-level deprivation index (measured separately for England and Wales, and not included in Scotland). The tables at the end of this appendix report summary statistics for the groups used in the DiD analysis. The treated and the comparison groups are similar in many respects, except for the fact that the former tends to be older (as expected), exhibits a higher incidence of disability, and, on average, spent more time on IS in the six months prior to the start of the observation period. The pre-treated and pre-comparison groups also appear very

⁴³ These are a series of variables indicating the proportion of the six 6-month periods preceding the start of observation that a lone parent has spent on a given benefit or in a given state (Carer's Allowance, IS, Jobseeker's Allowance (JSA), Employment and Support Allowance (ESA), in work). In addition, two additional dummies for each of these 36 variables (for each benefit/state) are included to identify the observations for which the proportion of time spent on a benefit in a given period is zero or one.

similar to their respective post-treatment counterparts.⁴⁴ While the broad similarity of the two groups is reassuring for the validity of the DiD approach, these findings also point to the importance of accounting for observable differences between the groups.

Standard errors and inference are based on the technique suggested in Donald and Lang (2007), where a group is defined by interacting 'cohort' with 'treatment/comparison'. This means that there are 12 groups in most regressions. Inference is then carried out using the t-distribution with four degrees of freedom. This approach should ensure that the size of the tests is approximately five per cent if there is no serial correlation (over the cohorts) in the outcomes: the visual analysis in Section 4.1 supports this lack of serial correlation, with many graphs showing stable differences in pre-treatment outcomes which then change markedly after LPO.

Estimates for the impact of LPO are reported at six-month intervals, beginning nine months before the date on which the estimated loss of entitlement to IS (except the final outcome is measured 24 months after the estimated loss of entitlement to IS). Section 4.2 also reports estimates of how LPO affected the proportion of time which lone parents spend on IS or in work. All estimates are available for each sub-phase, and for each phase. This potentially causes a very large 'multiple hypothesis' problem; this refers to the fact that the more statistical tests are carried out, the more likely it is that some tests will be rejected (in the case of this report, rejecting a test is equivalent to determining that coefficients are statistically significantly different from zero). The reported p-values do not correct for multiple hypothesis testing. However, it is strongly reassuring that the estimated impacts are reasonably consistent between sub-phases (which each represent independent samples), and the time pattern of impacts are reasonably consistent between work and benefit outcomes (which are based on entirely separate data sources).

⁴⁴ One noticeable exception is the proportion of time spent in work in the six months prior to the start of the observation period. However, this difference is likely to be driven by the large number of observations with such variable coded as zero in the older cohorts of the pre-treatment groups, which occurs because our measure of work does not capture time spent working before April 2003. However, the fact that we have a flexible control for year in our regressions means that our overall conclusions will be unaffected by this.

Appendix D

Lone parents in each of the 3 phases

Table D.1 Number of lone parents on IS potentially affected by LPO, by sub-phase.

Phase or sub-phase	Number of lone parents in sample, excluding those receiving Carer's Allowance
Phase 1	152,847
Phase 2	101,515
Phases 3	194,844
By sub-phase:	
p1S	7,354
p1aF	21,370
p1aS	37,863
p1bF	13,310
p1bS	52,648
p1iS	20,302
p2aF	24,850
p2aS	40,827
p2bF	14,172
p2bS	21,666
p3aF	36,578
p3aS	36,931
p3bF	39,935
p3bS	53,059
p3cF	28,341

Source: authors' calculations based on IS history as described in the text.

Table D.2 Summary statistics by group for Phase 1

	Treated		Comparison		Pre-Treated		Pre-Comparison		ALL	
	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd
Female	0.892	0.311	0.968	0.175	0.867	0.339	0.966	0.181	0.899	0.302
age_y	41.999	6.390	29.333	6.903	41.820	7.112	29.409	6.673	38.233	8.936
White	0.755	0.430	0.740	0.439	0.670	0.470	0.701	0.458	0.690	0.463
Number of children	1.577	0.740	1.925	1.108	1.509	0.696	1.962	1.109	1.646	0.864
Disability	0.402	0.490	0.171	0.376	0.365	0.481	0.203	0.402	0.320	0.467
Proportion of last 6 months before observation on:										
IS	0.751	0.418	0.624	0.453	0.720	0.437	0.612	0.462	0.692	0.445
Work	0.122	0.317	0.153	0.343	0.001	0.019	0.000	0.011	0.020	0.136
JSA	0.010	0.086	0.009	0.077	0.010	0.091	0.008	0.077	0.010	0.087
ESA	0.127	0.327	0.091	0.274	0.104	0.300	0.069	0.243	0.097	0.289
Carer's Allowance	0.098	0.295	0.028	0.161	0.060	0.234	0.021	0.141	0.053	0.221
Deprivation – England	0.754	0.237	0.761	0.234	0.759	0.236	0.765	0.232	0.760	0.235
Deprivation – Wales	0.302	0.253	0.286	0.249	0.311	0.258	0.292	0.249	0.305	0.255

Notes and sources: treatment and comparison groups as defined in text. 'Pre-treatment' refers to lone parents with children of the same age as those in the treatment group, but observed in a period before LPO began; 'pre-comparison' is defined equivalently.

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Table D.3 Summary statistics by group for Phase 2

	Treated		Comparison		Pre-Treated		Pre-Comparison		All	
	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd
Female	0.920	0.271	0.969	0.173	0.903	0.295	0.966	0.181	0.925	0.263
age_y	39.069	6.664	29.212	6.837	38.568	6.604	29.440	6.743	35.682	7.934
White	0.748	0.434	0.743	0.437	0.726	0.446	0.709	0.454	0.725	0.447
Number of children	1.833	0.910	1.923	1.109	1.808	0.884	1.964	1.115	1.858	0.968
Disability	0.322	0.467	0.163	0.369	0.333	0.471	0.199	0.400	0.287	0.452
Proportion of last 6 months before observation on:										
IS	0.727	0.431	0.613	0.457	0.729	0.430	0.637	0.453	0.698	0.440
Work	0.146	0.341	0.178	0.365	0.007	0.072	0.005	0.057	0.029	0.159
JSA	0.008	0.079	0.009	0.079	0.009	0.085	0.010	0.084	0.009	0.084
ESA	0.099	0.293	0.086	0.266	0.087	0.277	0.080	0.259	0.086	0.273
Carer's Allowance	0.091	0.284	0.028	0.162	0.064	0.242	0.023	0.148	0.054	0.223
Deprivation – England	0.747	0.241	0.756	0.237	0.755	0.237	0.765	0.232	0.757	0.236
Deprivation – Wales	0.309	0.255	0.301	0.254	0.310	0.255	0.290	0.248	0.304	0.253

Notes and sources: treatment and comparison groups as defined in text. 'Pre-treatment' refers to lone parents with children of the same age as those in the treatment group, but observed in a period before LPO began; 'pre-comparison' is defined equivalently.

Table D.4 Summary statistics by group for Phase 3

	Treated		Comparison		Pre-Treated		Pre-Comparison		All	
	mean	sd	mean	sd	mean	sd	mean	sd	mean	sd
Female	0.943	0.232	0.970	0.171	0.931	0.253	0.967	0.178	0.945	0.228
age – y	35.472	7.119	29.310	6.867	35.441	6.778	29.432	6.820	33.333	7.411
White	0.727	0.445	0.742	0.437	0.738	0.440	0.718	0.450	0.731	0.443
Number of children	1.956	1.024	1.929	1.102	1.949	1.008	1.955	1.114	1.950	1.047
Disability	0.231	0.421	0.149	0.356	0.280	0.449	0.195	0.396	0.243	0.429
Proportion of last 6 months before observation on:										
IS	0.699	0.443	0.584	0.469	0.738	0.423	0.653	0.446	0.700	0.437
Work	0.169	0.363	0.191	0.383	0.026	0.151	0.028	0.156	0.051	0.211
JSA	0.008	0.074	0.008	0.071	0.009	0.084	0.011	0.087	0.009	0.083
ESA	0.079	0.264	0.085	0.263	0.079	0.264	0.089	0.270	0.082	0.266
Carer's Allowance	0.072	0.254	0.031	0.169	0.057	0.229	0.025	0.153	0.048	0.210
Deprivation – England	0.745	0.243	0.748	0.241	0.756	0.236	0.766	0.231	0.758	0.235
Deprivation – Wales	0.300	0.249	0.294	0.251	0.303	0.254	0.288	0.247	0.298	0.251

Notes and sources: treatment and comparison groups as defined in text. 'Pre-treatment' refers to lone parents with children of the same age as those in the treatment group, but observed in a period before LPO began; 'pre-comparison' is defined equivalently.

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Table D.5 Summary statistics for the treated group in Phase 1

After 36 months:	Left IS		Stayed on IS		All	
	mean	sd	mean	sd	mean	sd
Female	0.892	0.310	0.938	0.241	0.897	0.303
age – y	41.553	6.040	41.510	6.587	41.548	6.106
White	0.735	0.441	0.780	0.414	0.740	0.439
Number of children	1.589	0.735	1.566	0.742	1.586	0.736
Disability	0.315	0.465	0.498	0.500	0.336	0.473
Proportion of last 6 months before observation on:						
IS	0.707	0.441	0.847	0.345	0.724	0.434
Work	0.137	0.332	0.092	0.278	0.131	0.326
JSA	0.010	0.088	0.006	0.070	0.010	0.086
ESA	0.025	0.149	0.037	0.181	0.027	0.153
Carer Allowance	0.018	0.129	0.032	0.173	0.019	0.134
Deprivation – England	0.748	0.240	0.770	0.226	0.751	0.238
Deprivation – Wales	0.314	0.258	0.286	0.247	0.310	0.257
Had another child	0.005	0.070	0.089	0.285	0.015	0.120
Count	89448		11716		101164	

Table D.6 Summary statistics for the treated group in Phase 2

After 27 months:	Left IS		Stayed on IS		All	
	mean	sd	mean	sd	mean	sd
Female	0.919	0.273	0.957	0.203	0.922	0.267
age – y	39.017	6.356	37.687	6.867	38.891	6.418
White	0.732	0.443	0.764	0.424	0.735	0.441
Number of children	1.823	0.893	1.818	0.909	1.822	0.894
Disability	0.273	0.446	0.246	0.431	0.271	0.444
Proportion of last 6 months before observation on:						
IS	0.679	0.453	0.794	0.388	0.690	0.448
Work	0.160	0.354	0.137	0.333	0.157	0.352
JSA	0.009	0.080	0.008	0.080	0.008	0.080
ESA	0.025	0.148	0.029	0.160	0.025	0.149
Carer Allowance	0.015	0.118	0.031	0.169	0.017	0.124
Deprivation – England	0.741	0.244	0.770	0.224	0.744	0.242
Deprivation – Wales	0.313	0.257	0.294	0.252	0.311	0.256
Had another child	0.009	0.092	0.224	0.417	0.029	0.168
Count	50415		5269		55684	

Table D.7 Summary statistics for the treated group in Phase 3

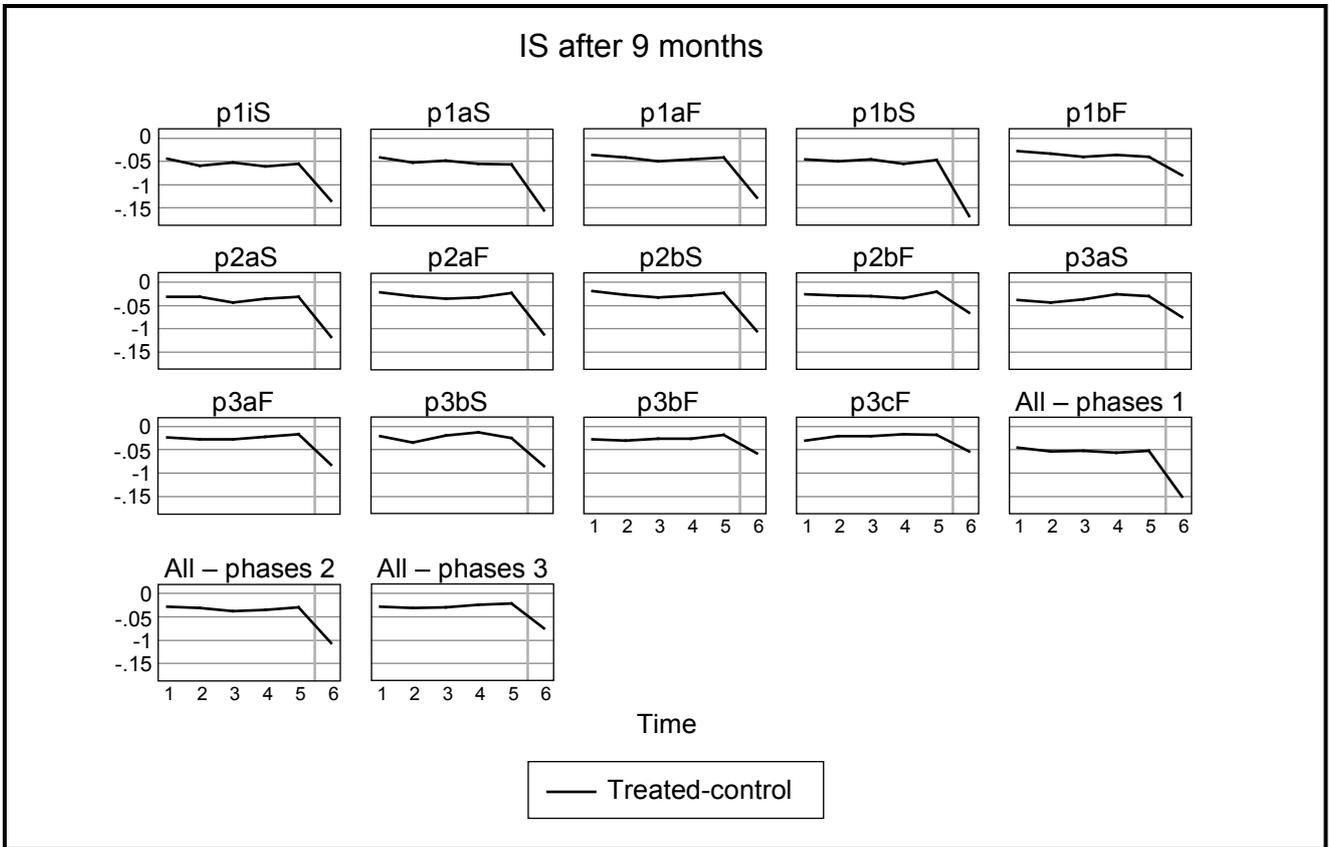
After 18 months:	Left IS		Stayed on IS		All	
	mean	sd	mean	sd	mean	sd
Female	0.940	0.237	0.975	0.155	0.945	0.228
age – y	35.624	6.865	33.451	6.914	35.351	6.909
White	0.721	0.448	0.738	0.440	0.723	0.447
Number of children	1.939	1.000	1.898	1.018	1.934	1.002
Disability	0.206	0.405	0.165	0.372	0.201	0.401
Proportion of last 6 months before observation on:						
IS	0.667	0.456	0.775	0.400	0.680	0.450
Work	0.177	0.370	0.158	0.353	0.175	0.368
JSA	0.009	0.079	0.006	0.064	0.008	0.077
ESA	0.024	0.143	0.025	0.146	0.024	0.144
Carer Allowance	0.013	0.109	0.021	0.140	0.014	0.113
Deprivation – England	0.740	0.246	0.766	0.231	0.744	0.244
Deprivation – Wales	0.307	0.255	0.280	0.238	0.303	0.253
Had another child	0.011	0.105	0.367	0.482	0.056	0.230
Count	92851		13332		106183	

Appendix E

Assessing the plausibility of the common trends assumption and assessing the estimated difference-in-differences impact graphically

The following graphs show the differences in various outcomes (Income Support (IS), other benefits, and work) between the treatment and comparison groups, and how those differences change by cohort (ie over time). Each figure consists of one graph for each sub-phase, and three summary graphs for each phase. Each graph plots the difference in a given outcome between lone parents with older children (ie who are in the pre-treated or treated groups) and lone parents with younger children (ie who are in the pre-comparison and comparison groups), and where these differences have been calculated separately for each of the (up to) six cohorts. The plotted differences in proportions are already purged of differences driven by observable differences in our samples; they are conditional on the same variables included in the main difference-in-differences (DiD) analysis. A vertical line separates the last cohort, which is the only one observed after the implementation of Lone Parent Obligations (LPO). Note that the scales on the vertical axis changes across figures due to the differences in the size of the effects found at different points of the observation period.

Figure E.1 Difference in the proportion of lone parents with older (treated) and younger (comparison) children on IS after nine months from the start of the observation period, for sub-phase and cohort



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Figure E.2 Difference in the proportion of lone parents with older (treated) and younger (comparison) children on IS after 15 months from the start of the observation period, for sub-phase and cohort

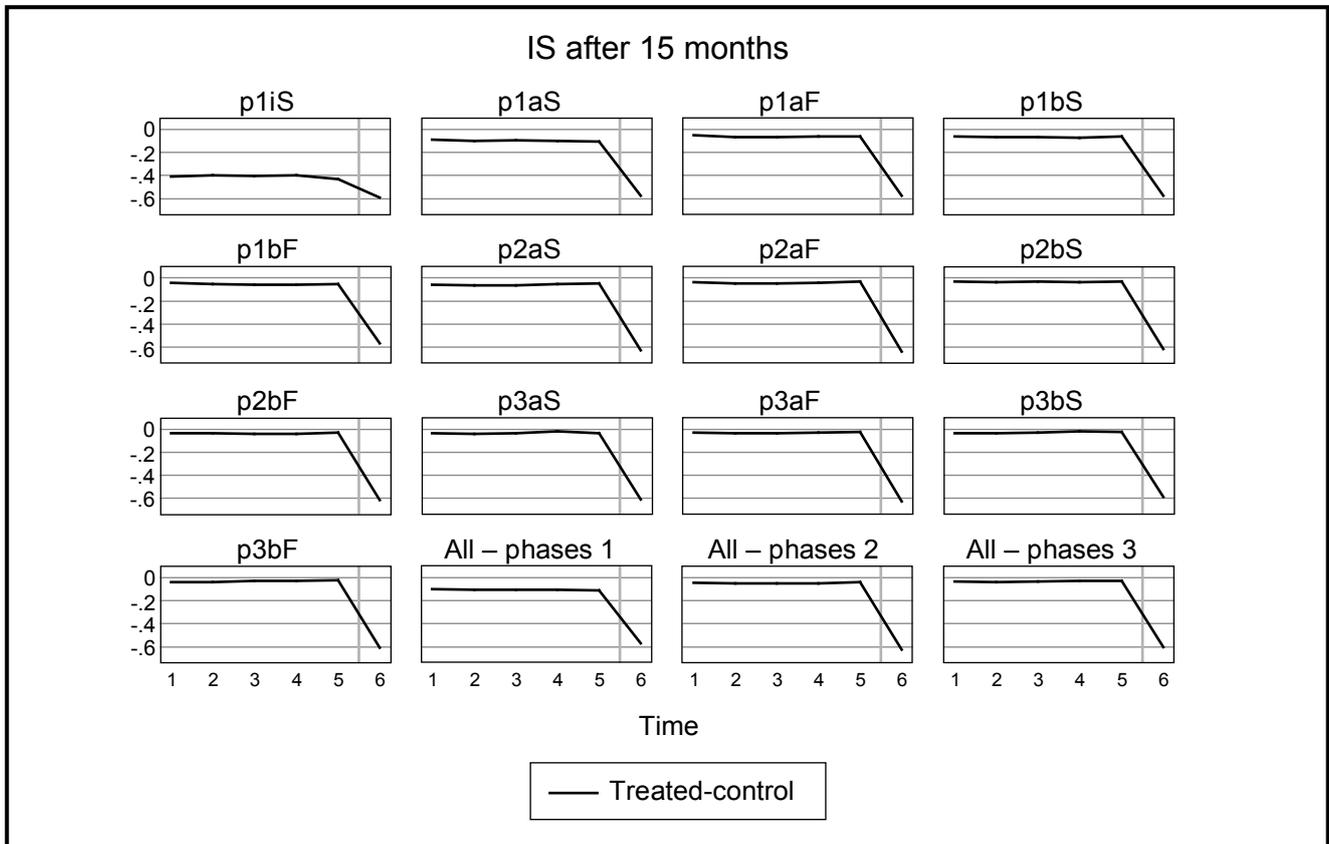
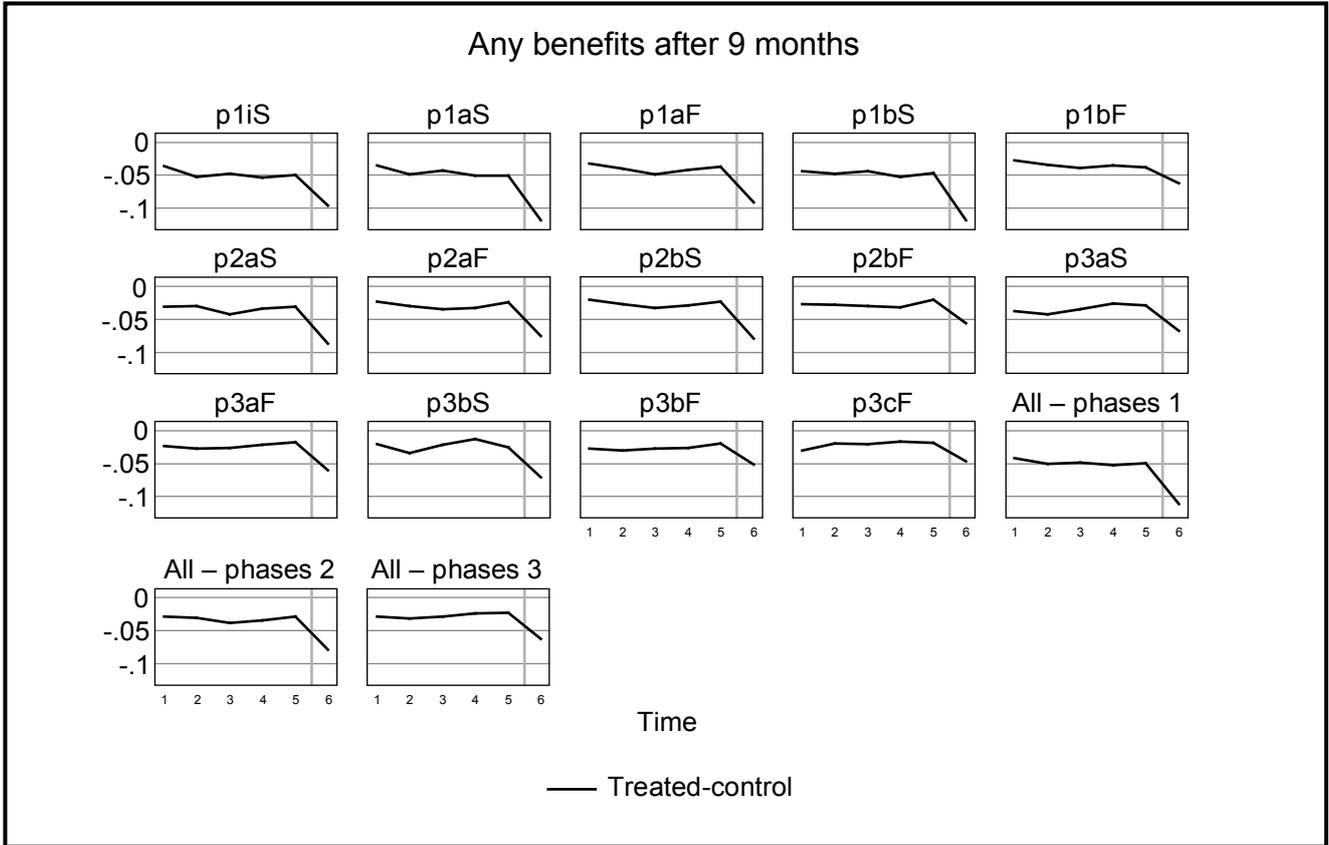


Figure E.3 Difference in the proportion of lone parents with older (treated) and younger (comparison) children on IS, JSA or ESA after nine months from the start of the observation period, for sub-phase and cohort



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Figure E.4 Difference in the proportion of lone parents with older (treated) and younger (comparison) children on IS, JSA or ESA after 15 months from the start of the observation period, for sub-phase and cohort

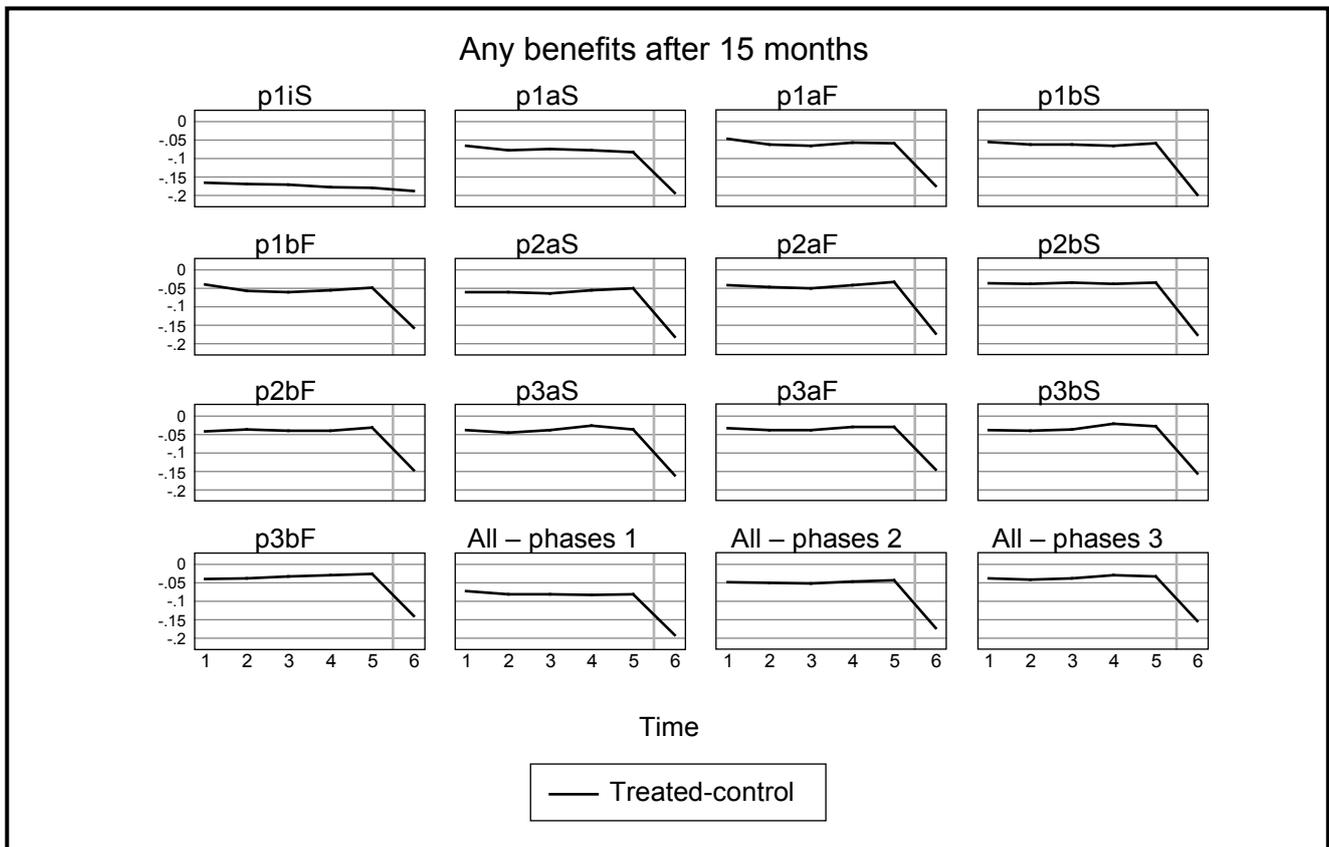
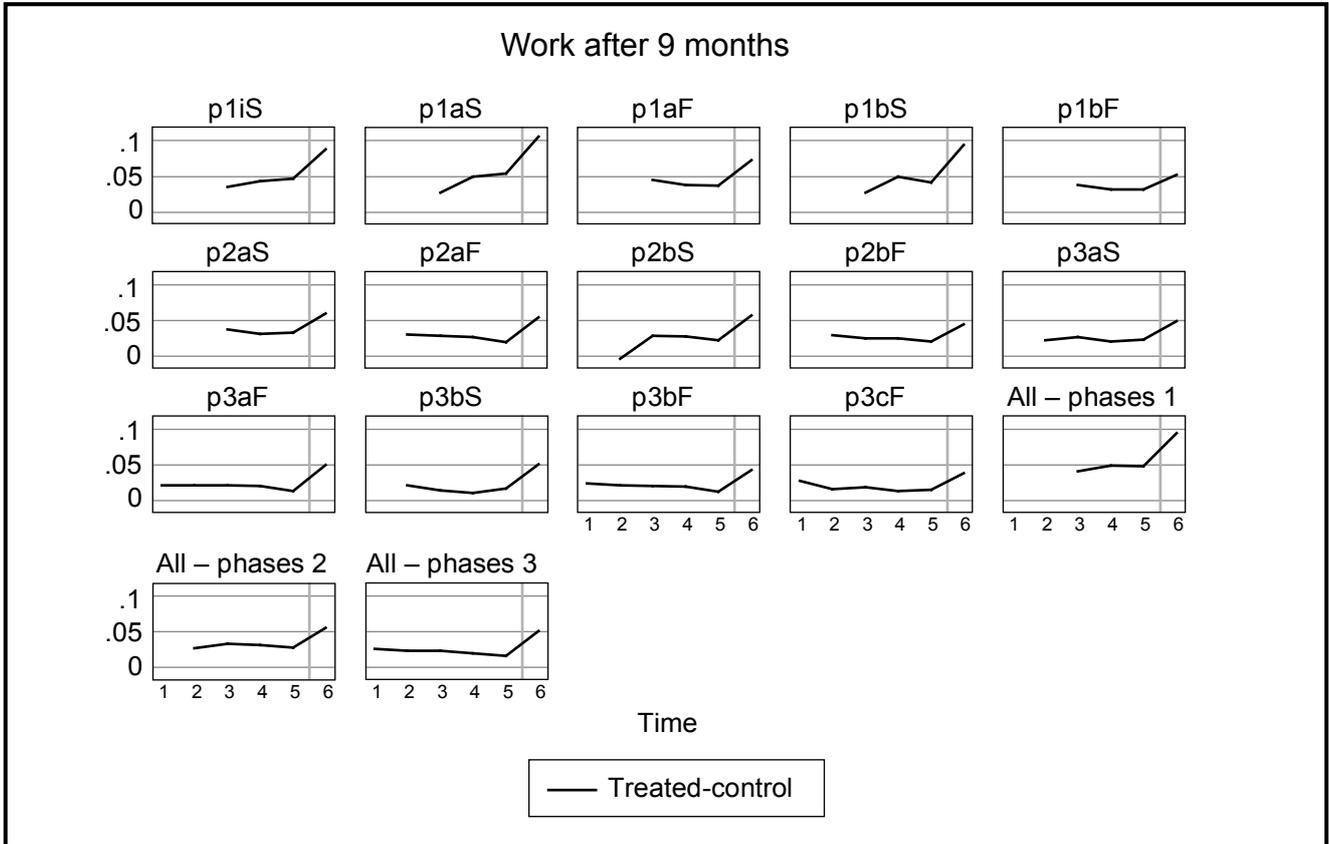
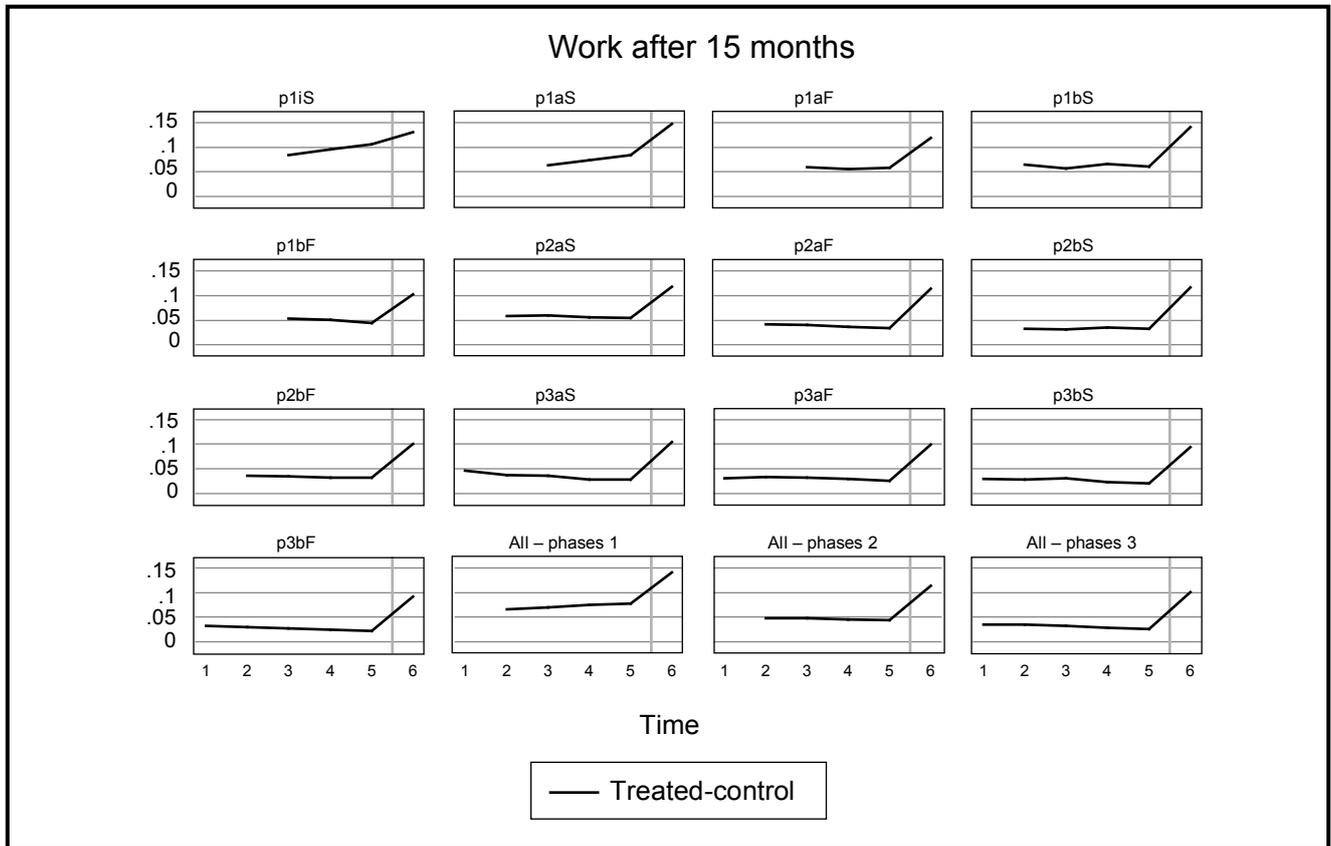


Figure E.5 Difference in the proportion of lone parents with older (treated) and younger (comparison) children in work of 16+ hours after nine months from the start of the observation period, for sub-phase and cohort



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Figure E.6 Difference in the proportion of lone parents with older (treated) and younger (comparison) children in work of 16+ hours after 15 months from the start of the observation period, for sub-phase and cohort



These figures are important in three ways:

- they allow us to assess whether the differences in outcomes between the two groups of lone parents are stable over time for those cohorts unaffected by LPO. Put simply, (approximately) horizontal lines for the first five cohorts would constitute evidence in favour of common trends, and would, therefore, offer support to the underlying assumption of the DiD approach;
- they allow us to assess the variability in the differences in outcomes between the two groups of lone parents for those cohorts unaffected by LPO. A high degree of variability in the first five data points might cause us to doubt whether any changes in the differences between the groups after LPO began was really due to the policy change; and
- they allow us to assess whether the underlying data is suggestive of a policy effect by comparing the difference between the two groups for the last cohort (observed after LPO begins) with those for the previous five cohorts.

In general, these graphs do lend support to the assumption of common trends between the two groups of lone parents, and they suggest that there is little variation in the differences in outcomes between the two groups of lone parents for those cohorts unaffected by LPO. The main results in this report, therefore, use the basic DiD specification, but a variant has been estimated (but is not reported) which allowed for group-specific linear time trends. This is known as a 'trend-adjusted DiD'. When group-specific trends are included in the DiD regressions, it is possible to test the hypothesis that these trends are identical for lone parents with older and younger children. Across the many outcomes and phases considered in the analysis of this report, several of these tests do lead to the rejection of the null hypothesis of equal linear trends between the treated and the comparison group. However, the point estimates of the effect of LPO are always very similar between the standard DiD and the trend-adjusted DiD, and this is why results from this specification are not reported here.

Appendix F

Additional information on lone parents who remained on IS

This appendix provides descriptive statistics on the lone parents who remained on Income Support (IS) at the end of the observation period, according to whether they had another child. On average, lone parents remaining on IS who had another child were younger (with average age dropping from 36 in Phase 1 to 30 in Phase 3), less likely to be disabled, had spent more time in work and less time on Employment and Support Allowance (ESA) or receiving Carer’s Allowance in the six months before being sampled than those remaining on IS without having another child.

Table F.1 Summary statistics for the treated group who stayed on IS in Phase 1

After 36 months:	No other child		New child		All	
	mean	sd	mean	sd	mean	sd
Female	0.933	0.251	0.996	0.062	0.938	0.241
age – y	42.085	6.457	35.627	4.776	41.510	6.587
White	0.785	0.411	0.736	0.441	0.780	0.414
Number of children	1.572	0.745	1.514	0.709	1.566	0.742
Disability	0.528	0.499	0.198	0.399	0.498	0.500
Proportion of last 6 months before observation on:						
IS	0.853	0.340	0.791	0.391	0.847	0.345
Work	0.087	0.272	0.139	0.334	0.092	0.278
JSA	0.006	0.069	0.008	0.079	0.006	0.070
ESA	0.038	0.182	0.034	0.176	0.037	0.181
Carer Allowance	0.033	0.174	0.027	0.158	0.032	0.173
Deprivation_England	0.769	0.226	0.781	0.227	0.770	0.226
Deprivation_Wales	0.286	0.245	0.294	0.266	0.286	0.247
Count	10672		1044		11716	

Table F.2 Summary statistics for the treated group who stayed on IS in Phase 2

After 27 months:	No other child		New child		All	
	mean	sd	mean	sd	mean	sd
Female	0.946	0.227	0.996	0.065	0.957	0.203
age – y	38.972	6.900	33.241	4.480	37.687	6.867
White	0.770	0.421	0.745	0.436	0.764	0.424
Number of children	1.869	0.926	1.641	0.820	1.818	0.909
Disability	0.271	0.445	0.157	0.364	0.246	0.431
Proportion of last 6 months before observation on:						
IS	0.798	0.386	0.781	0.394	0.794	0.388
Work	0.127	0.323	0.173	0.363	0.137	0.333
JSA	0.008	0.080	0.008	0.081	0.008	0.080
ESA	0.030	0.161	0.027	0.154	0.029	0.160
Carer Allowance	0.037	0.183	0.012	0.103	0.031	0.169
Deprivation_England	0.767	0.224	0.782	0.224	0.770	0.224
Deprivation_Wales	0.305	0.256	0.251	0.233	0.294	0.252
Count	4088		1181		5269	

Table F.3 Summary statistics for the treated group who stayed on IS in Phase 3

After 18 months:	No other child		New child		All	
	mean	sd	mean	sd	mean	sd
Female	0.962	0.190	0.998	0.047	0.975	0.155
age – y	35.277	7.266	30.302	4.849	33.451	6.914
White	0.731	0.443	0.749	0.433	0.738	0.440
Number of children	1.999	1.052	1.726	0.930	1.898	1.018
Disability	0.191	0.393	0.121	0.326	0.165	0.372
Proportion of last 6 months before observation on:						
IS	0.776	0.400	0.773	0.400	0.775	0.400
Work	0.152	0.348	0.170	0.361	0.158	0.353
JSA	0.006	0.069	0.004	0.055	0.006	0.064
ESA	0.029	0.160	0.016	0.118	0.025	0.146
Carer Allowance	0.028	0.159	0.010	0.096	0.021	0.140
Deprivation_England	0.759	0.237	0.779	0.219	0.766	0.231
Deprivation_Wales	0.290	0.247	0.264	0.223	0.280	0.238
Count	8438		4894		13332	

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