The lone parent pilots after 12 to 24 months: an impact assessment of In-Work Credit, Work Search Premium, Extended Schools Childcare, Quarterly Work Focused Interviews and New Deal Plus for Lone Parents

Mike Brewer[1]
James Browne[1]
Claire Crawford[1]
Genevieve Knight[2]

[1] Institute for Fiscal Studies
[2] Policy Studies Institute

This is a reproduction of DWP Research Report No 415, ISBN 9781847121578. Published for the Department for Work and Pensions under licence from the Controller of Her Majesty's Stationery Office by Corporate Document Services, Leeds.

The report is available online:

http://www.dwp.gov.uk/asd/asd5/rports2007-2008/rrep415.pdf

Department for Work and Pensions

Research Report No 415

The lone parent pilots after 12 to 24 months: an impact assessment of In-Work Credit, Work Search Premium, Extended Schools Childcare, Quarterly Work Focused Interviews and New Deal Plus for Lone Parents

Mike Brewer, James Browne, Claire Crawford and Genevieve Knight

A report of research carried out by the Institute for Fiscal Studies and the Policy Studies Institute on behalf of the Department for Work and Pensions

Corporate Document Services

First Published 2007.

ISBN 978 1 84712 157 8

Printed by Corporate Document Services.

Contents

List of tables

List of figures

Acknowledgements

This research was commissioned by the Department for Work and Pensions (DWP). The contract managers at DWP have been Anna Bee, Jenny Crook, Alison Herrington and Nicola Moss. The authors are very grateful to numerous officials at DWP who have helped in producing the data used in this project and allowed the authors to understand the various administrative datasets. They are also grateful to Monica Costa Dias, Lorraine Dearden, Jonathan Shaw and Barbara Sianesi, all from the Institute for Fiscal Studies, who gave comments on drafts and advice on the empirical work.

The Authors

Mike Brewer is Programme Director of the Direct Tax and Welfare sector at the Institute for Fiscal Studies (IFS). He received an MSc in Economics and Econometrics in 1997 and has worked since then at HM Treasury and IFS. His main interests are in the way taxes, tax credits and the benefit system affect the lives of families with children. He has also looked at trends in the current Government's approach to social security benefits and tax credits, and its ambition to abolish child poverty.

James Browne is a research economist in the Direct Tax and Welfare sector at IFS, and has a BA in Economics from the University of Cambridge. His general research interest is in the economic impacts of the personal tax and benefit system, and his work at present includes a project to simulate the incomes of pensioners in the future and on assessing how the UK tax system has changed over the last 25 years.

Claire Crawford is a research economist in the education, employment and evaluation team at IFS. Her current work includes looking at the impact of children's social skills on later educational, behavioural and employment outcomes and investigating potential differences in the labour market outcomes of ethnic minority and white Jobcentre Plus customers.

Genevieve Knight is a Principal Research Fellow at the Policy Studies Institute (PSI). She completed her Ph.D. in Economics in 2003 with the University of Sydney, with a thesis examining the issues in applied evaluation of active labour market programmes. A range of labour market issues have been the main focus of her research. She has worked with PSI since 1998 and has undertaken a broad range of evaluation research.

Abbreviations

DfES	Department for Education and Skills
DiD	Difference-in-differences
DWP	Department for Work and Pensions
ERA	Employment Retention and Advancement
ESC	Extended Schools Childcare
ESQWFI	Extended Schools Quarterly Work Focused Interview
FILM	Fully-interacted linear matching
HB	Housing Benefit
HMRC	Her Majesty's Revenue and Customs
IB	Incapacity Benefit
IFS	Institute for Fiscal Studies
IMD	Index of Multiple Deprivation
IS	Income Support
ITT	Intention to treat
IWC	In Work Credit
JSA	Jobseeker's Allowance
LA	Local Authority
LEA	Local Education Authority
LPP	Lone parent pilots

NBD	National Benefit Database
NDLP	New Deal for Lone Parents
NDYP	New Deal for Young People
ND+fLP	New Deal Plus for Lone Parents
NINO	National Insurance Number
Ofsted	Office for Standards in Education
OLS	Ordinary least squares
ONS	Office for National Statistics
PA	Personal Adviser
ppt	Percentage point
PSM	Propensity score matching
QWFI	Quarterly Work Focused Interview
SDA	Severe Disablement Allowance
SOA	Super Output Plan
TTWA	Travel to Work Area
WB	Widow's Benefit
WFI	Work Focused Interviews
WPLS	Work and Pensions Longitudinal Study
WSP	Work Search Premium

Glossary

Comparison districts	A Jobcentre Plus district not operating one of the lone parent pilots, nor the Employment Retention and Advancement (ERA) demonstration.
Pilot districts	A Jobcentre Plus district operating one of the lone parent pilots.
Potentially eligible	A lone parent who has been claiming Income Support (IS) or Jobseeker's Allowance (JSA) for at least 12 months.

Summary

Background

From April 2004, a set of Government policies designed to help lone parents into work have been piloted in various combinations in a number of Jobcentre Plus districts in Great Britain. The five policies are: In Work Credit (IWC), Work Search Premium (WSP), Extended Schools Childcare (ESC) and Childcare Tasters, Quarterly Work Focused Interviews (QWFIs) for lone parents whose youngest child is aged 12 or over in Local Education Authorities (LEAs) in which an ESC pilot is operating (ESQWFI), and New Deal Plus for Lone Parents (ND+fLP), hereafter collectively referred to as 'the lone parent pilots' (LPPs or 'the pilots'). The pilots were rolled out in four Phases, the first three of which are analysed in this report.

This report estimates the impact of the LPPs on lone parents who have received Income Support (IS) or Jobseeker's Allowance (JSA) for at least 12 months. It uses a difference-in-differences (DiD) estimator, and makes use of lone parents in districts not operating a pilot as a comparison group. The data covers the first 12 months (Phase 3 districts) to the first 24 months (Phase 1 districts) of the pilots' operation, and so should be seen as giving the early impacts. Impacts were estimated separately for the stock of lone parents who had been on benefit for at least 12 months when the pilots began, and the flow sample of lone parents whose claim of IS/JSA reached 12 months after the pilots began.

Key findings

- Before the pilots began, the districts operating the lone parent pilots had, on average, worse labour market outcomes for lone parents than those not operating the pilots.
- The pilots had small, positive impacts on the number of lone parents in work and no longer receiving out-of-work benefits. After 12 months of being potentially eligible to the pilots, the central estimate implies that the lone parent pilots led to around 900 more lone parents not being on benefits (around 800 from the stock sample, and around 100 from the flow sample). Measured after 12 months of being potentially eligible to the pilots, these impacts correspond to 0.6 per cent and 0.2 per cent of all lone parents on benefit for at least 12 months in the stock and flow sample respectively, rising to 1.2 per cent after 24 months for the stock sample in the Phase 1 districts.

- In the absence of the pilots, lone parents on IS/JSA for at least 12 months tended to stay on benefits for long durations. The central estimate implies that the pilots increased the number of lone parents no longer receiving out-of-work benefits by 1.6 per cent for the flow sample, and by 4.1 per cent for the stock sample after 12 months of being eligible to the pilots. After two years of the pilot's operation in the Phase 1 districts, the pilots increased the number of lone parents in the stock sample no longer receiving out-of-work benefits by seven per cent.
- Participation in IWC – the number of lone parents who have ever received IWC as a fraction of those ever potentially eligible – increased continuously in all districts. This is consistent with the estimates from the stock sample that the impact of the pilots did increase up to 31 March 2006, and suggests that their impact may continue to increase after that point.
- There is some evidence that the impact of the pilots was greater amongst lone parents who had a history of participation in New Deal for Lone Parents (NDLP) than those who did not. This could be because these lone parents were more likely to know about IWC, or because they naturally tended to be a group more responsive to financial incentives to work. There was a general tendency for the impact of the LPPs on benefit outcomes to rise with the age of youngest child. There was no consistent variation according to the quarter in which a lone parent became potentially eligible to the LPPs, nor by the number of children.
- As a whole, the evidence in this report suggests that, in its first one to two years of operation, the main achievement of the pilots was to make better off those lone parents who would have left benefits for work had the pilots not been in operation, rather than to encourage substantially more lone parents to do just that. The pilots may be encouraging job retention amongst this group, but it was not possible to examine this in this report.
- The fact that the positive response to the lone parent pilots is concentrated amongst those lone parents who had a history of participation in NDLP suggests – but does not prove – that the small impact of the pilots might be due to a lack of knowledge of IWC amongst those lone parents who have not yet decided to look for work; separately-commissioned qualitative research on both the pilots and ND+fLP should be informative about this.
- Both participation in IWC and the impact of the lone parent pilots on the stock sample increased over time, and so equivalent impact estimates in future reports (due to be published in late 2008) may be higher than those presented here. On the other hand, the impact of IWC on lone parents might fall after individuals reach the 12 month time-limit for payments. Given that very few of the lone parents who have received IWC will have received it long enough to reach that time-limit in the period covered by the data used in this report, it is possible that the estimates of the impact of the pilots *assessed over longer periods* in subsequent reports could be lower than those impacts assessed over 12 to 24 months provided here. It is therefore unclear, *a priori*, whether future impact estimates will be higher or lower than those found in this report.

Summary

This is the first published report from a project designed to evaluate quantitatively the labour market impact of a set of government policies designed to help lone parents into work. These policies are being piloted in different combinations in Jobcentre Plus districts in Great Britain. The five policies in question are: IWC, WSP, ESC, ESQWFI, and ND+fLP. These are collectively referred to as the LPPs. In practice, the impact of these policies will be dominated by the impact of IWC.

The pilots were introduced in four phases (April 2004, October 2004, April 2005 and October 2005), the first three of which are analysed in this report. Data limitations mean that the analysis is restricted to English districts. There are separately-commissioned qualitative evaluations of the lone parent pilots and of ND+fLP, both due to be published in March 2007.

Methodology

The evaluation aims to estimate the impact of the LPPs on various labour market outcomes for lone parents on IS or JSA who live in the pilot districts. This report provides short-run estimates of the early impact of the pilots using data from the first two years of operation of the pilots in Phase 1, 18 months in Phase 2 and 12 months in Phase 3.

Information concerning who actually participated in the LPPs was also unavailable to researchers in time for this report, thus the impact estimated herein is that of being *potentially eligible* for the LPPs (corresponding to estimating the impact of the 'intention to treat' of the LPPs).

The report uses a DiD estimator to estimate the impact of the LPPs. This involves comparing the trend in labour market outcomes for lone parents in the pilot districts with the trend in labour market outcomes for lone parents in a set of comparison districts (see Box 1). The lone parents in the comparison districts are acting as a guide to the trend in outcomes that would have been experienced by those in the pilot districts had there been no pilots. The comparison districts were chosen to be all English districts operating neither a LPP nor the Employment Retention and Advancement (ERA) programme. Because outcomes for lone parents in the pilot districts tended to be worse than for those in the comparison districts, the pilots would be deemed to be having a positive impact if there was a convergence in labour market outcomes between the pilot and comparison districts.

Box 1 The DiD estimators

An alternative way of describing the DiD estimator is shown in the Table below.

	Before policy		After policy	
	Comparison districts	Pilot districts	Comparison districts	Pilot districts
Lone parents	B^0	A^0	B^1	A^1

If the Letters A and B refer to the mean (average) outcome for the group in question, having controlled for differences in observable characteristics, then the DiD estimator is given by $(A^1 – A^0) – (B^1 – B^0)$. This is the trend in the pilot districts less the trend in the comparison districts.

In practice, this assessment is made after controlling for a wide range of factors which might also affect labour market outcomes. This evaluation used administrative data held by the Department for Work and Pensions (DWP) – the Work and Pensions Longitudinal Study (WPLS), the Income Support History file (IS History file), and the National Benefits Database (NBD) – that provided information on benefit receipt up to 31 March 2006, and employment information up to 30 September 2005. A large number of individual and local-area characteristics that affect labour market outcomes were included in the final dataset, including detailed work and benefit outcomes for the 30 months before lone parents became potentially eligible for the lone parent pilots, personal characteristics recorded in the administrative data-sets, and local-area data from a variety of sources, including the 2001 Census and Office for Standards in Education (Ofsted) data on registered childminders. Because some of this local-area data is available in different forms across the UK, this report looks only at English districts (and therefore does not estimate the impact of the pilots in Edinburgh or Cardiff).

The decision to use a DiD estimator was taken after testing whether lone parents in comparison districts would act as a good guide to the level of labour market outcomes of lone parents in the pilot districts in the absence of the pilots (sometimes known as a pre-programme test, or a test for unobservable differences). It was found that lone parents in comparison districts had better labour market outcomes than lone parents in the pilot districts even after controlling for a wide range of factors; provided this difference does not change over time, however, a DiD estimator can still give a reliable guide to the impact of the pilots.

Data and results

The sample for analysis potentially consisted of all lone parents in England whose claim for IS/JSA exceeded 12 months at some point between 1 April 2002 and 30 September 2005. This sample was split into the pilot and comparison districts, as described above, and into two further groups:

- The **stock sample**: includes all IS/JSA claims being made by lone parents living in one of the pilot districts whose duration equals or exceeds 12 months at the point at which the LPPs began: these claims were potentially affected by the pilots from the day they were introduced.
- The **flow sample**: includes all IS/JSA claims being made by lone parents living in one of the pilot districts whose duration equals or exceeds 12 months at some point between 1 April 2004 and 30 September 2005 (the 'inflow window').

The more interesting estimates are those of the impact on the flow sample, because that determines how effective the pilots will be in the long-run: in the long-run, everyone in the initial stock sample will have stopped claiming benefits, and so the only lone parents potentially eligible to the pilots will be those whose claim of IS/JSA reached 12 months after the introduction of the LPPs. However, the larger sample size of the stock sample means that impacts are estimated more accurately for these groups.

The employment records in the WPLS are based on employers' returns to Her Majesty's Revenue and Customs (HMRC) about individuals they are employing who are earning enough to be liable for Income Tax or National Insurance. This means that it may not include individuals who are in work, but earning below the personal threshold (although the received wisdom is that many, mainly large, employers do report such spells of work), nor other spells of work that have not been declared to HMRC. For this reason, the data may underestimate the amount of time spent in work. However, the way in which uncertain start and end dates are recorded may lead to an overestimate of the amount of time spent in work if all dates in the WPLS are taken at face value. For example, on the date that individuals first become eligible for the LPPs, between 11 per cent (of the stock) and 21 per cent (of the flow) are recorded as being in work. Although it is possible to be both in work and receiving IS, this proportion seems rather high. This means that the measure of work in the WPLS may not be a reliable guide to whether a given individual is actually working. On the other hand, the results of this evaluation suggest that changes over time in the measure of work look more plausible.

Lone parents in pilot districts are slower to leave benefits and spend less time in work than those in comparison districts. Lone parents in the flow sample leave benefits more quickly and spend more time in work than those in the stock sample.

Participation in In Work Credit

Data on which lone parents received IWC was not available for this report, but information on the total number of claims of IWC by month and by district were available, up to November 2005. It was therefore possible to estimate take-up of IWC, or participation in IWC. However, limitations of the measure of work in the WPLS meant that it was impossible to estimate accurately the number of lone parents who met all the conditions for receiving IWC (ie, who had been on benefits for at least 12 months and then left benefit for a job): a measure of take-up using this definition of eligibility exceeded 100 per cent, presumably because some lone parents had genuinely met the conditions for receiving IWC, but this was not being reflected in the WPLS.

However, it was possible to estimate accurately a broader measure of participation in IWC: the number of lone parents who have received IWC as a proportion of those who have ever been potentially eligible (ie, who have been on benefits for at least 12 months and live in a pilot district). By November 2005, this measure had reached four per cent in the Phase 3 districts, eight per cent in the Phase 2 districts, and nine per cent in the Phase 1 districts. The measure – which should be stable in a long-run equilibrium – rose over time in all three Phases, and was continuing to rise in the Phase 1 districts even after 20 months of operation. This suggests that IWC was not operating at its full potential by November 2005, perhaps reflecting delays in lone parents discovering that they are potentially eligible for IWC, or delays in the ability of Jobcentre Plus staff to market IWC effectively: the data here cannot distinguish between these or alternative explanations. Because this participation rate provides a theoretical upper bound to the impact of the IWC, this result also suggests that the impact of IWC may also be rising over time.

There was also variation in this participation rate across the Phases, with Phase 1 having lower participation rates than Phases 2 and 3 (although participation data was available only to November 2005, covering only the first nine months in the Phase 3 districts). It is not simple to interpret this finding: it could reflect differences in local labour markets, differences in the characteristics of lone parents in the districts in the various Phases, or differential performance of Jobcentre Plus staff in marketing IWC.

Difference-in-difference estimates of the impact of the lone parent pilots

Estimates are provided of the impact of the pilots on the proportion of lone parents who have stopped claiming benefits, and on the proportion of lone parents who are in work, at three-monthly intervals following the date on which they first became potentially eligible for the LPPs. Estimates are made separately for the flow and stock sample, and separately for each Phase (and for the flow sample, for all three Phases together).

The estimates suggest that, on average, the pilots had small, positive impacts on both work and benefit outcomes. For the stock sample, an average of 0.6 percentage point (ppts) more of potentially eligible lone parents had left benefit after 12 months of being potentially eligible to the lone parent pilots, rising to 1.20 ppts after 24 months in the Phase 1 districts; between 0.26 and 1.11 ppts of potentially eligible lone parents more are in work six months after the introduction of the LPPs. After 12 months exposure to the pilots, 0.24 ppts more of potentially eligible lone parents from the flow sample have left benefit and 0.28 ppts more are in work, but neither of these numbers are statistically significant from zero.

In the absence of the pilots, lone parents on IS/JSA for at least 12 months tend to stay on benefits for long durations, and this helps explain why these estimated impacts seem small. Of the 38,560 lone parents in the flow sample, 5,861 (15.2 per cent) were not receiving out-of-work benefits a year after first becoming eligible. The central estimate is that the lone parent pilots were responsible for just under a hundred (93) of these lone parents. Of the 191,369 lone parents in the stock sample, around 19,500 (10.2 per cent) were no longer receiving out-of-work benefits a year later, and the central estimate is that the lone parent pilots were responsible for around 800 of these. After 24 months of operation of the pilots in the Phase 1 districts, 7,245 of the 42,374 lone parents in the stock sample and potentially eligible to the lone parent pilots were no longer on out-of-work benefits, and the central estimate is that the lone parent pilots are directly responsible for 508 of those. This implies, therefore, that after 12 months of being eligible to the lone parent pilots, the number of lone parents not on benefit had increased by 4.1 per cent for the stock sample and 1.6 per cent for the flow sample, although the latter is not statistically significant from zero. After 24 months, the number in the stock sample and not on benefit in the Phase 1 districts had increased by seven per cent.

Estimates from the stock sample suggest that the impact of the pilots increased over time, consistent with estimates of the proportion of potentially eligible lone parents who have ever received IWC. This pattern was not evident in the flow sample, although this may be because the flow sample was too small to observe such an effect at this stage.

Estimates from the stock sample suggest that the impact of the pilots is greater for Phase 3 districts than it is for Phase 1 or Phase 2 districts; estimates from the flow sample provide weak evidence that the impact of the pilots is greater for Phase 2 districts than it is for Phase 1 or Phase 3 districts. These differences exist after the analysis has controlled for many characteristics of the local areas and lone parents in the different Phases, but this variation between Phases may reflect differences that have not been adequately controlled for. But the differences are small, and not always statistically significant. There is weak evidence that the impacts are slightly greater in districts which do not operate ND+fLP, but this difference is only apparent in the stock sample, is derived from data from the first 12 months of operation of ND+fLP combined with the six to 12 months before that, and is very small in magnitude.

There is weak evidence that the impacts are slightly greater for lone parents with some history of participation in NDLP. Because NDLP is a voluntary programme, it might be expected that those lone parents who join it are those who are more likely to leave benefit and enter work so those lone parents who are naturally predisposed to respond to financial incentives may be the ones that join NDLP, and therefore any positive impact of IWC on all lone parents' outcomes is concentrated amongst this group. In addition, it may be that those lone parents with a recent history of NDLP participation are more likely to have heard about IWC before they found a job through meetings with their personal adviser, so these differences may reflect informational effects. There is also weak evidence that the impacts are slightly greater for female lone parents, and for lone parents whose youngest child is relatively older.

Table 1 summarises the main impact estimates.

Table 1 Summary of impacts of the lone parent pilots (all in percentage points)

	Benefit outcomes			Work outcomes		
Stock sample	**After 12 months**			**After six months**		
Phase	**1**	**2**	**3**	**1**	**2**	**3**
Overall	0.51**	0.25	1.20***	0.26	0.34**	1.11***
ND+fLP	0.51**	-0.33	N/A	0.26	-0.16	N/A
Non-ND+fLP	N/A	0.42**	1.20***	N/A	0.51***	1.11***
NDLP participation						
None	0.40	0.15	1.07***	0.27	0.35**	1.03***
Recent	-0.49	0.89	3.10***	-2.43***	0.31	2.57***
Past	1.97	0.85	1.87**	1.00	0.11	1.04*
Female	0.59**	0.31	1.24***	0.26	0.39***	1.16***
Male	-0.70	-0.87	0.84	0.21	-0.43	0.37
Age of youngest child						
0-1	-0.98	-0.57	0.93	0.41	0.31	0.68
1-3	0.81	-0.20	0.51	0.57	0.65	0.37
3-4	0.91	0.09	0.60	-0.20	-0.03	1.77***
5-8	0.24	0.12	1.14***	1.11**	0.75	0.95***
8-11	0.14	0.39	1.57***	-0.56	0.40	0.97***
11+	0.95	0.40	1.95***	-0.14	-0.08	1.51***

Continued

Table 1 Continued

Flow sample	Benefit outcomes After 12 months	Work outcomes After six months
Overall	0.24	0.28
Phase 1	-0.37	0.61**
Phase 2	0.73	0.35
Phase 3	-1.61	-2.13
ND+fLP	0.49	0.32
Non-ND+fLP	-0.09	1.02***
NDLP participation		
None	-0.23	0.18
Recent	3.38***	-0.02
Past	1.16	0.60
Female	0.19	0.60**
Male	1.01	0.75
Age of youngest child		
0-1	-0.44	0.56
1-3	-0.43	0.96*
3-4	1.51	0.86
5-8	0.17	0.70
8-11	1.23	0.74
11+	0.71	-0.26

Notes: The table shows the central estimate of the impact of the lone parent pilots on the proportion of lone parents no longer on benefit (or 'now in work') six or 12 months after first becoming potentially eligible to the pilots. Results are presented in percentage points (ppts), so an estimate of -0.16 means -0.16 ppts, not -16ppts. * = significant at 10 per cent level, ** = significant at 5 per cent level, *** = significant at 1 per cent level.

Summary of impact assessments and policy implications

As a whole, the evidence in this report suggests that, in its first one to two years of operation, the main achievement of the pilots was to make better off those lone parents who would have left benefits for work had the pilots not been in operation, rather than to encourage substantially more lone parents to do just that. The pilots may well be encouraging job retention amongst this group, but it is not possible to examine this in detail without data on which lone parents received IWC (due for the later reports – see below).

The fact that the positive response to the lone parent pilots is concentrated amongst those lone parents who had a history of participation in NDLP suggests – but by no means proves – that the small impact of the pilots might be due to a lack of knowledge of IWC amongst those lone parents who have not yet decided to look for work; separately-commissioned qualitative research on both the pilots and ND+fLP should be informative about this.

Both participation in IWC and the impact of the lone parent pilots increased over time, and so equivalent impact estimates in future reports may well be higher than those presented here. On the other hand, the impact of IWC on individual lone parents might be expected to fall after the 12 month time-limit for payments has been reached. Given that few of the lone parents who have ever received IWC will have received it long enough to reach that time-limit in the period covered by the data used in this report, it is therefore possible that the estimates of the impact of the pilots *assessed over longer periods* in subsequent reports could be lower than those provided here when assessed over 12 to 24 months. It is therefore unclear, *a priori*, whether future impact estimates will be higher or lower than those found in this report.

In theory, the impact of the lone parent pilots in different districts can be compared to provide estimates of the additional impacts of various components of the lone parent pilots (for example, this could provide an estimate of the additional impact of WSP or of ESC compared with IWC alone). However, this report did not provide such estimates, other than comparing ND+fLP districts with other districts. This is because such estimates rely on comparing the estimated impacts in different districts with each other; because the estimated impact across all districts was so low and not always statistically significant, differences between sub-groups were even less likely to be statistically significant from zero. The authors considered, therefore, having seen the estimates for all areas, that it would not be meaningful to attempt to estimate separately the impact of different combinations of policies. It will, though, be possible to re-examine this issue in future reports; the fact that future reports will have access to more data means that it is very likely that the estimates of the impact of the pilots will be estimated more accurately. The estimates in this report, then, are of the average impact of the lone parent pilots across all districts, although it is likely that any impacts are dominated by the impact of IWC.

Future analysis

At least two further reports are planned as part of this evaluation. These reports will have access to individual-level data detailing who actually received IWC, and so will enable greater focus on whether the LPPs have affected job retention rates, as well as moves off benefits and into work. They will also have access to more outcome data, and so will be able to consider the medium- to long-run impacts of the LPPs on lone parents in Phases 1 to 3, and the shorter-run impacts on lone parents living in the Phase 4 pilot districts. A technical report will also investigate alternative ways of estimating the impact of the pilots.

1 Introduction

This is the first published report from a project designed to evaluate quantitatively the impact of a set of government policies designed to help lone parents into work.

There are five policies in total. These policies are being piloted in different combinations in Jobcentre Plus districts in Great Britain, and have been introduced in four phases (starting April 2004, October 2004, April 2005 and October 2005). The five policies in question are: In Work Credit (IWC), Work Search Premium (WSP), Extended Schools Childcare (ESC) and Childcare Tasters, Quarterly Work Focused Interviews (QWFI) for lone parents whose youngest child is aged 12 or over in Local Education Authorities (LEAs) in which an ESC pilot is operating (ESQWFI), and New Deal Plus for Lone Parents (ND+fLP). Hereafter, these are collectively referred to as the 'lone parent pilots' (LPPs). In practice, though, it is expected the impact of these policies will be dominated by the impact of IWC, and so some of this report looks exclusively at that policy.

The aim of the evaluation is to estimate the short- and long-run impact of the LPPs on various labour market outcomes for lone parents on Income Support (IS) or Jobseeker's Allowance (JSA) who live in the pilot districts. There are separately-commissioned qualitative evaluations of the lone parent pilots and of ND+fLP, not yet published at the time this report went to press.

This first stage report is only able to provide relatively short-run estimates of the impact of the LPPs in Phases 1 to 3 because at the time this project was carried out, data was only available for up to two years following the introduction of the pilots in the earliest (Phase 1) districts, and up to only one year in Phase 3. Information concerning who actually participated in the LPPs was also unavailable to researchers in time for this report, thus the impact estimated herein is that of being *potentially eligible* for the LPPs (this concept of being 'potentially eligible' is explained more fully in Section 3 of this report, but note that in the evaluation jargon it means that this report evaluates the 'intention to treat' (ITT) of the LPPs). Future reports planned as part of this evaluation will look at longer-run outcomes, and make full use of administrative data on who received IWC.

The outline of this report is as follows:

- Chapter 2 provides an overview of the policies being evaluated, including details of their locations and timings.
- Chapter 3 describes the methodology that is used.
- Chapter 4 describes how the datasets that are used in the evaluation were constructed.
- Chapter 5 presents impact estimates from Phases 1 to 3 of the LPPs using benefit data up to 31 March 2006 and employment data up to 30 September 2005.
- Chapter 6 concludes and sets out next steps.

2 The lone parent pilots: what policies are being evaluated?

This project aims to evaluate the impact of a number of policies designed to help or encourage lone parents into work and/or to stop claiming benefits. These policies are:

- In-Work Credit (IWC);
- Work Search Premium (WSP);
- Extended Schools Childcare (ESC) and Childcare Tasters;
- Quarterly Work Focused Interviews (QWFI) for lone parents in Local Education Authorities (LEAs) in which an ESC pilot is operating, whose youngest child is aged 12 or over (ESQWFI);
- New Deal Plus for Lone Parents (ND+fLP).

Section 2.1 provides brief details of the policies, while Section 2.2 shows how the policies overlap spatially and temporally.

2.1 Details of the policies

2.1.1 In Work Credit

The IWC is available to lone parents who have:

- been receiving Income Support (IS) or Jobseeker's Allowance (JSA, income-based or contributory) or a combination of the two for a continuous period of 12 months or more; and
- who stop claiming benefits and move into work of at least 16 hours per week.

It is payable at a rate of £40 per week for up to 12 months in order to ease the transition into work, and to encourage lone parents to leave benefits for employment (of at least 16 hours a week). Payments will stop after 12 months, or if the lone parent stops working (breaks in employment of less than five weeks will not lead to payments stopping), or if the lone parent claims an out-of-work benefit. Lone parents have to provide evidence that they are still in work (or are self-employed) at four points during this period: 10, 26, 38 and 52 weeks after taking a job. The bonus is paid weekly in arrears. IWC payments should not lead to a reduction in entitlements to means-tested benefits or tax credits; however, there are reports that some Local Authorities (LAs) are incorrectly reducing Housing Benefit (HB) awards where individuals are in receipt of IWC: this, of course, reduces or eliminates the additional financial benefit to employment that IWC provides.

In April 2004 (Phase 1), IWC was introduced in the Jobcentre Plus districts of Bradford, North London and South-East London. In October 2004 (Phase 2), it became available in a further nine districts: Cardiff & Vale; Central London; Dudley & Sandwell; Edinburgh, Lothian & Borders; Lancashire West; Leeds; Leicestershire; Staffordshire; West London. These districts were chosen because they had relatively poor outcomes for lone parents on benefit, and relatively high proportions of lone parents in the population. In April 2005 (Phase 3), IWC was rolled out across the remaining London districts (with the exception of North-East London, in which the Employment Retention and Advancement (ERA) programme offered similar incentives). In October 2005 (Phase 4), IWC was extended to a further six districts in the South East of England: Surrey & Sussex; Essex; Kent; Berkshire, Buckinghamshire & Oxfordshire; Bedfordshire & Hertfordshire; Hampshire & the Isle of Wight. The expansion to Phases 3 & 4 was justified on the grounds that work incentives might be particularly poor for lone parents in London and the south-east, perhaps because of high transport costs, or high levels of rents and council tax, which weaken work incentives through the operation of Housing Benefit and Council Tax Benefit. After this expansion, around 45 per cent of lone parents on benefit for at least a year will live in districts offering IWC.[1]

As outlined in Chapter 1, the availability of labour market outcome data means that this report will only consider the impact of the lone parent pilots (including IWC) in Phase 1 to 3 districts (in which the pilots started during or prior to April 2005). The impact of the lone parent pilots (LPPs) in the Phase 4 districts will be considered in later reports. Further, as explained in Chapter 4, this report considers only Jobcentre Plus districts in England.

2.1.2 Work Search Premium

Lone parents who have been on IS/JSA (or some combination) for 12 months or more, and who are willing to join New Deal for Lone Parents (NDLP) and engage voluntarily in job search activity are eligible to claim a WSP payment of £20 per week for a maximum of 26 weeks.

---

[1] HM Treasury (2006).

The WSP is payable to lone parents who are participants on NDLP and who agree an action plan with their Personal Adviser (PA). They are not tied into specific job search activities, but receipt of WSP is at the continual discretion of their PA, with whom they will discuss job search on a fortnightly basis.

WSP operates in a number of districts in tandem with IWC: Bradford and South-East London (Phase 1): Cardiff & Vale; Edinburgh, Lothian & Borders; Lancashire West; Leicestershire; Dudley & Sandwell; West London (Phase 2).

In the WSP pilot districts that are *not* also providing services as part of the ND+fLP pilot (Lancashire West and West London), WSP is no longer available to new clients since the end of September 2006; however, lone parents who started receiving WSP before this date will continue to receive it until they lose eligibility in the usual way (i.e. after six months, or after leaving IS/JSA).

2.1.3 Extended Schools Childcare and Childcare Tasters

The ESC and Childcare Tasters pilots (jointly referred to as ESC) were introduced in several LEAs in Great Britain, although the details vary slightly between England, Scotland and Wales (as implementation is a devolved issue). In England (the only districts under consideration in this report), the pilots were managed by LEAs in order to best meet local needs, working in close cooperation with Jobcentre Plus, schools and other stakeholders. This will inevitably mean that there will be considerable variation in the effective treatment across locations.

ESC pilots aim to improve the availability of affordable childcare for working parents. In England, each pilot has a Childcare Coordinator, employed by the LEA, who works with schools to create new childcare places. Childcare Partnership Managers from Jobcentre Plus provide the strategic link between Jobcentre Plus and LEAs. Childcare Coordinators and Childcare Partnership Managers work with Children's Information Services, providing up-to-date information on local childcare vacancies, including those in schools.

It is expected that this pilot will primarily help parents of school-age children (i.e. children aged five to 14, 16 for children with special needs), but the LEAs' remit also allows them to provide childcare for younger or older children if that would help lone parents into work. In addition, although this pilot is mainly aimed at helping lone parents who are ready to move into employment, in practice the services will be available to all parents in a particular LEA. Indeed, LEAs have a great deal of discretion over how to use the money that is given to them, so the services that a parent may receive will not be uniform between, or even within, local authorities. The aims of the pilots are the same in Wales and Scotland, although the institutional arrangements may be different.

ESC pilots are running from 1 April 2004 until 31 March 2006 in Bradford, Haringey and Lewisham LEAs in England, and from 1 October 2004 to 31 March 2006 in Leicestershire, Leicester, Greenwich and Sandwell LEAs in England, Fife and Aberdeenshire in Scotland, and Torfaen in Wales. These LEAs also run the Childcare Taster pilot, the aim of which is to help lone parents build trust and confidence in the

use of formal childcare. Childcare Tasters are also operating in some areas that are not operating an ESC pilot, but this is ignored during the empirical work (in other words, it was assumed that the Childcare Tasters pilot on its own would have negligible impact on the likelihood that lone parents in that area left benefit or found work). Some LEAs are smaller than the Jobcentre Plus districts that contain them: Haringey LEA comprises around 40 per cent of the North London Jobcentre Plus district, Lewisham LEA comprises around 40 per cent of the South-East London Jobcentre Plus district, Leicestershire and Leicester LEAs between them cover the Jobcentre Plus district of Leicestershire, Greenwich LEA covers a further 40 per cent of the South-East London Jobcentre Plus district, and Sandwell covers 60 per cent of the Dudley & Sandwell Jobcentre Plus district.

2.1.4 Extended Schools Quarterly Work Focused Interviews

In LEAs in which an ESC pilot is operating, there are mandatory Work Focused Interviews (WFIs) at quarterly intervals for lone parents whose youngest child is aged 12 or over, and who have been on IS/JSA for 12 months or more. Where Jobcentre Plus districts are larger than LEAs, ESQWFIs will only apply to lone parents living within the LEA. ESQWFIs were introduced in Bradford, Lewisham and Haringey in September 2004, and Leicester, Leicestershire, Sandwell and Greenwich in October 2004; they will end in all districts in April 2007.[2]

2.1.5 New Deal Plus for Lone Parents

At the end of April 2005, five Jobcentre Plus districts started offering ND+fLP in addition to the other LPP programmes that they were operating. These Jobcentre Plus districts were: Bradford, North London and South-East London (Phase 1); Leicestershire and Dudley & Sandwell (Phase 2). From October 2006, Cardiff & Vale and Edinburgh also began to offer ND+fLP services (although these districts do not form part of this report). The ND+fLP pilots are currently due to end in March 2008.

The aim of ND+fLP is to offer a coherent package of support to lone parents, with the pilots bringing together the main themes of the Work Focus, Work Incentives and Childcare strategies, and building on the lessons learned from the IB Pathway pilots.

---

[2] Lone parents claiming IS/JSA but not required to attend QWFIs are subject to the following WFI regime: for new or repeat claims, there is an initial interview, reviews at six and twelve months, followed by annual WFIs (i.e. at 24, 36, 48 months, etc.). For existing IS recipients, there is an initial interview, followed by annual WFIs. WFIs have been gradually extended to the stock of lone parents in receipt of IS/JSA through a phased rollout based on the age of the lone parent's youngest child. In practice, this means that lone parents eligible for QWFIs should receive WFIs six, 12, 15, 18, 21 (etc.) months after first claiming IS/JSA. Since October 2005, lone parents who have been claiming IS for 12 months or more with a youngest child aged 14 years or over have been required to attend an interview once every three months to help them prepare for the transition to work when their child reaches 16. This nationwide initiative will not be the subject of this project.

The range of services on offer includes: Work Search Premium, IWC, QWFIs (for LPs with children aged 12 or over), Childcare Tasters/Childcare Chats, ESC, Action Plans, Childcare Assist, Discovery Weeks, In-Work Emergencies Fund, Extra Administrative Support for PAs, Enhanced Training for LP PAs, More Voluntary Contact with LPs between WFIs, Additional CPM, Jobpoints in Children's Centres, Access to Flexible Provision, Marketing Package, In-Work Support.[3] Results from a qualitative evaluation of ND+fLP will be published in May 2007.

2.2 Overlaps between the policies

Table 2.1 summarises the programmes and defines the eligible population. The group potentially affected by the most policies comprises lone parents who have been on IS/JSA for at least 12 months and whose youngest child is aged at least 12.

Table 2.1 Summary of the programmes and the eligible population

	Who is potentially eligible? (the pilot group)	Under what conditions do they actually receive treatment?	Administered at what level?
IWC	Lone parents on IS or JSA for at least 12 months	Move off benefits and into work (that is expected to last at least five weeks)	Jobcentre Plus district
WSP	Lone parents on IS or JSA for at least 12 months	Join NDLP and agree to undertake job search activities	Jobcentre Plus district
ESC	Any parent in the area. Lone parents are targeted but not singled out	None	LEA
Childcare Taster	Taster weeks: lone parents and partners on NDLP or NDP Chats: any lone parents	Taster weeks: if PA recommends Chats: if PA recommends	LEA
ESQWFI	Lone parents on IS for at least 12 months whose youngest child is aged 12 or more in ESC areas	Automatic	Jobcentre Plus district
ND+fLP	Any lone parent meeting the conditions for joining NDLP	It is a voluntary programme	Jobcentre Plus district

Table 2.2 shows which Jobcentre Plus Districts and LEAs are operating which policies. The 'Phase' column of this table indicates which Phase each Jobcentre Plus district/LEA has been allocated to for the purposes of this evaluation: this is defined according to the date on which IWC was introduced in each district. As not all

[3] There is some variation in service provision between the districts offering ND+fLP: WSP is not being offered in North London; and there isn't an ESC pilot, nor are there ESQWFIs, in Edinburgh or Cardiff & Vale (see Table G.3 for more details).

policies are introduced at the same time within areas, Table 2.2 presents more accurate spatial and temporal overlaps.

Table 2.2 Spatial and temporal overlap of the lone parent pilots

Jobcentre Plus district	LEA in which Childcare Tasters/ESC runs	LEA as % of Jobcentre Plus district	IWC	WSP	ESC and ESQWFI	Childcare Tasters	ND+fLP	Phase
Bradford	Bradford	100	✓	✓	✓	✓	✓	1
North London	Haringey	40	✓		✓	✓	✓	1
SE London	Greenwich	40	✓	✓	✓	✓	✓	1
SE London	Lewisham	40	✓	✓	✓	✓	✓	1
Cardiff & Vale			✓	✓			✓	
Central London			✓			✓		2
Dudley & Sandwell	Sandwell	60	✓	✓	✓	✓	✓	2
Edinburgh, Lothian & Borders			✓	✓			✓	
Lancashire West			✓	✓				2
Leeds			✓			✓		2
Leicestershire	Leicester	60	✓	✓	✓	✓	✓	2
Leicestershire	Leicestershire	40	✓	✓	✓	✓	✓	2
Staffordshire			✓					2
West London			✓	✓		✓		2
Brent, Harrow & Hillingdon			✓					3
City & East London			✓					3
Lambeth, Southwark & Wandsworth			✓					3
South London			✓					3
Birmingham & Solihull						✓		
Forth Valley & Fife	Fife	100			✓	✓		
Glasgow						✓		
Grampian & Tayside	Aberdeenshire	30			✓	✓		
Liverpool						✓		
Oldham & Rochdale						✓		
SE Wales	Torfaen	30			✓	✓		

Notes: 'Phase' is assigned according to the date on which the IWC programme was introduced in each district: April 2004 for the Phase 1 districts, October 2004 for the Phase 2 districts and April 2005 for the Phase 3 districts. Note that other policies may have been introduced at a later date in some districts. See Table G.2 for more details. The Phase 4 districts (all in south-east England) are not included, as they will not be considered in this report. 'Phase' has been assigned by the authors according to the date on which the IWC pilot was introduced. Note that Phase 3 and Phase 4 are formally not considered to be pilot districts, but this project is examining the impact of IWC in these districts. The series 'LEA as per cent of Jobcentre Plus district' is the proportion of lone parents on IS in a particular district that live within the boundaries of the LEA.

2.3 Summary

This chapter has outlined the different policies being piloted as part of the LPPs.

It is the opinion of the researchers that the impact of the lone parent pilots will be dominated by the impact of IWC, which in principle substantially alters the financial gain to working for eligible lone parents (it also operates in more districts than the other policies, reaching around 45 per cent of lone parents on benefit for at least a year will live in districts offering IWC). It should be noted, though, that the analysis in this report does not attempt to estimate the additional impact of each policy: instead, it estimates an average impact of the lone parent pilots. In fact, this decision was made only after the size of the average impact estimates had been established: as will be seen in Chapter 5, the impact estimates are small and often insignificant, such that it would be extremely difficult to test for significant differences between estimates that are even less likely to be significant.

Furthermore, as explained in Chapter 4, the analysis will only consider the impact of the lone parent pilots operating in English Jobcentre Plus districts, because some of the data that will be used in the analysis (discussed in Chapter 4) is not available in a consistent form across Great Britain.

3 Aims of the research and methodology

This chapter is intended to set out the aims of the research project as a whole, and this report in particular. It also describes the methods used to estimate the impact of the lone parent pilots (LPPs).

Section 3.1 discusses the aims of this report and of the project as a whole; Section 3.2 outlines how estimating the impact of the LPPs relies on the choice of an appropriate comparison group, and Section 3.3 discusses the methodology in more detail, including the potential role for the testing of unobserved differences between pilot and comparison areas[4].

3.1 Aims of this report, and of the research project as a whole

The aim of this project is to estimate the short- and long-run impacts of the LPPs on the labour market outcomes of lone parents on Income Support (IS) or Jobseeker's Allowance (JSA) living in the pilot districts:

- the short-run estimates – presented for districts comprising Phases 1 to 3 of the LPPs in this report – will identify impacts on various labour market outcomes for individuals who have either never received payments of In Work Credit (IWC) and/or Work Search Premium (WSP) or who are still receiving payments.
- the long-run estimates – not considered in this report but due to be analysed in future reports – will estimate impacts on the same outcomes for individuals who are no longer receiving IWC or WSP payments.

---

[4] This means characteristics that are not recorded in data available to the researcher and that are likely to affect labour market outcomes.

The evaluation will also investigate whether the impact of the LPPs changes over time. It will not, however, discuss whether the results are informative about the impact of a national programme: this would require consideration of, amongst other matters, whether the impact of the LPPs in the districts currently operating them was a good indication of the impact of the LPPs in the districts currently not operating them, and whether there might be any general equilibrium effects that would reduce any impact of the pilots.

This report presents estimates of the short-run impact of being *potentially eligible* for the LPPs, by estimating their impact on the labour market outcomes of lone parents (living in the pilot districts) who have an IS/JSA claim that lasts in excess of 12 months. The estimates are based on benefit (work) outcome data covering the first two years (18 months) of the operation of the pilots in the Phase 1 districts, the first 18 months (12 months) in the Phase 2 districts, and the first 12 months (six months) in the Phase 3 districts.[5] The impact of the LPPs on lone parents living in Phase 4 districts are not considered in this report.

Information on whether individual lone parents actually participated in or benefited from the pilots was not made available to the authors in time to be utilised in this report; instead, the evaluation makes use of the fact that certain lone parents were *potentially eligible* for the pilots, and examines the impact of being *potentially eligible* on various labour market outcomes. This concept of being *potentially eligible* is fundamental to the evaluation: a lone parent is *potentially eligible* for the LPPs if they live in a pilot district and have been on IS/JSA for at least 12 months.[6] In the evaluation jargon, this means that this report presents estimates of the 'intention to treat' of the lone parent pilots. Chapter 4 of this report describes how this definition was implemented in practice, with more detail available in Appendix B.

Two further reports are planned:

- The next report will cover outcomes up to the end of April 2007, roughly 36 months after the Phase 1 pilots began, 30 months after the Phase 2 pilots began and 24 months after the Phase 3 pilots began. This report will be able to investigate the medium-run outcomes for some individuals who are no longer receiving IWC or WSP. It will also include some shorter-run analysis for the Phase 4 pilots (which started in October 2005).
- The final report will cover outcomes up to the end of October 2008, roughly 54 months after the Phase 1 pilots began, 48 months after the Phase 2 pilots began, 42 months after the Phase 3 pilots began and 36 months after the Phase 4 pilots began. This report will be able to investigate the medium- to long-run outcomes for some individuals in all pilot districts who are no longer receiving IWC or WSP.

---

5 See Table 2.2 for details of the districts (and policies) that are included in each Phase.

6 For Extended Schools Quarterly Work Focused Interviews (ESQWFIs), there are additional restrictions based on the child's age.

An additional, interim, report will be published in the Department for Work and Pensions (DWP) Working paper series later in 2007. This report will explore technical issues, including alternative ways of estimating the impact of the pilots.

It is also hoped that the range of outcomes under consideration in future reports will increase as the primary source of work and benefit data – the Work and Pensions Longitudinal Study (WPLS) – expands to include more sources of administrative data. For example, the planned inclusion of earnings data in the WPLS will potentially enable estimation of the long-run impact of IWC on earnings (this might work, for example, by increasing retention rates amongst lone parents, thus increasing their future bargaining power in the labour market).

The reports that follow will also have an additional aim:

- To partially estimate the impact of the **policy regime** on *all* lone parents in the pilot districts by examining the impact of the LPPs on *all* lone parents who claim IS/JSA (not just those whose claim exceeds 12 months).

In general, these two concepts – the impact of being potentially eligible and the impact of the policy regime – are different where individuals are able to influence the likelihood of becoming potentially eligible for the policy.

The concepts are different in the case of the LPPs, because lone parents can choose whether/how long to remain on IS/JSA. Theoretically, if they were aware of IWC or WSP, some lone parents on IS/JSA might delay leaving benefits until the duration of their claim exceeds 12 months in order to become potentially eligible for IWC or WSP; conversely, the prospect of having to attend Quarterly Work Focused Interviews (QWFIs) as part of the Extended Schools Childcare programme (ESQWFIs) may induce some lone parents to leave IS/JSA in the first 12 months when they might not have done so had they been unaware of ESQWFIs.

As a result of the potential for this type of behaviour, the effect of the policy regime as a whole might be different from the impact only on those who are potentially eligible. But the assessment of the impact of the policy regime (in future reports) will be partial, because it is not planned to investigate whether the LPPs induce lone parents to *start claiming* IS/JSA when they would not otherwise have done so, nor whether lone parents claiming IS/JSA move into pilot districts specifically in order to take advantage of the LPPs. This is primarily because such an evaluation would require information on all lone parents living in the LPP districts.

3.2 What responses to the pilots are predicted by economic theory?

Economic theory suggests the following responses to the lone parent pilots:

- For potentially eligible lone parents, IWC should make it more likely that a lone parent on IS/JSA leaves benefit to work at least 16 hours a week, because it makes jobs at any given hourly wage more attractive than they were in the absence of IWC. Economists would say that the IWC reduces the reservation wages of potentially-eligible lone parents, where the reservation wage is the lowest (gross) hourly wage that would induce a lone parent to move into work. However, IWC may induce a lone parent to leave IS/JSA for a job with lower earnings (as a result of fewer hours or a lower hourly wage) than they would otherwise have done so in the absence of IWC. Both of these effects will decline when an individual stops receiving IWC payments, but there may be some dynamic processes which act to offset this (such as returns to job tenure). In the absence of such dynamic effects, some lone parents may quit jobs as soon as they have received their 12 months of IWC payments, if they perceive that the financial gain to work without the IWC is insufficiently high to justify remaining in work.
- The theoretical impacts of WSP on potentially eligible lone parents are ambiguous. WSP payments increase the reward to not working, thereby raising each lone parent's reservation wage, and reducing flows off IS/JSA and into work. But receipt of WSP is conditional on the lone parent increasing their job search activity, which should increase the likelihood of the lone parent receiving an acceptable job offer, thereby increasing flows off IS/JSA and into work. Both of these effects should stop once an individual has received their six months of WSP payments. The increased search effort may lead to lone parents finding more suitable jobs, perhaps leading to increased employment durations and higher hourly wages.
- Both WSP and IWC should induce some lone parents who would otherwise have left IS/JSA within 12 months to remain on IS/JSA for longer, in order to be entitled to these additional payments. In the extreme, they may also induce lone parents who would otherwise not have claimed IS/JSA at all to claim IS/JSA and continue doing so for at least 12 months in order to become eligible for IWC/WSP. This report does not provide estimates of the size of these impacts (indeed, the approach described below implicitly assumes that these effects are negligible in size), but they will be considered in future reports.

- Extended Schools Childcare (ESC) pilots should increase parents' information about childcare opportunities and/or make it easier to access. This should increase the usage of formal childcare, perhaps at the expense of informal childcare. It is harder to predict what impact this may have on labour market outcomes. One of the policy justifications for ESC pilots is (presumably) that some lone parents have to use formal childcare in order to be able to work, meaning that expenditure on formal childcare acts like an additional tax on wages. This means that making affordable formal childcare easier to access would reduce lone parents' reservation wages, and make it more likely that a lone parent on IS/JSA leaves IS/JSA to work at least 16 hours a week (this is akin to a substitution effect). However, if the nature of the demand for childcare is more complicated than this, then other responses are possible.[7] The effects of ESC may persist after the end of the pilot, depending on how the Local Education Authority (LEA) has used the money (for example, investment in infrastructure may mean that any impacts persist after the money stops). In contrast to the IWC and WSP, all of the effects of ESC described above will also apply to parents who are not on IS/JSA and those who are already in work: for example, some parents already working might work for longer because affordable formal childcare is now easier to access, and some may work less now that they need to work for fewer hours to afford formal childcare, but this evaluation will not be able to estimate such effects because it is investigating the impact of the lone parent pilots only on lone parents who have been on benefit for at least 12 months.
- ESQWFIs should increase flows off IS/JSA and into work through various mechanisms that increase the likelihood of the lone parent receiving an acceptable job offer. They may also act as a deterrent, and lead to some lone parents leaving IS/JSA in under 12 months in order to avoid having a ESQWFI. Note that this effect is only relevant for lone parents with a youngest child aged 12 or above (as they are the only lone parents potentially eligible for this policy).

3.3 What outcome variables will be investigated?

The key outcomes of interest under consideration in this report are whether, at particular points in time, lone parents (who are potentially eligible for the LPPs) are more likely to have stopped claiming benefits, or are more likely to have started working, than lone parents who were not exposed to the pilots: this choice of outcomes is entirely dictated by the scope of the administrative data used in this evaluation (described in Chapter 4).

Chapter 4 provides more details of these outcomes. But three points should be stressed:

---

[7] See Brewer and Paull (2004) for more discussion of the nature of the demand for childcare.

- Rather than investigate whether a particular spell of IS/JSA has stopped, the analysis examines outcomes for *individuals*, taking full account of repeat benefit claims and repeated spells in work.
- This evaluation assesses the impact of the LPPs only on the ultimate policy outcomes: flow rates off benefits and/or movements into work. It will not investigate the impact on intermediate outcomes, such as the use of formal childcare, family incomes or poverty rates, nor on any indicators of adult or child wellbeing.
- The administrative data used in this evaluation limits the population whose outcomes can be measured to people who (at some point since June 1999) have claimed a DWP-administered benefit.[8] This means, for example, that it cannot provide any information on the impact of the LPPs on the lone parent employment rate, nor on the proportion of lone parents claiming IS/JSA.

These restrictions may mean that this evaluation does not lead to a complete understanding of why and how any impacts of the LPPs actually arise: the separately-commissioned qualitative work (the first report of which is due to be published in Spring 2007) will address these issues.

3.4 The populations of interest

This report distinguishes between two groups of lone parents:

- Lone parents who have been claiming IS/JSA continuously for at least 12 months when the pilots are introduced in their district. This group is potentially eligible for the LPPs on the day that the pilots start. This group is referred to as the **stock** sample.
- Lone parents who have been claiming IS/JSA for less than 12 months (or who have not yet made a claim for IS/JSA at all) when the pilots are introduced in their district. This group is referred to as the **flow** sample. These individuals may become potentially eligible for the pilots if they stay on IS/JSA long enough. In theory, their behaviour whilst on IS/JSA may be affected by the introduction of the LPPs' policy regime even before their claim reaches 12 months, but this possibility is disregarded for the purposes of this report (it will be explicitly considered in future reports).

Of course, lone parents do move between pilot and non-pilot districts during the period of interest, and this is taken into account when constructing the samples for analysis (see Section 4.2 and Appendix B for more details).

The estimate of long-run impact of the LPPs can only be made using the flow sample, because, in the long run, the stock sample will all leave IS/JSA, and the only lone

[8] See Chapter 4 for more details.

parents eligible for the pilots will be those from the flow sample (ie those who have started a claim of IS/JSA after the LPPs began). In the short-run, though, given the relatively low off-flow rates from benefits (and the relatively low in-flow rates into work) – see Chapter 5 for more details – it is likely that the analysis will provide a more accurate estimate of the impact of the pilots on the stock than on the flow sample, simply because there are many more individuals in the stock.

3.5 Estimating the impact of the lone parent pilots: identifying the counterfactual using a comparison group of lone parents

3.5.1 Choosing a comparison group to provide a counter-factual

Identifying the impact of being potentially eligible for the LPPs (or of the LPPs policy regime more generally) requires the following key question to be answered: how different would the outcomes of lone parents living in the pilot districts have been if they had not had access to the pilots? This is called the 'counterfactual'.

If outcomes were available for lone parents living in the pilot districts had they not been potentially eligible for the pilots, then there would be no evaluation problem. But given that at any moment in time, everyone is either living in the pilot districts (i.e. potentially eligible) or not, but can never be in both situations at once, there is an obvious 'missing data' problem. Thus, constructing the counterfactual is the central issue that most evaluations face.[9]

This issue can be addressed with an appropriate comparison or comparison group from the set of IS/JSA customers who were not affected by the pilots. Such a group needs to be *as similar as possible* to the pilot group (to those lone parents whose IS/JSA claim made them potentially eligible for the pilots), as the purpose of the comparison group is to provide a guide to the outcomes that lone parents in the pilot group would have achieved had they not been affected by the pilots. Given this, it is then possible to isolate the impact of the pilots on these outcomes.

Three potential comparison groups are:

- lone parents (who have been claiming IS/JSA for at least 12 months) living in districts not affected by the LPPs;
- non-lone parents (who have been claiming IS/JSA for at least 12 months) living in districts that are affected by the LPPs;[10]

---

[9] See Blundell and Costa Dias (2000) for more on this.

[10] These non-lone parents could be either individuals living as part of a two-parent family, or single individuals without children. Clearly, such individuals differ in important respects from lone parents, and in ways that are likely to affect the likelihood of being able to find work and/or leave benefits.

- lone parents in districts affected by the LPPs but who are not yet potentially eligible (i.e. lone parents in the LPP districts who have been on IS/JSA for less than 12 months).

In practice, the comparison group needs to be one that can be identified in the administrative data, so it has to be a group that claims a DWP-administered benefit. One can think of potential comparison groups who were not claiming IS/JSA, but individuals in the comparison group need to be as similar as possible to individuals in the pilot group, and whether a person is claiming IS/JSA is clearly an important difference that is likely to impact on future labour market outcomes. The comparison group preferred by the authors is the first outlined above: lone parents who have been claiming IS/JSA for at least 12 months but who do not live in LPP districts.

Non-lone parents are likely to differ from lone parents in their propensity to leave benefits and move into work in many ways, some of which may be due to characteristics that cannot be observed. This causes difficulties in trying to use a group of non-lone parents to act as a guide to how lone parents would have acted in the absence of the LPPs, so the second group outlined above is not very attractive.

It is the authors' view that it is not appropriate to use the third group described above (lone parents in the LPP districts who leave IS/JSA in under 12 months) as a comparison group, as such individuals may be affected by the LPP policy regime. In particular:

- they will be eligible for ESC services;
- their behaviour whilst on IS/JSA will be unaffected by the existence of IWC/WSP only if they do not realise that they may become eligible for IWC and/or WSP in the future (or if they did realise this, but did not take it into account when making decisions about looking for work whilst on benefits). Indeed, it is precisely because such lone parents are affected by the LPP policy regime that the evaluation will investigate (in future reports) the impact of the LPPs on all lone parents on IS/JSA, not just those on IS/JSA for at least 12 months.

3.5.2 Testing for unobserved differences between pilot and comparison districts

The drawback of using this first comparison group is that if there are characteristics of the neighbourhoods in which lone parents live (or characteristics of the lone parents themselves that differ across districts) that are important determinants of labour market outcomes, but that cannot be controlled for (i.e. that are unobservable to the researcher), then the evaluation may attribute an effect to the LPPs that is in reality due to unobserved differences between the pilot and comparison groups.

This possibility is exacerbated by the fact that the pilot districts were chosen for having particularly high lone parent shares in the IS caseload, and particularly low off-flow rates from IS. However, the estimates will control for a large number of neighbourhood characteristics that are relevant to the likelihood of whether an

individual works or claims benefits in order to substantially reduce (or eliminate) the possibility that there are unobserved neighbourhood characteristics that determine labour market outcomes. (See Chapter 4 for more details about the local-area characteristics that are controlled for.)

Tests were therefore carried out to determine whether such unobserved differences across districts were likely to be problematic for this evaluation: these tests are equivalent to estimating the impact of a hypothetical set of lone parent pilots during a period where no such pilots existed (see Appendix J for more details). The results of such tests suggest that there were unobserved differences in some labour market outcomes (across phases, and in both the stock and flow samples). This indicates that simply comparing the labour market outcomes of lone parents living in the pilot and comparison districts is not sufficient to obtain an unbiased estimate of the impact of the LPPs.

However, if one is prepared to assume that these unobserved differences are changing in the same way over time across all districts (the 'common trends' assumption: this might mean, for example, that the level – the local unemployment rate – is different, but that the trend – the change in unemployment over time - is the same), then the impact of the LPPs can be estimated using a difference-in-differences (DiD) estimator. This is the path taken in this evaluation.

A DiD estimator can be implemented using either linear methods (Ordinary Least Squares (OLS) or Fully Interacted Linear Matching (FILM)), or Propensity Score Matching (PSM) techniques.[11] Due to computational time constraints, only the results from linear DiD estimators are given in this report. To implement DiD using OLS/FILM, three dummy variables are required: the first indicates whether the individual lives in a pilot or comparison district; the second indicates whether the outcome in question is observed before or after the LPPs were introduced; the third is an interaction of the first two dummy variables (taking value 1 if the individual lives in the pilot district and has an outcome observed after the LPPs have started; 0 otherwise). It is this third dummy variable that provides the estimate of the impact of the LPPs (see Box 3.1 for details).

---

[11] See Appendix I for more details. To implement DiD using PSM, each potentially eligible lone parent in a pilot district is matched with three others: a lone parent who has been claiming IS/JSA for at least 12 months and who lives in a control district; a lone parent who has been claiming IS/JSA for at least 12 months and who lives in a pilot district before the pilots began; and a lone parent who has been claiming IS/JSA for at least 12 months and who lives in a control district before the LPPs began. See section III.2 of Blundell *et al.* (2001), and Dearden *et al.* (2001) for some examples of conditional (i.e. controlling for background characteristics) DiD estimators using PSM.

Box 3.1 The DiD estimators

An alternative way of describing the DiD estimator is as follows.

	Before policy		After policy	
	Comparison districts	**Pilot districts**	**Comparison districts**	**Pilot districts**
Lone parents	B^0	A^0	B^1	A^1

If the Letters A and B refer to the mean (average) outcome for the group in question, having controlled for differences in observable characteristics, then the DiD estimator is given by $(A^1 – A^0) – (B^1 – B^0)$. This is the trend in the pilot districts minus the trend in the comparison districts.

There are two main disadvantages of using a DiD estimator.

First, by considering changes over time (rather than levels), the precision of estimates typically worsens, i.e. the size of the standard errors increases. This makes it more difficult to obtain reliable results, which may be particularly relevant if the impact estimates are small.

Second, it is hard to evaluate medium- to long-run outcomes using a difference-in-difference estimator because one is more constrained (than with other estimators) by the period covered by the data. Although this issue will not become relevant until future reports in this project, it is discussed more in Chapter 4, after the data used in this project has been described.

4 Constructing a sample of interest from the administrative data

This chapter describes how the final dataset used in the analysis was constructed.

Section 4.1 gives an overview of the variables used in the analysis, and their original sources, as well as the process followed to construct the final dataset.

Section 4.2 describes how the sample of individuals (or Income Support (IS) claims) potentially affected by the lone parent pilots (LPPs) was constructed. Chapter 4 concludes by summarising some of the limitations of the data.

Much of the detail is contained in various Appendices, referred to in the text.

4.1 Overview

This section lists the datasets that were used (and the process that was followed) to construct the final dataset used in this evaluation.

The six datasets that were used (together with the acronym or phrase that is used to refer to them) are:

- The Work and Pensions Longitudinal Study (WPLS): the WPLS combines employment (or, more accurately, income tax) records from Her Majesty's Revenue and Customs (HMRC), with a range of programme and benefit spells from the Department for Work and Pensions (DWP).
- The National Benefits Database (NBD): the NBD contains more details of the benefit records that appear in the WPLS (for example, information concerning amount of benefit received at the start of the claim).

- The Income Support History file (IS History file): the IS History file records all changes in personal circumstances that occur during an Income Support (IS) claim; for example, changes in partner status, changes in the number of children for which the claimant is responsible, the date of birth of their youngest child, disability status, postcode, etc.
- Key Statistics from Census 2001, plus a bespoke tabulation, courtesy of the Office for National Statistics (Census).
- Office for Standards in Education (Ofsted) data on registered child-carers in England (Ofsted).[12]
- The 2004 Index of Multiple Deprivation (IMD), containing data from 2002.
- Travel-to-Work Area (TTWA) data on unemployment and vacancy rates from NOMIS, for the financial year 2002-03.

The data-set used for the empirical work was created in several stages:

First, the IS History file and the WPLS were used to create a set of benefit claims that were potentially affected by the LPPs: this is discussed further in Section 4.2.[13]

For the estimates of the impact of the LPPs to be valid, the difference-in-differences (DiD) estimator needs to control for all characteristics that might affect the outcomes of interest, including factors that might affect lone parents' ability and willingness to return to work. In the case of linear regression methods (either Ordinary Least Squares (OLS) or Fully Interacted Linear Matching (FILM)), these characteristics make up the 'explanatory' or 'right-hand-side' variables.[14] The final dataset therefore includes a large set of background characteristics that will be used in the analysis (full details of which can be found in Appendix F).

---

[12] Note that only pilot and control districts in England are being used to estimate the impact of the LPPs in this report: the impact of the LPPs in Scotland and Wales will be analysed separately at a later date. This is partly because the data on child-carers is available differentially across England, Scotland and Wales.

[13] Almost no individuals had more than one benefit claim that was potentially eligible by the lone parent pilots in the period under investigation in this report (and the analysis effectively pretends that any such claims were made by different people), although this will become more likely in the data analysed in subsequent reports.

[14] In the case of propensity score matching (PSM) techniques, these are the variables that are included in the first-stage regression (of whether an individual lives in a pilot district) that is used to generate the propensity score (i.e. they are the variables on which individuals in the pilot and control groups are 'matched', or made to look similar). Note, however, that PSM techniques will not be used in this report, due to time constraints.

These variables are:

- A set of benefit and work history variables derived from the WPLS covering the period 1-30 months before the individual first became potentially eligible for the LPPs. The creation of these variables is discussed further in Appendix C and D.
- A set of background characteristics from the WPLS/NBD: age, gender and ethnicity of the claimant (from the WPLS); amount of benefit (from the NBD). All of these variables (except ethnicity) were recorded at the start of the claim.
- A set of variables from the IS History file: age of youngest child and number of children (recorded at the time at which the individual first became potentially eligible for the LPPs).
- A set of local-area variables derived from several sources (and described in Appendix E). Because relatively little information about individual characteristics is available from the WPLS and the NBD, it is a key feature of the evaluation that local area variables are merged into the final dataset. Some variables are included because they provide information about some aspect of the local labour market that is likely to affect whether lone parents are able to find work and/or leave benefits (for example, the local unemployment rate); others are included to proxy for certain characteristics (for example, highest educational qualification) that are unavailable at the individual level, but that are likely to be important determinants of lone parents' labour market outcomes. This is done by including the average level of the characteristic for all individuals living in a small neighbourhood, typically Super Output Area (SOA) level, comprising approximately 1,500 households. These variables were mapped into the sample of benefit claims (described below) on the basis of the individual's postcode at the time they first became potentially eligible for the LPPs.

It should be stressed that the authors consider that there is a high degree of noise in the measure of work in the WPLS. The employment records in the WPLS are based on employers' returns to HMRC for individuals they are employing who are earning enough to be liable for Income Tax or National Insurance. This means that it may not include individuals who are in work, but earning below the personal threshold (although the received wisdom is that many, mainly large, employers do report such spells of work), nor other spells of work that have not been declared to HMRC. For this reason, the data may underestimate the amount of time spent in work. However, there is a general feeling that the way in which uncertain start and end dates are recorded may lead to an overestimate of the amount of time spent in work if all dates in the WPLS are taken at face value. Adjustments made to the WPLS are discussed in Appendix C.

4.2 The sample of benefit claims potentially affected by the lone parent pilots

The sample of IS/Jobseeker's Allowance (JSA) claims used in this evaluation will be of at least 12 months in length (including in combination, if relevant), and will be made by lone parents who live in either a pilot district or a comparison district. Further details of exactly how this sample was selected can be found in Appendix B.

This report focuses on the impact of the LPPs in the first three phases of the LPPs in England (see Chapter 2 for more details). The pilot districts therefore comprise:

- Phase 1: Bradford; North London; South East London.
- Phase 2: Dudley & Sandwell; Lancashire West; Leicestershire; Leeds; Staffordshire; Central London; West London.
- Phase 3: Brent, Harrow & Hillingdon; City & East London; Lambeth, Southwark & Wandsworth; South London.

The comparison districts comprise all districts in England that will be operating neither the LPPs (this rules out those districts in South-East England that make up Phase 4 – see Chapter 2 for more details), nor the Employment Retention and Advancement (ERA) demonstration. The exception is that districts that are only operating the Childcare Taster pilots (Birmingham & Solihull, Liverpool, and Oldham & Rochdale) have been included in the comparison districts for the purposes of this evaluation, because the impact of these pilots alone is likely to be minimal.[15]

Individuals whose IS/JSA claims are included in the analysis will therefore have lived in one of these districts at some point whilst the pilots were in operation.

This report is considering outcomes only for individuals whose IS/JSA claim exceeds 12 months: this is equivalent to assuming that there are no 'anticipatory' effects of In-Work Credit (IWC) or Work Search Premium (WSP) on IS/JSA claims that have *not yet* reached 12 months; it also means that the potential impact of Extended Schools Childcare (ESC) or Childcare Taster on IS/JSA claims that have not yet reached 12

---

[15] The control districts are therefore: Derbyshire, Lincolnshire, Northamptonshire, North Nottinghamshire, Greater Nottingham, Cambridgeshire, Norfolk, Suffolk, Northumberland, Newcastle & North Tyne, Gateshead & South Tyne, City of Sunderland, County Durham, Tees Valley, Cumbria, Cheshire, Lancashire East, Knowsley & Sefton, Wirral, Liverpool, St Helens & Halton, Manchester, Salford & Trafford, Stockport & Tameside, Bolton & Bury, Wigan, Oldham & Rochdale, Cornwall, Devonshire, Dorset, Gloucestershire, West of England, Somerset, Wiltshire, Birmingham & Solihull, Wolverhampton & Walsall, Coventry & Warwickshire, Herefordshire & Worcestershire, Shropshire, North Yorkshire, Hull & East Riding, South Humber, Calderdale & Kirklees, Wakefield, Sheffield, Barnsley & Rotherham, and Doncaster.

months is not estimated (although such lone parents are potentially eligible for these programmes). The impact of the LPPs on *all* individuals claiming IS/JSA will be estimated in future reports.

As this evaluation is making use of a DiD estimator, it is necessary to measure outcomes (and background characteristics) for individuals in the pilot and comparison districts both following the introduction of the real lone parent pilots, and over the same period following the introduction of a hypothetical policy at some point in the past.

Benefit outcomes are available in the WPLS from mid-1999 to 31 March 2006; work outcomes are available from mid-1999 to 30 September 2005. This means that benefit outcomes can be measured for up to two years following the introduction of the LPPs for the Phase 1 districts, and work outcomes for up to 18 months afterwards.

To implement the DiD estimator, it is necessary to choose a date on which a hypothetical programme is deemed to have started. This date is to some extent arbitrary, but there are two constraints:

- The date must be sufficiently far in the past so that the outcomes under investigation are not affected by the actual LPPs. In this report, data was available on outcomes up to two years after the actual lone parent pilots began, and so the hypothetical programme has to begin on or before 1 April 2002, two years before the Phase 1 pilots began.
- Because the analysis uses information on individuals' work and benefit histories in the 30 months before becoming eligible to the (hypothetical or real) lone parent pilots, the date of the hypothetical programme must be at least 30 months after the start of the WPLS (1 June 1999). This means that the hypothetical programme has to begin no earlier than 1 January 2002 (of course, the analysis could have used information on a shorter period of previous benefit and work histories than 30 months).

Another way of understanding this is to realise that, when using a DiD estimator, there is a direct trade-off between the length of benefit and work histories that are used in the analysis as explanatory factors, and the length of time after the pilots began over which outcomes are analysed. This is an important disadvantage of DiD estimators.

In this analysis, it was assumed that the hypothetical pilots were introduced in all three Phases in April 2002.

As outlined in Section 3.1.3, two samples are analysed in this evaluation:

- The **stock sample**: includes all IS/JSA claims being made by lone parents living in one of the pilot districts whose duration equals or exceeds 12 months at the point at which the LPPs began: these claims were potentially affected by the pilots from the day they were introduced.[16]
- The **flow sample**: includes all IS/JSA claims being made by lone parents living in one of the pilot districts whose duration equals or exceeds 12 months at some point between 1 April 2004 and 30 September 2005 (the 'inflow window'). This means that a lone parent whose IS/JSA claim exceeds 12 months and who moves into one of the pilot districts between 1 April 2004 and 30 September 2005 is included in the pilot group of the flow sample; as is an individual who has been claiming IS/JSA for at least 12 months, has always lived in a pilot district and has children, but who becomes a lone parent during this period.

The same conditions apply to the creation of the stock and flow samples associated with the hypothetical pilots, with the period 1 April 2002 to 30 September 2003 representing the inflow window for the flow sample.

Table 4.1 gives the number of IS/JSA claims potentially eligible for the lone parent pilots (the sample sizes for the hypothetical pilots are given in Appendix J). Note that there are three different comparison samples for the stock sample: the comparison sample for the Phase 1 stock sample comprises all lone parents in comparison districts on IS/JSA for at least 12 months on 1 April 2004; the comparison sample for the Phase 2 stock sample comprises all lone parents in comparison districts on IS/JSA for at least 12 months on 24 October 2004, and the comparison sample for the Phase 3 stock sample comprises all lone parents in comparison districts on IS/JSA for at least 12 months on 4 April 2005. On the other hand, the comparison sample for flow sample comprises all lone parents whose claim for IS/JSA reached 12 months after 1 April 2004 and who were living in a comparison district at the time.

Table 4.1 Sample sizes for LPPs (introduced from 1 April 2004)

				Comparison Districts		
	Phase 1	**Phase 2**	**Phase 3**	**1**	**2**	**3**
Stock	42,374	77,290	71,705	299,469	292,344	285,134
Flow	14,480	16,928	7,152		109,163	

[16] When measuring 'duration', past spells of JSA that finish immediately before an IS spell are included, as described in Appendix B. But spells of JSA that begin just after an IS spell ends are not included (nor are JSA spells that last 12 months or longer with no accompanying IS spell), because the WPLS does not identify whether individuals on JSA were lone parents.

It is possible for an individual to have more than one benefit claim potentially affected by the LPPs, but, for simplicity, only the first such spell has been included in each sample. The analysis also does not make use of the fact that some individuals stop being eligible for the LPPs if they move from a pilot into a comparison district, if they are no longer responsible for a child, or if they start to cohabit. This means that the sample of IS claims in the treatment samples comprise those lone parents whose claims have ever been potentially eligible to the lone parent pilots, rather than those lone parents whose claims were potentially eligible on any given date.

Full details of how the samples were constructed are given in Appendix B.

4.3 Summary

This chapter has described how the final dataset used in the analysis was constructed. For completeness, this section summarises the limitations of this.

As with most administrative datasets, the WPLS, IS History file and NBD do not contain many personal characteristics. In estimating the impact of the LPPs, it is important to control for all factors that are likely to affect a lone parent's ability and/or willingness to find work. If these characteristics cannot be measured at an individual level, or be proxied for by using local-area level data, then this may bias the results.

One of the background characteristics that can be controlled for is previous labour market history: for 30 months prior to the individual becoming potentially eligible to the LPPs in this report. Because the presence of unobserved differences between districts (see Appendix J for details) necessitates the use of a DiD estimator, the availability of outcome data from the WPLS will be an important constraint on future analysis. There is a direct trade-off between the length of benefit and work histories that are used in the analysis as explanatory factors, and the length of time after the pilots began over which outcomes are analysed. This is an important disadvantage of DiD estimators, and will be addressed in future reports.

A final limitation of the data used in this report is that it only contains benefit outcomes up to 31 March 2006 and work outcomes up to 30 September 2005. This means that all of the impacts estimated in this report are of a relatively short-run nature, and that the analysis is of only the first 12 months (Phase 3 districts) or 24 months (Phase 1 districts) of the operation of the lone parent pilots.

5 The additional impact of the lone parent pilots on work and benefit receipt

This chapter presents analysis of the key outcomes after the lone parent pilots (LPPs) were implemented.

Section 5.1 discusses the results of comparing labour market outcomes in the pilot and comparison districts after the pilots started, but without adjusting for any background characteristics.

Section 5.2 discusses the rate of take-up of or participation in the In-Work Credit (IWC) programme. This is of interest because some measures of take-up give the theoretical upper bound to the additional impact of the lone parent pilots on labour market outcomes; furthermore, knowing what fraction of lone parents actually received IWC helps the estimated impacts to be understood better.

Section 5.3 presents the main estimates of the impact of the pilots, based on difference-in-difference (DiD) estimates.

Section 5.4 investigates whether the impact of the pilots varied across districts and between different types of lone parents, and Section 5.5 summaries the results presented in this chapter.

5.1 Key outcomes for lone parents affected by the lone parent pilots

This section discusses the results of comparing benefit and work outcomes in the pilot and comparison districts after the pilots started, without adjusting for any background characteristics.

The full analysis is presented in Appendix M, which illustrates the proportions of potentially eligible lone parents in the stock and flow samples who are in work or

have left benefits at various points in time, all measured relative to the date at which they became potentially eligible for IWC.

The key points are that:

- Individuals in pilot districts are slower to leave benefits and spend less time in work than those in comparison districts.
- Individuals in the flow sample leave benefits more quickly and spend more time in work than those in the stock sample.
- Two years before first becoming eligible for the LPPs (usually 12 months before starting the relevant Income Support (IS)/Jobseeker's Allowance (JSA) claim), between 27 per cent and 32 per cent of individuals in the flow sample are recorded as being in work, and between 40 per cent and 45 per cent are claiming benefits. At the same point in time, approximately 15 per cent of individuals in the stock samples are recorded as being in work, while almost 90 per cent are claiming benefits.
- On the date that individuals first become eligible for the LPPs, between 11 per cent (of the stock) and 21 per cent (of the flow) are recorded as being in work. Although it is possible to be both in work and receiving IS, this proportion seems rather high.
- After 12 months, between 14 per cent and 20 per cent of the flow sample have left benefits. Between 20 per cent and 26 per cent are in work: this is an increase of less than five percentage points from the point at which the LPPs were introduced.
- After 12 months, between nine per cent and 14 per cent of the stock sample have left benefits. Between 14 per cent and 18 per cent are in work: an increase of less than six percentage points from the point at which the LPPs were introduced.

The last two points suggest that, although the work measure in the Work and Pensions Longitudinal Study (WPLS) may not be an accurate guide to the proportion of lone parents actually in work, changes over time may be more accurate.

5.2 Participation in (or take-up of) In Work Credit

This section presents a number of different ways of looking at the extent of participation in the IWC programme.[17] A significant issue in estimating a take-up

[17] This section focuses on IWC partly because it was expected that the impact of the lone parent pilots would be dominated by the impact of IWC, but also because administrative data held by Department for Work and Pensions (DWP) showed that participation in Work Search Premium (WSP) and Childcare Taster were both extremely low. It is not possible to define a participation measure for the services offered through an Extended Schools Childcare (ESC) pilot.

rate is defining and recording in the WPLS the relevant population of lone parents eligible to receive IWC. It provides estimates of participation or take-up rates using three different definitions. These are:

i. Number receiving IWC as a percentage of the number of potentially eligible lone parents (where, as in the rest of this report, potentially eligible means a lone parent on IS or JSA for at least 12 months, and who lives in a pilot district).

ii. Number receiving IWC as a percentage of the number of potentially eligible lone parents (defined as above) who left benefit.

iii. Number receiving IWC as a percentage of the number of potentially eligible lone parents (defined as above) who left benefit and started a job (as recorded in the WPLS).

At the time this report was written, the evaluation team did not have access to individual-level data on receipt of IWC but only data on the total number of IWC recipients, and the number of new IWC payments, by district and by month.[18] Future reports will use individual level data on receipt of IWC in combination with the main data extract from the WPLS.

To be genuinely entitled to IWC, a lone parent has to be potentially eligible, and then leave benefit and start a job of at least 16 hours per week (as described in Chapter 2). This means that definition (iii) is the closest to a genuine measure of take-up. However, because of the limitations of the measure of work in the WPLS (see Appendices C and D for more details), as shown below, this estimate of IWC take-up exceeds 100 per cent. In theory, this could occur either because some lone parents are receiving IWC when they genuinely do not meet the conditions, or because some lone parents have genuinely met the conditions for receiving IWC, but this is not being reflected in the WPLS. This latter situation will occur if, for example, a job start date has been incorrectly recorded in the WPLS, or if a lone parent receiving IWC has taken a job earning less than the personal allowance (which may not appear in the WPLS).

Because of this problem in identifying (in the WPLS) lone parents who have met all of the conditions necessary for receipt of IWC, the other two measures of take-up use a broader definition of eligibility; by construction, these will have lower estimated take-up rates. Measure (ii) requires that the lone parent is recorded in the WPLS as leaving benefit, but does not necessarily have an entry for a new job. One downside of this measure is that lone parents will leave benefit for reasons other than moving into jobs of at least 16 hours a week, and so this measure of participation should always be lower than 100 per cent.

---

[18] The data on the numbers receiving IWC included some partners who are also eligible for IWC. However, the overwhelming majority of IWC recipients are lone parents.

Measure (i) compares the numbers receiving IWC to the total population who could receive IWC were they to leave benefit and start a job of at least 16 hours. This measure is of interest partly because it provides a theoretical upper-bound to the additional impact of IWC on the proportion of lone parents who leave benefit or move into work: if none of the lone parents receiving IWC would have left benefit in the absence of the IWC, then the additional impact of IWC would be equal to this measure. In reality, though, it is likely that many of the lone parents receiving IWC would have left benefit in the absence of the IWC, which is why this measure of take-up is an upper bound.

Box 5.1 describes in detail how the WPLS is used to construct the denominator for these three series.

Box 5.1 Estimating the number of lone parents eligible for IWC using the WPLS

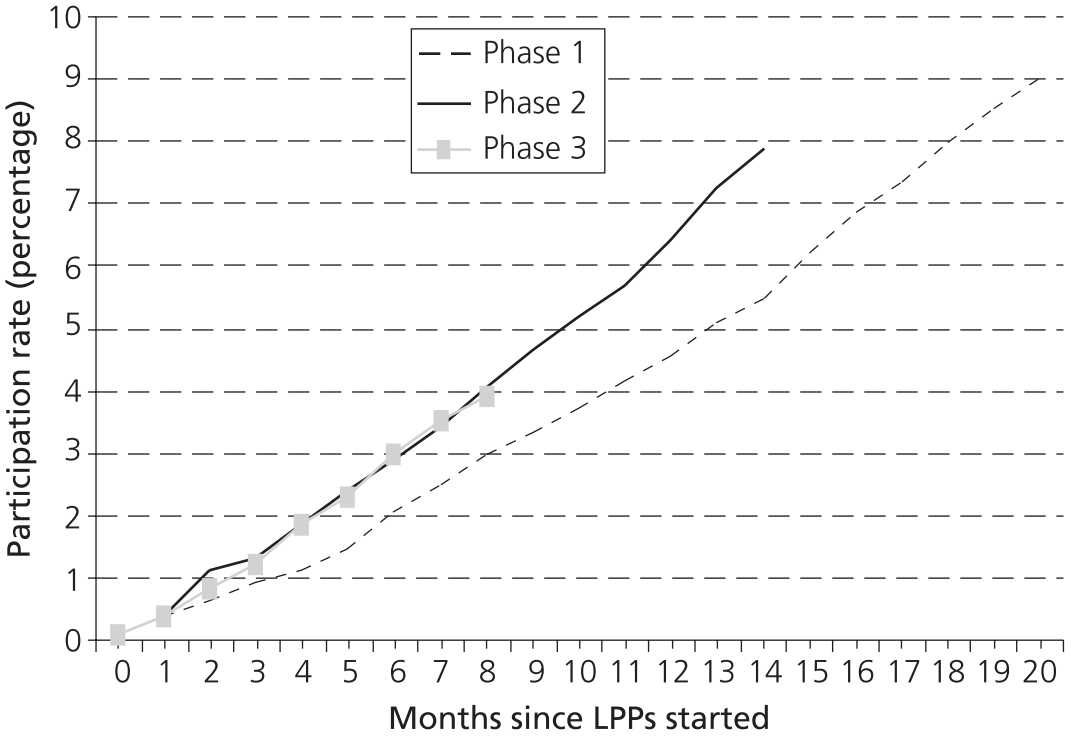
A take-up rate of IWC can be estimated by dividing the number of new IWC claims by the number of lone parents who appear to be eligible to start an IWC claim.

To use the WPLS to estimate the number of lone parents who appear to be eligible for IWC, one needs to count the number of lone parents who were at some point potentially eligible for IWC and who have stopped claiming benefits; this is done for each month and each Jobcentre Plus district since the LPPs started (this is the series used in Figure 5.10). To construct an estimate of those lone parents who leave benefit for work, one needs to additionally look for jobs that started within 90 days of the lone parent ceasing to receive benefits.

It should be noted that the way that these measures were constructed mean that both will slightly over-estimate the number of lone parents who are truly eligible to IWC, and, therefore, under-estimate the participation rate. This is because the data used for the analysis in this report did not include information on whether a lone parent who becomes eligible for the lone parent pilots ever ceased to be eligible by moving out of the district, or by ceasing to be a lone parent. In other words, there is an implicit assumption that, once an individual becomes potentially eligible for the LPPs, they remain potentially eligible until they stop claiming benefits.

For the analysis in Figure 5.1, a running total of the number of lone parents who were ever potentially eligible for the IWC was constructed and compared with a cumulative total of the number of lone parents who had ever received IWC: there should be no bias in these estimates.

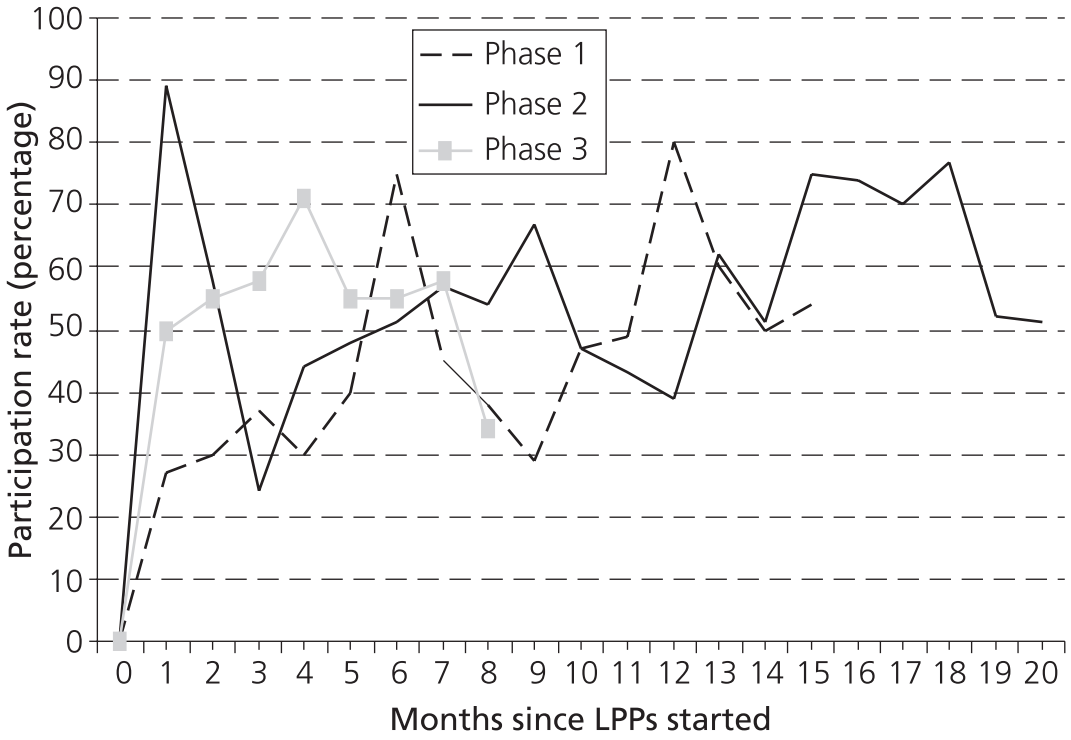
Figure 5.1 Participation measure (i): recipients of IWC as fraction of all lone parents ever potentially eligible, by Phase and month since LPPs started



Source: Numerator (number of new IWC payments): data provided by DWP. Denominator: authors' calculations based on WPLS.

Note: Figure shows number of lone parents who begin to receive IWC as a fraction of the number of lone parents who were potentially eligible to IWC and left benefit in each month, by Phase. Latest data on IWC receipts was November 2005.

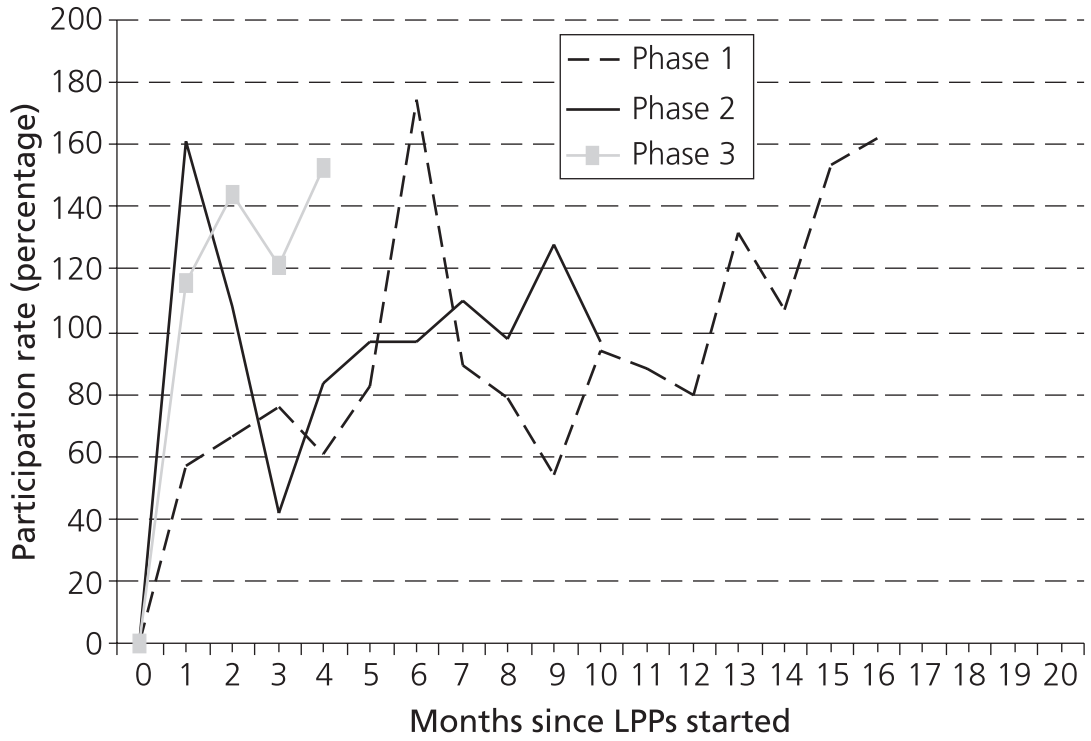
Figure 5.2 Participation measure (ii): new recipients of IWC as fraction of all lone parents potentially eligible who left benefit, by Phase and month since LPPs started



Source: Numerator (number of new IWC payments): data provided by DWP. Denominator: authors' calculations based on WPLS.

Note: Figure shows number of lone parents who begin to receive IWC as a fraction of the number of lone parents who were potentially eligible to IWC and left benefit in each month, by Phase. Latest data on IWC receipts was November 2005.

Figure 5.3 Participation measure (iii): new recipients of IWC as fraction of all lone parents potentially eligible who left benefit and started a job, by Phase and month since LPPs started



Source: Numerator (number of new IWC payments): data provided by DWP. Denominator: authors' calculations based on WPLS.

Note: Figure shows number of lone parents who begin to receive IWC as a fraction of the number of lone parents who were potentially eligible to IWC and left benefit in each month, by Phase. Latest data on IWC receipts was November 2005. Latest data on job starts was July 2005.

Figures 5.1, 5.2 and 5.3 show that:

First, the number of IWC recipients as a proportion of the potentially eligible population has increased over time, and was still on a clear upward trend in November 2005, 20 months after the pilots had started in the Phase 1 districts. In the long-run, this ratio should remain constant, so Figure 5.1 suggests that IWC is still not operating to its full potential in the Phase 1 districts even by November 2005. This might reflect delays in lone parents discovering that they are potentially eligible for IWC, or delays in the ability of Jobcentre Plus staff to market IWC effectively: the data here cannot distinguish between these or alternative explanations. Because this participation rate provides a theoretical upper bound to the impact of the IWC, Figure 5.1 suggests that this impact may also be rising over time, and may be continuing to rise even after 20 months of operation in the Phase 1 districts.

Second, the participation rate varies across the Phases (and more so between the districts, not shown here), with Phase 1 having lower participation rates than Phases 2 and 3. It is, though, not easy to interpret this finding: it could reflect differential performance of Jobcentre Plus staff, or that it took longer in the Phase 1 districts for staff and customers to become aware of IWC (one way of interpreting Figure 5.1 is that the Phase 1 districts have a participation rate that is about three – four months behind the Phase 2 districts: in other words, after 12 months, the Phase 2 districts had a participation rate that the Phase 1 districts achieved after 15 months). On the other hand, this disparity could reflect differences in local labour markets, or in the characteristics of lone parents in the districts in the various Phases: given that potentially eligible lone parents in the Phase 1 districts were less likely to leave benefit than those in the Phase 2 districts in the absence of the lone parent pilots, one should not be too surprised to see that participation in IWC as a proportion of all potentially eligible lone parents also varies across Phases.

Third, on average, the number of new IWC claims each month is around half the number of potentially eligible lone parents who leave benefit (Figure 5.2), but there is variation over time and between Phases. Take-up under this measure has a slight upward trend, consistent with potentially eligible lone parents who left benefit early in the pilots not being aware of IWC. It is also higher in Phase 3 districts than in districts from the other two Phases; as above, though, it is not clear whether this is due to differential performance of Jobcentre Plus staff, differential awareness of IWC amongst customers, or the fact that a higher proportion of benefit leavers in the Phase 3 districts (compared with the other Phases) move into work.

Fourth, Figure 5.3 shows that the number of new IWC claims is consistently higher than the estimated number of potentially eligible lone parents who leave benefit and start a job, and the authors consider that this shows that the WPLS is providing an underestimate of the latter. Because of this suspected issue with the data, it is hard to interpret changes over time or variation between Phases.

5.3 Impact estimates

This section presents the main estimates of the impact of the lone parent pilots.

Estimates of the impact of the lone parent pilots produced using a DiD estimator are equivalent to the coefficient on an indicator variable for being in a pilot district interacted with an indicator variable for becoming potentially eligible to the lone parent pilots after the pilots started. The coefficients on the other regressors in the model (the individual and local-area characteristics) are not shown here, but the regressors themselves are listed in Appendix F. Note that results are only shown for the linear methods: Ordinary Least Squares (OLS) and Fully Interacted Linear Matching (FILM): implementing DiD using propensity score matching (PSM) took too long for it to be feasible to accurately compute standard errors.

Below, separate tables are presented for benefit and work outcomes, for the stock and flow samples, and for each Phase separately and (for the Flow sample[19]) all Phases together.

5.3.1 Impact estimates: stock sample

Tables 5.1 and 5.2 present impact estimates of the LPPs (in percentage point terms) for the stock samples on work and benefit outcomes, alongside the mean outcome for the pilot group. For the Phase 1 districts, benefit outcomes are available up to 24 months following the introduction of the pilots, whilst work outcomes are available for up to 18 months; for the Phase 2 districts, the figures are 15 months and 12 months respectively following the introduction of the pilots; for the Phase 3 districts, 12 months and six months.

In all three Phases, the estimated impacts of the pilots on benefit outcomes are relatively small, and often statistically significantly different from zero, particularly in later months (the larger size of the stock samples means that differences of around 0.5 percentage points or more will tend to be statistically significant). As a guide to how to interpret these results, the fourth row of the first table in Table 5.1 shows that the OLS DiD impact estimate of the LPPs in Phase 1 districts is 0.51 percentage points (ppts). This indicates that the proportion of lone parents not on benefit 12 months after first becoming potentially eligible for the pilots is 0.51 ppts *higher* for lone parents living in the pilot districts in Phase 1 districts than it is for lone parents living in the comparison districts.

The point estimates suggest that the impact was greater in the Phase 3 districts than for districts in the other two Phases: after 12 months, the estimated (OLS) impacts are respectively 0.51 ppts, 0.25 ppts and 1.20 ppts in Phases 1 to 3 (note that this difference exists after the analysis has controlled for many characteristics of the local areas and lone parents in the different Phases, but this variation between Phases may reflect a difference that has not been adequately controlled for). The weighted average of the three estimates is 0.6 ppts, so this is the central estimate of the additional impact of the LPPs on the fraction of lone parents in the stock sample that have left benefits in the pilot districts 12 months after the pilots had started. In addition, in all pilot districts, the point estimates increase over time. This is consistent with Section 5.1 which showed that participation in IWC rose over time.

The estimated impacts of the pilots on work outcomes are similar in magnitude (to those found for benefit outcomes), also tend to be statistically significantly different from zero, also rise over time, and also suggest that the impact was greater in the Phase 3 districts than for districts in the other two Phases: in the Phase 3 districts, the

---

[19] This cannot be done for the stock sample because the control group differs across Phases. It is possible to calculate a weighted average of the impacts in each Phase (weighted by their respective size), but it is not possible to estimate a standard error on this number.

OLS estimates suggest that the LPPs led to 1.11 ppts more lone parents entering work in the pilot districts than in the comparison districts, six months after the pilots were introduced.

Note that for all estimated impacts (both work and benefit), there is little difference between the estimates produced using OLS and those produced using the (more flexible) FILM procedure.

Table 5.1 Estimated impact of the LPPs on per cent off benefit, stock sample (ppts)

% off benefit after months	Level for pilot group	Raw difference	OLS	FILM
Phase 1				
3	2.7	-0.16 (0.14)	0.13 (0.14)	0.11 (0.15)
6	4.4	-0.50 (0.18)***	-0.01 (0.19)	-0.04 (0.19)
9	7.5	-0.68 (0.23)***	0.16 (0.23)	0.10 (0.24)
12	9.8	-0.10 (0.25)	0.51 (0.25)**	0.44 (0.26)*
15	11.7	-0.70 (0.26)***	0.45 (0.27)*	0.37 (0.27)
18	13.2	-0.56 (0.28)**	0.74 (0.28)***	0.74 (0.29)***
21	15.4	-0.43 (0.29)	0.86 (0.30)***	0.86 (0.30)***
24	17.1	-0.10 (0.30)	1.20 (0.30)***	1.23 (0.31)***
Phase 2				
3	3.6	-0.20 (0.11)*	0.06 (0.11)	0.06 (0.11)
6	6.3	-0.038 (0.15)***	-0.00 (0.14)	0.00 (0.15)
9	9.0	-0.41 (0.17)**	0.15 (0.17)	0.13 (0.17)
12	11.3	-0.49 (0.19)***	0.25 (0.19)	0.23 (0.19)
15	13.8	-0.26 (0.20)	0.62 (0.20)***	0.55 (0.20)***
Phase 3				
3	2.2	0.31 (0.11)***	0.45 (0.11)***	0.47 (0.12)***
6	4.5	0.26 (0.14)*	0.65 (0.15)***	0.70 (0.16)***
9	6.8	0.65 (0.17)***	1.16 (0.18)***	1.17 (0.20)***
12	9.2	0.55 (0.19)***	1.20 (0.20)***	1.20 (0.21)***

Note: authors' calculations based on data and samples described in the text.
Numbers in brackets represent standard errors:
* = significant at ten per cent level, ** = significant at five per cent level, *** = significant at one per cent level.
Results are presented in percentage points (ppts), so an estimate result of -0.16 means -0.16 ppts, not - 16ppts.

Table 5.2 Estimated impact of the LPPs on per cent in work, stock sample (ppts)

% off benefit after months	Level for pilot group	Raw difference	OLS	FILM
Phase 1				
3	11.9	-0.69 (0.26)***	0.21 (0.17)	0.14 (0.17)
6	12.9	-0.70 (0.27)***	0.26 (0.20)	0.20 (0.20)
9	14.1	-0.90 (0.28)***	0.21 (0.21)	0.12 (0.22)
12	15.0	-0.94 (0.28)***	0.20 (0.23)	0.10 (0.23)
15	15.8	-0.37 (0.29)	0.67 (0.25)***	0.52 (0.26)**
18	16.7	-0.13 (0.29)	0.92 (0.26)***	0.76 (0.27)***
Phase 2				
3	12.9	-0.46 (0.20)**	0.23 (0.12)**	0.21 (0.12)*
6	14.2	-0.43 (0.21)**	0.34 (0.14)**	0.29 (0.14)**
9	15.1	-0.54 (0.21)**	0.35 (0.15)**	0.27 (0.16)*
12	16.0	-0.35 (0.21)	0.61 (0.17)***	0.51 (0.17)***
Phase 3				
3	12.6	-0.88 (0.21)***	0.74 (0.13)***	0.67 (0.14)***
6	13.4	-0.46 (0.21)**	1.11 (0.15)***	1.01 (0.16)***

Note: authors' calculations based on data and samples described in the text.
Numbers in brackets represent standard errors:
* = significant at ten per cent level, ** = significant at five per cent level, *** = significant at one per cent level.
Results are presented in percentage points (ppts), so an estimate result of -0.16 means -0.16 ppts, not - 16ppts.

5.3.2 Impact estimates: flow sample

Tables 5.3 and 5.4 present impact estimates of the LPPs (in percentage point terms) for the flow sample on work and benefit outcomes three, six, nine and 12 months[20] after the lone parent first became potentially eligible for pilots, alongside the mean outcome for the pilot group.

The estimated impacts of the pilots on benefit outcomes, averaged across all districts, are small in magnitude and never statistically significantly different from

[20] Note that while benefit outcomes are available for each Phase in months three, six, nine and 12, work outcomes are only available in all months for individuals living in the Phase 1 districts. This is because individuals living in Phase 2 and 3 districts became potentially eligible for the pilots later than individuals living in the Phase 1 districts, while the cut-off point for the availability of employment information from the WPLS is the same for everyone. Benefit outcomes after 15 months are available for some individuals in the Phase 1 and 2 districts, and after 18 and 21 months for some individuals in the Phase 1 districts, but these estimates are not shown because the sample sizes are too small.

zero, such that the idea that the pilots had no overall effect cannot be rejected (as a guide to how to interpret these results, the fourth row of the first table in Table 5.3 shows that the OLS DiD impact estimate of the LPPs is 0.24 ppts. This indicates that the proportion of lone parents not on benefit 12 months after first becoming potentially eligible for the pilots is 0.24 ppts *higher* for lone parents living in the pilot districts (as a whole) than it is for lone parents living in the comparison districts, although this difference is not statistically different from zero).

The results for individual phases are also almost always statistically insignificant, although the point estimates suggest that the impact was generally negative in Phases 1 and 3 (meaning that lone parents living in pilot districts were *less* likely – although not significantly so – to not be receiving benefits than lone parents living in comparison districts). But the estimates for the Phase 2 districts are positive (and significantly different from zero nine months after the date on which lone parents become potentially eligible for the lone parent pilots).

The negative point estimates in Phases 1 and 3 could reflect a number of things:

- through mechanisms that are not clear, the pilots may be having genuinely negative impacts on benefit outcomes (Chapter 3 argued that the WSP might lead to negative impacts on benefit outcomes, but none of the districts in Phase 3 is operating WSP);
- the impact of the pilots may be genuinely positive, but very small, such that it is not being detected by the methods used (note that almost all of the negative estimates are not statistically significantly different from zero);
- There have been adverse changes to the local labour markets in Phase 1 and 3 districts – or adverse changes in the characteristics (that may potentially affect labour market outcomes) of lone parents who are potentially eligible to the LPPs in these districts – that have not been adequately reflected by the data available: these changes are instead being attributed to the pilots (this would mean that the 'common trends' assumption which the DiD estimator relies upon is not, in fact, appropriate).

The estimated impacts of the pilots on work outcomes, averaged across all districts, are slightly greater than those found for benefit outcomes, averaged across all districts, and are sometimes statistically significantly different from zero. For example, six months after first becoming potentially eligible for the LPPs, lone parents living in pilot districts are 0.61 ppts *more* likely to be in work than lone parents living in comparison districts. The substantial difference between this and the impact estimate implied by the raw differences (in outcomes of individuals living in the pilot and comparison districts) highlights the importance of controlling for background characteristics in this evaluation.

The impact estimates for individual phases are generally statistically insignificant – at least in part because the smaller sample size in an individual Phase makes it harder to estimate small impacts precisely – although the results provide some evidence of

negative impacts on individuals living in the Phase 3 districts, and small positive impacts on individuals living in Phase 1 and 2 districts. For lone parents living in the Phase 1 districts, therefore, there is a disparity between the impact of the LPPs on benefit and work outcomes.

Table 5.3 Estimated impact of the LPPs on per cent off benefit, flow sample (ppts)

% off benefit after months	Level for pilot group	Raw difference	OLS	FILM
All Phases				
3	5.2	-0.16 (0.18)	-0.16 (0.19)	-0.29 (0.20)
6	9.4	0.01 (0.23)	0.07 (0.25)	-0.05 (0.26)
9	12.7	0.07 (0.30)	0.25 (0.32)	0.02 (0.34)
12	15.2	0.25 (0.37)	0.24 (0.41)	-0.22 (0.44)
Phase 1				
3	4.4	-0.89 (0.31)***	-0.66 (0.30)**	-0.87 (0.84)
6	8.2	-0.64 (0.41)	-0.28 (0.40)	0.00 (0.00)
9	11.2	-0.91 (0.50)*	-0.39 (0.50)	-1.28 (0.97)
12	13.6	-1.08 (0.59)*	-0.37 (0.59)	-2.58 (1.92)
Phase 2				
3	6.3	0.14 (0.25)	0.21 (0.24)	1.13 (0.97)
6	10.9	0.37 (0.33)	0.49 (0.31)	0.00 (0.00)
9	14.5	0.46 (0.42)	0.84 (0.40)**	-0.04 (1.55)
12	17.1	0.04 (0.52)	0.73 (0.51)	4.66 (3.39)
Phase 3				
3	4.3	-0.20 (0.34)	-0.42 (0.34)	-0.53 (0.35)
6	8.1	0.10 (0.43)	-0.45 (0.44)	-0.50 (0.46)
9	11.4	0.18 (0.66)	-0.42 (0.66)	-0.53 (0.68)
12	14.7	0.78 (2.67)	-1.61 (2.56)	-1.94 (2.57)

Note: authors' calculations based on data and samples described in the text.
Numbers in brackets represent standard errors:
* = significant at ten per cent level, ** = significant at five per cent level, *** = significant at one per cent level.
Results are presented in percentage points (ppts), so an estimate result of -0.16 means -0.16 ppts, not - 16ppts.

Table 5.4 Estimated impact of the LPPs on per cent in work, flow sample (ppts)

% off benefit after months	Level for pilot group	Raw difference	OLS	FILM
All Phases				
3	20.2	-1.94 (0.32)***	0.20 (0.20)	0.20 (0.21)
6	20.8	-1.88 (0.38)***	0.61 (0.29)**	0.37 (0.30)
9	20.0	-2.48 (0.47)***	0.71 (0.41)*	0.56 (0.43)
12	20.1	-3.63 (0.63)***	0.28 (0.64)	0.27 (0.66)
Phase 1				
3	17.8	-3.20 (0.51)***	0.22 (0.30)	0.83 (0.61)
6	18.6	-3.02 (0.57)***	0.35 (0.40)	-0.29 (1.39)
9	19.1	-2.20 (0.65)***	0.76 (0.51)	
12	20.1	-3.63 (0.63)***	0.28 (0.64)	
Phase 2				
3	22.1	0.03 (0.44)	0.26 (0.25)	-0.82 (1.14)
6	23.3	0.48 (0.53)	0.77 (0.36)**	0.35 (2.53)
9	22.2	0.53 (0.80)	0.64 (0.61)	
Phase 3				
3	21.3	-1.21 (0.73)*	-0.08 (0.43)	-0.12 (0.44)
6	25.6	2.76 (2.84)	-2.13 (1.90)	1.84 (1.91)

Note: authors' calculations based on data and samples described in the text.
Numbers in brackets represent standard errors:
* = significant at ten per cent level, ** = significant at five per cent level, *** = significant at one per cent level.
Results are presented in percentage points (ppts), so an estimate result of -0.16 means -0.16 ppts, not - 16ppts.

5.3.3 Impact estimates: conclusion

The estimates presented in this section are consistent with the pilots having small, positive impacts on both work and benefit outcomes on average. For the stock sample, an average of 0.6 ppts (ranging from 0.25 ppts in the Phase 2 districts to 1.20 ppts in the Phase 3 districts) more lone parents have left benefit after 12 months of being potentially eligible to the lone parent pilots, rising to 1.20 ppts after 24 months of being potentially eligible to the lone parent pilots in the Phase 1 districts; between 0.26 and 1.11 ppts more are in work six months after the introduction of the LPPs. After 12 months exposure to the pilots, 0.24 ppts more lone parents from the flow sample have left benefit and 0.28 ppts more are in work, but neither of these numbers are statistically significant from zero.

Estimates from the stock sample suggest that the impact of the pilots is greater for Phase 3 districts than it is for Phase 1 or Phase 2 districts; estimates from the flow sample provide weak evidence that the impact of the pilots is greater for Phase 2 districts than it is for Phase 1 or Phase 3 districts. These differences exist after the

analysis has controlled for many characteristics of the local areas and lone parents in the different Phases, but this variation between Phases may reflect differences that have not been adequately controlled for. Estimates from the stock sample suggest that the impact of the pilots increased over time, consistent with estimates of the proportion of potentially eligible lone parents who have ever received IWC (shown in Section 5.1), but this pattern was not evident in the flow sample.

How do these percentage point impacts translate into numbers of lone parents? Details of the number of lone parents potentially eligible to the lone parent pilots and in the sample were given in chapter 4. 191,369 lone parents were potentially eligible to the LPPs and in the stock sample, and 38,560 lone parents were potentially eligible to the LPPs and in the flow sample.[21] Of the 38,560 lone parents in the flow sample, 5,861 (15.2 per cent) were not receiving out-of-work benefits a year after first becoming eligible. The central estimate is that the LPPs were responsible for just under a hundred (93) of these lone parents. Of the 191,369 lone parents in the stock sample, around 19,500 (10.2 per cent) are no longer receiving out-of-work benefits a year later, and the central estimate is that the LPPs were responsible for around 800 of these. It is possible to look at longer-term outcomes only in the Phase 1 districts: after 24 months of operation in the Phase 1 districts, 7,245 of the 42,374 lone parents in the stock sample and potentially eligible to the LPPs are no longer on out-of-work benefits, and the central estimate is that the LPPs are directly responsible for 508 of those. The central estimates imply, therefore, that after 12 months of being eligible to the lone parent pilots, flows off benefit have increased by 1.6 per cent for the flow sample, and by 4.1 per cent for the stock sample, although the estimate for the flow sample is not statistically significant from zero. After 24 months, the flow rate off benefit in the Phase 1 districts for the stock sample had increased by seven per cent.

The next section provides more detailed analysis of the impact of the LPPs by investigating whether the impact varied according to whether the district was operating New Deal Plus for Lone Parents (ND+fLP), and for different types of lone parents.

5.4 Impact estimates for different districts and different types of lone parents

Section 5.3 presented impact estimates separately for each Phase of the LPPs, and across all pilot districts (the latter for the flow sample only). In this section, further understanding of what is driving these overall estimates is sought by investigating

[21] These numbers will be slightly lower than the number of lone parents actually eligible to the lone parent pilots because some claims of IS in the administrative data could not be included in our sample if certain variables in the database were missing or incomplete (most notably postcode, as described in Appendices A and B).

the extent to which impacts vary according to whether Jobcentre Plus districts are operating ND+fLP, and by whether the impact of the pilots vary between different groups of lone parents. The different groups of lone parents were defined by:

- previously participation in New Deal for Lone Parents (NDLP): lone parents on NDLP are likely to be more work-ready than others, and also more likely to know about IWC through their contact with their personal advisor;
- sex of the lone parent;
- age of the youngest dependent child;
- number of dependent children;
- month in which the lone parent became potentially eligible for the LPPs (for the flow sample only).

5.4.1 Impact estimates according to whether operating ND+fLP

For the flow sample, all pilot districts were classified according to whether they were (or will be) operating ND+fLP. In fact, ND+fLP did not start until April 2005, hence the estimates of the impact of the LPPs in the ND+fLP districts are really averages of the actual impact of ND+fLP, plus the impact in those districts in the six or 12 months before ND+fLP started.

This analysis is more complicated for the stock samples, because it is necessary to analyse each Phase separately (Chapter 4 pointed out that the analysis uses a different comparison sample for each Phase). All Phase 1 districts offered ND+fLP, some Phase 2 districts offered ND+fLP and none of the Phase 3 districts offered ND+fLP. This means that there are two estimates of the impact of ND+fLP: one for the Phase 1 districts as a whole, and one for Leicestershire and Dudley & Sandwell combined (Phase 2). In addition, there are two estimates of the impact of not offering ND+fLP: one for the remaining English districts in Phase 2 (Central London, Lancashire West, Leeds, Staffordshire and West London), and one for the Phase 3 districts as a whole.

Tables 5.5 and 5.7 present the two estimates of the impact of ND+fLP for the stock samples (one for the Phase 1 districts, and one for the Phase 2 districts of Leicestershire and Dudley & Sandwell combined), for benefit and work outcomes respectively. Tables 5.6 and 5.8 present estimates for the same outcomes for the two sets of districts not offering ND+fLP (one for the remaining English districts in Phase 2, and one for Phase 3 districts).

The impact estimates on both benefit and work outcomes for the stock samples suggest that the impact of the pilots has been greater in the non-ND+fLP districts: for example, for the Phase 1 districts (operating ND+fLP), there is a difference of 0.51 ppts in the proportion of lone parents who have moved off benefits 12 months after the introduction of the pilots (compared to the proportion of lone parents who have moved off benefits in the comparison districts), while for the Phase 3 (non-ND+fLP districts), the estimate is 1.20 ppts.

It should be noted, however, that much of this difference is because, as shown in Section 6.2, the estimated impacts of the pilots on the stock sample in the Phase 3 districts are generally larger than those for districts in the other Phases. Nonetheless, even if outcomes are only considered amongst the Phase 2 districts, the point estimates are still larger in the non-ND+fLP districts than in those offering ND+fLP: for example, the proportion of lone parents who are in work 12 months after the introduction of the pilots is -0.30 ppts in the Phase 2 ND+fLP districts, compared with 0.89 ppts in the Phase 2 non-ND+fLP districts.[22]

Table 5.5 Estimated impact of the LPPs on per cent off benefit in ND+fLP districts, stock sample (ppts)

% off benefit after months	Level for pilot group	Raw difference	OLS	FILM
Phase 1 (all ND+fLP districts)				
3	2.7	-0.16 (0.14)	0.13 (0.14)	0.11 (0.15)
6	4.4	-0.50 (0.18)***	-0.01 (0.19)	-0.04 (0.19)
9	7.5	-0.68 (0.23)***	0.16 (0.23)	0.10 (0.24)
12	9.8	-0.10 (0.25)	0.51 (0.25)**	0.44 (0.26)*
15	11.7	-0.70 (0.26)***	0.45 (0.27)*	0.37 (0.27)
18	13.2	-0.56 (0.28)**	0.74 (0.28)***	0.74 (0.29)***
21	15.4	-0.43 (0.29)	0.86 (0.30)***	0.86 (0.30)***
24	17.1	-0.10 (0.30)	1.20 (0.30)***	1.23 (0.31)***
Sample size	42,374			
Phase 2, ND+fLP districts				
3	4.09	-0.12 (0.22)	0.00 (0.21)	0.00 (0.21)
6	7.24	-0.27 (0.28)	-0.11 (0.27)	-0.11 (0.27)
9	10.26	-0.50 (0.33)	-0.31 (0.32)	-0.33 (0.32)
12	12.72	-0.59 (0.36) *	-0.33 (0.30)	-0.35 (0.35)
15	15.75	0.02 (0.39)	0.30 (0.37)	0.25 (0.38)
Sample size	17,876			

Note: authors' calculations based on data and samples described in the text.
Numbers in brackets represent standard errors:
* = significant at ten per cent level, ** = significant at five per cent level, *** = significant at one per cent level.
Results are presented in percentage points (ppts), so an estimate result of -0.16 means -0.16 ppts, not - 16ppts.

[22] Obviously, the characteristics of these districts might be different, but, provided such differences are either constant over time, or reflected in the variables in our dataset, then this will have been controlled for in the difference-in-differences estimator.

Table 5.6 Estimated impact of the LPPs on per cent off benefit in non-ND+fLP districts, stock sample (ppts)

% off benefit after months	Level for pilot group	Raw difference	OLS	FILM
Phase 2 (non-ND+fLP districts)				
3	3.44	-0.22 (0.13)*	0.08 (0.12)	-3.26 (0.76)***
6	6.03	-0.42 (0.16)***	0.03 (0.16)	-3.21 (1.00)***
9	8.60	-0.39 (0.19)**	0.29 (0.19)	-3.30(1.20)***
12	10.84	-0.46 (0.21)**	0.42 (0.21)**	-4.68 (1.30)***
15	13.24	-0.35 (0.22)	0.72 (0.22)***	-3.17 (1.39)**
Sample size	59,414			
Phase 3 (all non-ND+fLP districts)				
3	2.2	0.31 (0.11)***	0.45 (0.11)***	0.47 (0.12)***
6	4.5	0.26 (0.14)*	0.65 (0.15)***	0.70 (0.16)***
9	6.8	0.65 (0.17)***	1.16 (0.18)***	1.17 (0.20)***
12	9.2	0.55 (0.19)***	1.20 (0.20)***	1.20 (0.21)***
Sample size	71,705			

Note: authors' calculations based on data and samples described in the text.
Numbers in brackets represent standard errors:
* = significant at ten per cent level, ** = significant at five per cent level, *** = significant at one per cent level.
Results are presented in percentage points (ppts), so an estimate result of -0.16 means -0.16 ppts, not - 16ppts.

Table 5.7 Estimated impact of the LPPs on per cent in work in ND+fLP districts, stock sample (ppts)

% off benefit after months	Level for pilot group	Raw difference	OLS	FILM
Phase 1 (all ND+fLP districts)				
3	11.9	-0.69 (0.26)***	0.21 (0.17)	0.14 (0.17)
6	12.9	-0.70 (0.27)***	0.26 (0.20)	0.20 (0.20)
9	14.1	-0.90 (0.28)***	0.21 (0.21)	0.12 (0.22)
12	15.0	-0.94 (0.28)***	0.20 (0.23)	0.10 (0.23)
15	15.8	-0.37 (0.29)	0.67 (0.25)***	0.52 (0.26)**
18	16.7	-0.13 (0.29)	0.92 (0.26)***	0.76 (0.27)***
Sample size	42,374			
Phase 2 (ND+fLP districts)				
3	13.54	-0.16 (0.38)	-0.08 (0.22)	-0.08 (0.22)
6	14.83	-0.29 (0.40)	-0.16 (0.27)	- 0.19 (0.27)
9	15.70	-0.67 (0.40)*	-0.46 (0.29)	-0.51 (0.29)*
12	16.67	-0.54 (0.41)	-0.30 (0.31)	-0.35 (0.31)
Sample size	17,876			

Note: authors' calculations based on data and samples described in the text.
Numbers in brackets represent standard errors:
* = significant at ten per cent level, ** = significant at five per cent level, *** = significant at one per cent level.
Results are presented in percentage points (ppts), so an estimate result of -0.16 means -0.16 ppts, not - 16ppts.

Table 5.8 Estimated impact of the LPPs on per cent in work in non-ND+fLP districts, stock sample (ppts)

% off benefit after months	Level for pilot group	Raw difference	OLS	FILM
Phase 2 (non-ND+fLP districts)				
3	12.74	-0.55 (0.22)**	0.33 (0.14)**	-0.57 (0.84)
6	13.98	-0.47 (0.23)**	0.51 (0.16)***	-0.11 (1.00)
9	14.92	-0.50 (0.24)**	0.60 (0.17)***	0.75 (1.08)
12	15.80	-0.30 (0.24)	0.89 (0.19)***	-0.21 (1.17)
Sample size	59,414			
Phase 3 (all non-ND+fLP district)				
3	12.6	-0.88 (0.21)***	0.74 (0.13)***	0.67 (0.14)***
6	13.4	-0.46 (0.21)**	1.11 (0.15)***	1.01 (0.16)***
Sample size	71,705			

Note: authors' calculations based on data and samples described in the text.
Numbers in brackets represent standard errors:
* = significant at ten per cent level, ** = significant at five per cent level, *** = significant at one per cent level.
Results are presented in percentage points (ppts), so an estimate result of -0.16 means -0.16 ppts, not - 16ppts.

Tables 5.9 and 5.10 indicate that there is little discernible difference between the impact estimates for the flow sample in the districts offering ND+fLP compared to those offering other LPP policies: almost all of the estimated coefficients are statistically indistinguishable from zero (recall that Section 5.3 showed that the estimated impact for the flow sample across all districts was statistically indistinguishable from zero too).

Table 5.9 Estimated impact of the LPPs on per cent off benefit in ND+fLP districts compared to non-ND+fLP districts, flow sample (ppts)

% off benefit after months	Level for pilot group	Sample size (pilot group)	Raw difference	OLS	FILM
ND+fLP districts					
3	5.00	18,803	-0.70 (0.25)***	-0.21 (0.26)	-0.39 (0.27)
6	9.14	18,803	-0.48 (0.33)	0.28 (0.34)	0.01 (0.36)
9	12.19	15,533	-0.90 (0.41)**	0.26 (0.42)	-0.11 (0.45)
12	14.63	12,425	-1.07 (0.49)**	0.49 (0.51)	-0.17 (0.54)
Non-ND+fLP districts					
3	5.46	19,757	0.18 (0.22)	-0.13 (0.22)	-0.76 (1.02)
6	9.56	19,757	0.48 (0.29)*	-0.07 (0.29)	-1.17 (0.95)
9	13.29	12,721	0.84 (0.38)**	0.25 (0.39)	-2.66 (1.43)*
12	16.20	6,383	0.89 (0.54)*	-0.09 (0.57)	-8.97 (5.56)

Note: authors' calculations based on data and samples described in the text.
Numbers in brackets represent standard errors:
* = significant at ten per cent level, ** = significant at five per cent level, *** = significant at one per cent level.
Results are presented in percentage points (ppts), so an estimate result of -0.16 means -0.16 ppts, not - 16ppts.

Table 5.10 Estimated impact of the LPPs on per cent in work in ND+fLP districts compared to non-ND+fLP districts, flow sample (ppts)

% off benefit after months	Level for pilot group	Sample size (pilot group)	Raw difference	OLS	FILM
ND+fLP districts					
3	18.73	15,533	-2.73 (0.43)***	0.13 (0.26)	0.14 (0.28)
6	19.43	12,425	-2.80 (0.49)***	0.32 (0.35)	0.10 (0.37)
9	19.41	8,581	-2.32 (0.57)***	0.87 (0.47) *	0.64 (0.49)
Non-ND+fLP districts					
3	21.89	12,721	-0.45 (0.42)	0.25 (0.25)	-1.10 (1.34)
6	23.33	6,383	0.54 (0.57)	1.02 (0.41)***	1.75 (4.13)
9	22.18	2,408	-0.60 (0.88)	0.33 (0.69)	-0.38 (2.10)

Note: authors' calculations based on data and samples described in the text.
Numbers in brackets represent standard errors:
* = significant at ten per cent level, ** = significant at five per cent level, *** = significant at one per cent level.
Results are presented in percentage points (ppts), so an estimate result of -0.16 means -0.16 ppts, not - 16ppts.

This section has shown that the estimated impact of the pilots is slightly greater in the non-ND+fLP districts than in those offering ND+fLP. However, this difference is:

- only apparent in the stock sample;
- derived from data from the first 12 months of operation of ND+fLP combined with the 6 to 12 months before that; and
- is very small in magnitude.

5.4.2 Impact estimates for different groups of lone parents

This section analyses whether the LPPs had a differential impact on lone parents with differing histories of participation in NDLP, and then briefly discusses outcomes for other subgroups; full tables of results are given in Appendix L.

To analyse the impact of NDLP participation on the impact of the LPPs, lone parents were split into three groups:

- those who did not participate in NDLP in the period six–30 months before becoming potentially eligible to the LPPs;[23]
- those who had recently participated in NDLP before becoming potentially eligible to the LPPs (where recently is defined as in the period six–12 months before becoming potentially eligible to the LPPs);
- those who had not *recently* participated in NDLP, but had at some point in the past participated in NDLP (defined as having participated in NDLP in the period 12-30 months before becoming potentially eligible to the LPPs).

Tables 5.11 and 5.12 provide results for benefit and work outcomes respectively. For benefit outcomes, the point estimates from the flow sample and for the stock samples in Phases 2 and 3 suggest that the impact was smaller for those lone parents with no history of NDLP participation than for those with some. For the flow sample and for the Phase 3 stock sample, the impact was the greatest amongst lone parents with a history of recent participation in NDLP: for example, after 12 months, lone parents living in a pilot district (in the flow sample) were 3.38 ppts more likely to have stopped claiming benefits than lone parents living in one of the comparison districts.

For work outcomes, this pattern is only repeated for the stock sample in the Phase 3 districts; for the stock sample in Phases 1 and 2, the point estimates suggest that the impact is greatest for those lone parents with no history of NDLP participation, and there is no consistent pattern for the flow sample.

---

[23] Note that because receipt of IWC/WSP was initially conditional on joining NDLP, it was important to try and separate voluntary participation in NDLP from participation primarily to take advantage of the LPPs. This was done by ignoring participation in NDLP in the six months immediately prior to becoming potentially eligible to the LPPs in order to try and eliminate any reverse causation that would occur if lone parents joined NDLP with a view to becoming eligible for the LPPs in future.

It is also unclear how to interpret any variation in these estimates by NDLP participation. Because NDLP is a voluntary programme, it might be expected that those lone parents who join it are those who are more likely to leave benefit and enter work (indeed, this pattern is strongly suggested by data from the comparison districts), so there may be selection effects: those lone parents who are naturally predisposed to respond to financial incentives may be the ones that join NDLP, and therefore any positive impact of IWC on all lone parents' outcomes is concentrated amongst this group. In addition, it may be that those lone parents with a recent history of NDLP participation are more likely to have heard about IWC before they found a job through meetings with their personal adviser (the qualitative research on the LPPs may be informative about this issue), so these differences may reflect informational effects. In reality, of course, both effects may be operating.

Table 5.11 Estimated impact of the LPPs on per cent off benefit, by recent participation in NDLP (ppts)

% off benefit after months	Never	Recently	In the past
Flow sample, all phases			
3	-0.34 (0.20)*	1.02 (0.61)*	0.34 (0.57)
6	-0.14 (0.27)	1.82 (0.80)**	0.30 (0.75)
9	-0.06 (0.34)	2.41 (1.01)**	0.90 (0.95)
12	-0.23 (0.44)	3.38 (1.27)***	1.16 (1.17)
Sample size[1]	31,753	3,448	3,359
Stock sample, phase 1			
3	0.19 (0.15)	-0.87 (0.61)	-0.61 (0.60)
6	-0.00 (0.20)	-1.15 (0.80)	0.21 (0.79)
9	0.15 (0.24)	-1.29 (0.98)	0.64 (0.97)
12	0.40 (0.26)	-0.49 (1.06)	1.97 (1.06)*
15	0.39 (0.28)	-1.61 (1.13)	1.56 (1.12)
18	0.69 (0.29)*	-1.08 (1.19)	1.42 (1.18)
21	0.76 (0.31)	-0.38 (1.26)	1.91 (1.25)
24	1.13 (0.32)	-0.23 (1.29)	1.79 (1.28)
Sample size	37,846	2,559	1,969
Stock sample, phase 2			
3	-0.02 (0.12)	0.43 (0.44)	0.85 (0.45)
6	-0.07 (0.15)	0.75 (0.57)	0.27 (0.59)
9	0.05 (0.18)	0.93 (0.69)	0.71 (0.71)
12	0.15 (0.20)	0.89 (0.75)	0.85 (0.77)
15	0.55 (0.21)***	0.58 (0.80)	1.63 (0.82)**
Sample size	67,945	5,004	4,341

Continued

Table 5.11 Continued

% off benefit after months	Never	Recently	In the past
Stock sample, phase 3			
3	0.45 (0.12)***	0.93 (0.44)**	0.29 (0.44)
6	0.61 (0.16)***	1.66 (0.60)***	0.85 (0.59)
9	1.03 (0.19)***	2.88 (0.72)***	2.37 (0.72)***
12	1.07 (0.21)***	3.10 (0.79)***	1.87 (0.79)**
Sample size	62,702	5,014	3,989

Note: authors' calculations based on data and samples described in the text.
Numbers in brackets represent standard errors:
* = significant at ten per cent level, ** = significant at five per cent level, *** = significant at one per cent level.
Results are presented in percentage points (ppts), so an estimate result of -0.16 means -0.16 ppts, not - 16ppts.

[1] Note that the sample size quoted here is for the flow sample at 91 days. This figure will necessarily decrease over time, although there is no reason to expect that the relative sizes of the different categories will alter.

Table 5.12 Estimated impact of the LPPs on per cent in work, by recent participation in NDLP (ppts)

% off benefit after months	Never	Recently	In the past
Flow sample, all phases			
3	0.19 (0.22)	-0.55 (0.64)	0.73 (0.60)
6	0.54 (0.31)	0.75 (0.89)	0.68 (0.83)
9	0.79 (0.44)	0.38 (1.25)	-0.09 (1.16)
12	0.18 (0.68)	-0.02 (1.85)	0.60 (1.68)
Sample size[1]	23,194	2,543	2,517
Stock sample, phase 1			
3	0.15 (0.18)	-0.80 (0.72)	0.85 (0.71)
6	0.27 (0.21)	-2.43 (0.84)***	1.00 (0.83)
9	0.24 (0.22)	-2.62 (0.91)***	0.75 (0.90)
12	0.15 (0.24)	-1.57 (0.98)	1.43 (0.97)
15	0.56 (0.26)**	0.54 (1.07)	1.41 (1.06)
18	0.84 (0.27)***	0.99 (1.11)	0.88 (1.10)
Sample size	37,846	2,559	1,969

Continued

Table 5.12 Continued

% off benefit after months	Never	Recently	In the past
Stock sample, phase 2			
3	0.24 (0.13)*	-0.20 (0.48)	0.36 (0.50)
6	0.35 (0.15)**	0.31 (0.57)	0.11 (0.59)
9	0.40 (0.16)**	-0.59 (0.62)	0.31 (0.64)
12	0.64 (0.18)***	0.18 (0.67)	0.51 (0.69)
Sample size	67,945	5,004	4,341
Stock sample, phase 3			
3	0.67 (0.14)***	1.39 (0.51)***	1.00 (0.51)**
6	1.03 (0.16)***	2.57 (0.59)***	1.04 (0.59)*
Sample size	62,702	5,014	3,989

Note: authors' calculations based on data and samples described in the text: OLS estimates only. * = significant at ten per cent level, ** = significant at five per cent level, *** = significant at one per cent level.
Please note that the results are presented in percentage points (ppts), so an estimate result of -0.16 means -0.16 ppts, not - 16ppts.

[1] Note that the sample size quoted here is for the flow sample at 91 days. This figure will necessarily decrease over time, although there is no reason to expect that the relative sizes of the different categories will alter.

This section has shown that for the stock sample in the Phase 3 districts, there is some evidence that the impact of the LPPs on both work and benefit outcomes is greatest amongst lone parents who have recently (in the six to 12 months prior to becoming eligible for the LPPs) participated in NDLP (and that these estimates are typically higher than those found for the LPPs overall): this is also true for the flow sample in terms of benefit outcomes. For the stock sample in Phases 1 and 2, there seems to be some evidence that the impact is greatest amongst those who have never participated in NDLP (at least in terms of work outcomes), and it is difficult to think of mechanisms that may lead to this (as ever, such differences are very small in magnitude).

5.4.3 Impact estimates: other variation

The vast majority of potentially eligible lone parents are female, thus it is unsurprising that the only statistically significant estimated impacts are for female lone parents. This is partly because the small number of male lone parents means that it is difficult to reliably estimate small impacts, although there is some evidence that the actual impact may well be larger for women than men (at least for the stock samples). For example, female lone parents in the Phase 3 stock sample are 1.24 ppts more likely to have left benefits after 12 months than female lone parents in the comparison group; for men, this difference is only 0.84 ppts (Tables L.1 and L.2).

Tables L.3 and L.4 show how the estimated impact varies by age of youngest child (measured at the date on which the lone parent first became potentially eligible for the pilots). There are few consistent patterns, although the tables suggest a general tendency for the impact of the LPPs on benefit outcomes to rise with age of youngest child; however, this pattern is only evident on the work outcomes of the Phase 3 stock sample. There is also some suggestion that the impact of the pilots on work outcomes is consistently high for lone parents whose youngest child is between five and eight years old, but this is not repeated for benefit outcomes, making it hard to draw conclusions from these results. The estimated impact for those lone parents whose youngest child is aged 11 or more will be partially affected by Quarterly Work Focused Interviews (QWFIs), which affect a subset of this group. However, this report has not formally examined the additional impact of QWFIs.

Tables L.5 and L.6 show how the estimated impact varies by number of dependant children (measured at the date on which the lone parent first became potentially eligible for the pilots). For the flow sample and the Phase 1 stock sample, the point estimates suggest larger impacts for larger families, but for the other two stock samples (Phases 2 and 3) suggest the opposite: these patterns are similar for work and benefit outcomes. It should be emphasised, however, that few of these differences will be statistically significant, so these patterns should only be taken as suggestive evidence.

For the flow sample, it is possible to investigate whether the impact of the pilots differs across cohorts of lone parents, where cohorts are defined according to the quarter in which the lone parent became potentially eligible to the LPPs (it is not possible to do this for the stock sample because, by construction, all lone parents in the stock sample became potentially eligible to the LPPs on the same day – the day the pilots became operational in that district). In this analysis, quarters are measured relative to the date that the pilots went live in the relevant district, so lone parents in cohort 1 became potentially eligible for the LPPs within three months of the pilots starting in their district (note that only Phase 1 districts can contribute to the estimates for quarters 5 and 6). Tables L.7 and L.8 provide the results, which show little evidence of any consistent patterns, with almost all estimates being statistically indistinguishable from zero. Indeed, the estimated impacts on the benefit and work outcomes contradict one another, with the early cohorts showing negative impacts on the benefit outcomes and positive impacts on the work outcomes.

5.4.4 Impact estimates: conclusion

This section has investigated whether the impact of the LPPs varies by subgroup.

Because the estimated impacts of the LPPs are small, and only statistically distinguishable from zero for the stock sample, it is very rare to find statistically significant differences between these groups. However, by comparing point estimates, there seems to be weak evidence that the impact of the LPPs is greater:

- for non-ND+fLP districts (although only for the stock sample);
- amongst lone parents who have recently participated in NDLP;
- for female lone parents than male (although only for the stock sample);
- the older is the youngest child of the lone parent;

There was no consistent variation according to the quarter in which a lone parent became potentially eligible to the LPPs, nor by the number of children.

5.5 Conclusions and interpretations

This chapter has presented evidence on the impact of the LPPs on the proportion of potentially eligible lone parents who have left benefits or entered work.

In the absence of the LPPs, lone parents in the pilot districts are, on average, slower to leave benefits and spend less time in work than those in comparison districts, and individuals in the flow sample leave benefits more quickly and spend more time in work than those in the stock sample. There are problems in using the measure of work in the WPLS, chiefly because it relies on employers making accurate returns to Her Majesty's Revenue and Customs (HMRC) when they start and stop paying an employee sufficient earnings for Income Tax to be liable. For example, on the date that individuals first become eligible for the LPPs, between 11 per cent (of the stock) and 21 per cent (of the flow) are recorded as being in work. Although it is possible to be both in work and receiving IS, this proportion seems rather high. On the other hand, changes over time in the measure of work look more plausible.

Impact estimates were presented for each Phase (Section 5.3). The estimates are consistent with the pilots having small, positive impacts on both work and benefit outcomes on average. For the stock sample, an average of 0.6 ppts (ranging from 0.25 ppts in the Phase 2 districts to 1.20 ppts in the Phase 3 districts) more lone parents have left benefit after 12 months, rising to 1.20 ppts after 24 months in the Phase 1 districts, and between 0.26 and 1.11 ppts more of the stock sample are in work six months after the introduction of the lone parent pilots. After 12 months exposure to the pilots, 0.24 ppts more lone parents from the flow sample have left benefit and 0.28 ppts more are in work, but neither of these figures is statistically significant from zero.

The central estimate implies that the LPPs were directly responsible for just under a hundred (93) of the 5,861 lone parents in the flow sample who were no longer receiving out-of-work benefits 12 months after becoming potentially eligible to the LPPs, and that the LPPs were directly responsible for around 800 of the 19,500 lone parents in the stock sample who were no longer receiving out-of-work benefits a year after becoming potentially eligible to the LPPs. In other words, the central estimates imply that, after 12 months, the LPPs have increased the number of lone parents no longer receiving out-of-work benefits by 1.6 per cent for the flow sample, and by 4.1 per cent for the stock sample; after 24 months, this figure has risen to seven per cent for the stock sample in the Phase 1 districts.

There is weak evidence that the impacts are slightly greater in districts which do not operate ND+fLP, but this difference is:

- only apparent in the stock sample;
- derived from data from the first 12 months of operation of ND+fLP combined with the six to 12 months before that; and
- very small in magnitude.

There is weak evidence that the impacts are slightly greater for lone parents with some history of participation in NDLP. Because NDLP is a voluntary programme, it might be expected that those lone parents who join it are those who are more likely to leave benefit and enter work so those lone parents who are naturally predisposed to respond to financial incentives may be the ones that join NDLP, and therefore any positive impact of IWC on all lone parents' outcomes is concentrated amongst this group. In addition, it may be that those lone parents with a recent history of NDLP participation are more likely to have heard about IWC before they found a job through meetings with their personal adviser, so these differences may reflect informational effects.

There is weak evidence that the impacts are slightly greater for female lone parents, and for lone parents whose youngest children is relatively older (Section 5.4).

The proportion of potentially eligible lone parents who have received IWC has risen over time, and is continuing to rise in the Phase 1 districts after 20 months of operation (Section 5.1). In the long-run, this proportion should be stable, which suggests that the pilots may be taking some time to become fully effective, either through delays in lone parents discovering that they are potentially eligible for IWC, or delays in the ability of Jobcentre Plus staff to market IWC effectively: the data here cannot distinguish between these or alternative explanations. But this rise in the proportion of potentially eligible lone parents who have ever received IWC may indicate that the impact of the LPPs on labour market outcomes might also be rising over time, and continuing to rise even after the data analysed here stops (31 March 2006 for the benefit outcomes, 30 September 2005 for the work outcomes). On the other hand, data from the flow sample failed to find any statistically significant differences between different cohorts of lone parents.

As a whole, therefore, the evidence in this report suggests that, in its first one to two years of operation, the main achievement of the pilots was to make better off those lone parents who would have left benefits for work had the pilots not been in operation, rather than to encourage substantially more lone parents to do just that. The pilots may well be encouraging job retention amongst this group, but it is not possible to examine this without data on which lone parents received IWC.

6 Conclusions and lessons for future analysis

The aim of this project is to quantitatively evaluate the short- and long-run impacts of a set of policies designed to help lone parents into work, hereafter referred to as the lone parent pilots (LPPs). This report has described the first stage of that project.

6.1 Methodology and data

The analysis in this report has estimated the impact of being *potentially eligible* for the LPPs on whether individuals with an Income Support (IS)/Jobseeker's Allowance (JSA) claim of at least 12 months have stopped claiming benefits and whether they are in work at various points following the introduction of the pilots. This was done by comparing the outcomes of lone parents living in the pilot districts with the outcomes of lone parents living in other (English) districts (the comparison group).

This evaluation was constrained to use administrative data held by the Department for Work and Pensions (DWP), and used the Income Support History file (IS History file) and the Work and Pensions Longitudinal Study (WPLS) to create a 100 per cent sample of individuals potentially affected by the LPPs (and a set for the comparison group).

Information was used on all lone parents with an IS/JSA claim that had, at some point between 1 April 2002 and 31 March 2006, exceeded 12 months in duration. Data from the same period was used to construct benefit outcomes, and employment data from 1 April 2002 to 30 September 2005 was used to construct work outcomes (data from before 1 April 2002 was used to construct benefit and employment histories).

The report shows that estimates of the proportion of individuals reported to be in work using the measure of employment available in the WPLS are not always plausible. However, in general, changes in this measure (i.e. changes in the proportion of lone parents reported to be in work) tend to match well with changes in the proportion of lone parents who were receiving benefits (measured for the

same individuals), indicating that this is a reasonable measure to use when estimating the impact of the In Work Credit (IWC) in particular.

Some personal characteristics are available in the IS History file, the WPLS and the National Benefits Database (NBD), but these were supplemented by local-area data to proxy for individual characteristics that are not observed in the administrative data. Local area data was also included to control for local labour market characteristics (that may affect the likelihood of an individual finding work and/or leaving benefits). This data was obtained from a variety of sources, including the 2001 Census.

Preliminary work indicated that, even after controlling for all of these individual-level and local-area characteristics, however, lone parents in the pilot districts were still, on average, slower to leave benefits and spent less time in work than those in the comparison districts. This indicates that there are unobserved differences between pilot and comparison districts that are likely to bias estimates of the impact of the LPPs if they are ignored. If one is willing to accept the 'common trends' assumption, then a difference-in-differences (DiD) estimator can be used to estimate the impact of the LPPs. Such an estimator compares trends in the outcomes of lone parents living in the pilot districts with trends in the outcomes of lone parents living in the comparison districts. If, after controlling for individual and local-area effects, the average outcomes in these two groups converge or diverge, then this can be attributed to the pilots. This will be a correct estimate of the true impact of the LPPs only if the common trends assumption holds in practice, i.e. only if the trends in labour market outcomes in the absence of any pilots is the same for lone parents in the pilot and comparison districts. A DiD estimator can be implemented using either linear methods (Ordinary Least Squares (OLS) or Fully Interacted Linear Matching (FILM)), or propensity score matching (PSM) techniques, but results are presented only for linear methods in this report (large sample sizes meant that obtaining standard errors using PSM techniques would have taken months of computation time).

6.2 Impact estimates using difference-in-differences

Impact estimates of the LPPs were provided on the proportion of lone parents who have stopped claiming benefits and the proportion of lone parents who are in work at three-monthly intervals following the introduction of the LPPs. In all cases, separate impact estimates are provided for:

- those who have been claiming IS/JSA continuously for at least 12 months when the pilots are introduced in their district, such that they are potentially eligible for the LPPs on the day they start. This group is referred to as the **stock** sample;
- those who have been claiming IS/JSA for less than 12 months, or who have not yet made a claim for IS/JSA, when the pilots are introduced in their district. This group is referred to as the **flow** sample.

The flow is the more interesting sample, because the impact of the pilots on the flow sample determines how effective the policies are likely to be in the long-run (in the long-run, everyone in the stock sample will have stopped claiming benefits, such that all IS/JSA claims potentially eligible to the pilots in the long-run will have first become potentially eligible to the pilots after their introduction). However, the larger sample size of the stock sample means that impacts were estimated more accurately for this group.

The estimates suggest that, on average, the pilots had small, positive impacts on both work and benefit outcomes. For the stock sample, an average of 0.6 ppts more lone parents have left benefit after 12 months of being potentially eligible to the LPPs, rising to 1.20 ppts after 24 months of being potentially eligible to the LPPs in the Phase 1 districts; between 0.26 and 1.11 ppts more are in work six months after the introduction of the LPPs. After 12 months exposure to the pilots, 0.24 ppts more lone parents from the flow sample have left benefit and 0.28 ppts more are in work, but neither of these numbers are statistically significant from zero.

In the absence of the pilots, lone parents on IS/JSA for at least 12 months tend to stay on benefits for long durations, and this helps explain why these estimated impacts seem small. The impact estimates imply that after 12 months of being eligible to the LPPs, the number of lone parents not on benefit had increased by 4.1 per cent for the stock sample and 1.6 per cent for the flow sample (although the latter is not statistically significant from zero). After 24 months of being potentially eligible to the pilots, the number in the stock sample and not on benefit in the Phase 1 districts had increased by seven per cent.

Estimates from the stock sample suggest that the impact of the pilots increased over time, consistent with estimates of the proportion of potentially eligible lone parents who have ever received IWC. This pattern was not evident in the flow sample.

Estimates from the stock sample suggest that the impact of the pilots is greater for Phase 3 districts than it is for Phase 1 or Phase 2 districts; estimates from the flow sample provide weak evidence that the impact of the pilots is greater for Phase 2 districts than it is for Phase 1 or Phase 3 districts. These differences exist after the analysis has controlled for many characteristics of the local areas and lone parents in the different Phases, but this variation between Phases may reflect differences that have not been adequately controlled for. But the differences are small, and not always statistically significant. There is weak evidence that the impacts are slightly greater in districts which do not operate New Deal Plus for Lone Parents (ND+fLP), but this difference is only apparent in the stock sample, is derived from data from the first 12 months of operation of ND+fLP combined with the six to 12 months before that, and is very small in magnitude.

There is weak evidence that the impacts are slightly greater for lone parents with some history of participation in New Deal for Lone Parents (NDLP). Because NDLP is a voluntary programme, it might be expected that those lone parents who join it are those who are more likely to leave benefit and enter work so those lone parents who

are naturally predisposed to respond to financial incentives may be the ones that join NDLP, and therefore any positive impact of IWC on all lone parents' outcomes is concentrated amongst this group. In addition, it may be that those lone parents with a recent history of NDLP participation are more likely to have heard about IWC before they found a job through meetings with their personal adviser, so these differences may reflect informational effects. There is also weak evidence that the impacts are slightly greater for female lone parents, and for lone parents whose youngest child is relatively older.

6.3 Policy implications

As a whole, the evidence in this report suggests that, in its first one to two years of operation, the main achievement of the pilots was to make better off those lone parents who would have left benefits for work had the pilots not been in operation, rather than to encourage substantially more lone parents to do just that. The pilots may well be encouraging job retention amongst this group, but it was not possible to examine this in this report, as data on which lone parents received IWC was not yet available.

The fact that the positive response to the LPPs is concentrated amongst those lone parents who had a history of participation in NDLP suggests – but by no means proves – that the small impact of the pilots might be due to a lack of knowledge of IWC amongst those lone parents who have not yet decided to look for work; separately-commissioned qualitative research on both the pilots and ND+fLP should be informative about this.

Both participation in IWC and the impact of the LPPs increased over time, and so equivalent impact estimates in future reports may well be higher than those presented here. On the other hand, the impact of IWC on individual lone parents might be expected to fall after the 12 month time-limit for payments has been reached. Given that few of the lone parents who have ever received IWC will have received it long enough to reach that time-limit in the period covered by the data used in this report, it is also possible that the estimates of the impact of the pilots *assessed over longer periods* in subsequent reports could be lower than those provided here when assessed over 12 to 24 months. It is therefore unclear, *a priori*, whether future impact estimates will be higher or lower than those found in this report.

Chapter 2 and Appendix F explain how, in theory, the impact of the LPPs in different districts can be compared to provide estimates of the additional impacts of various components of the LPPs (for example, this could provide an estimate of the additional impact of Work Search Premium (WSP) or of Extended Schools Childcare (ESC) compared with IWC alone). However, this report did not provide such estimates, other than comparing ND+fLP districts with other districts. This is because such estimates rely on comparing the estimated impacts in different districts with each other; because the estimated impact across all districts was so low and not

always statistically significant, differences between sub-groups were even less likely to be statistically significant from zero. The authors considered, therefore, having seen the estimates for all districts, that it would not be meaningful to attempt to estimate separately the impact of different combinations of policies. It will, though, be possible to re-examine this issue in future reports; the fact that future reports will have access to more data means that it is very likely that the estimates of the impact of the pilots will be estimated more accurately. The estimates in this report, then, are of the average impact of the LPPs across all districts, although it is likely that any impacts are dominated by the impact of IWC.

6.4 Future reports

Two further reports are planned as part of this evaluation. These will have access to individual-level data detailing who actually received IWC, and so will enable greater focus on whether the LPPs have affected job retention rates, as well as moves off benefits and into work. They will also have access to more outcome data, such that they will be able to consider the medium- to long-run impacts of the LPPs on lone parents in Phases 1 to 3, and the shorter-run impacts on lone parents living in the Phase 4 pilot districts.

However, it will not simply be a case of repeating the same analysis (outlined in this report) on later outcomes: the use of a DiD estimator (necessitated by the presence of unobserved differences between pilot and comparison areas in this report) may need to be reconsidered. This is because the WPLS only contains benefit and work outcomes from mid-1999, such that the hypothetical pilots (see Section 3.3 for more details) will be constrained to start no earlier than 1 January 2002. This means that for the Phase 1 districts, impact estimates can only be assessed up to 28 months after the date on which individuals first became eligible for the LPPs in a DiD framework (up to 34 months for Phase 2 districts and up to 40 months for Phase 3 districts). This issue will need to be addressed in future reports, either by seeking out alternative methodologies, or by controlling for fewer months of labour market histories. A technical report will, therefore, examine an alternative methodology for providing the impact estimates.

Appendix A
Adjustments made to the Income Support History file before constructing a sample of lone parents potentially eligible to the lone parent pilots

To construct the sample for the empirical work requires knowing whether an individual was eligible for inclusion in the pilot or comparison groups on a given day. The IS History file can be used for this, because it is supposed to be constructed so that each line gives the dates within which a certain set of personal characteristics is applicable.

However, it was not always the case that each line represented a change in one or more of these personal characteristics: 116,304 lines (approximately one per cent of the total) were exact duplicates[24] of other lines in the dataset, and so were dropped from the analysis.

It was also the case that for some consecutive lines in the data-set – a situation which should occur only if there had been a change in the claimant's circumstances – none of the relevant variables were different from those in the line above. In such cases, if all 'effective from' (pefffmdt) and 'effective to' (pefftodt) dates were consecutive

[24] Exact duplicates in terms of the following variables: ccnino, pclmstdt, pefffmdt, pefftodt, pdob, psex, pcd, pptrflg, pnumchld, pdobchld, pbranoff, bdisdat, bdispre and cincapfg.

within a given claim, information was amalgamated by recording the earliest start date and latest end date on a single line, and dropping the remainder (see example below).

Table A.1 Adjustments to the Income Support History File; 1

pclmstdt	pefffmdt	pefftodt	pcd	pptrflg	pnumchld	pdobchld	pbranoff
14-02-01	14-02-01	23-03-01	W142ND	N	0		8435
14-02-01	24-03-01	06-04-01	W142ND	N	0		7995
14-02-01	07-04-01	15-06-01	W3 4FZ	N	0		7995
14-02-01	16-06-01	03-05-02	W3 4FZ	N	1	16-June-01	7995
14-02-01	04-05-02	12-06-03	W3 4FZ	N	1	16-June-01	7995
14-02-01	13-06-03	10-07-03	W3 4FZ	N	1	16-June-01	7995
14-02-01	11-07-03	02-10-03	W3 4FZ	N	1	16-June-01	7995
14-02-01	03-10-03	30-10-03	W3 4FZ	N	1	16-June-01	7995
14-02-01	31-10-03	18-03-04	W3 4FZ	N	1	16-June-01	7995
14-02-01	19-03-04	21-08-49[1]	W4 8RG	N	1	16-June-01	7995

[1] Note that the end dates of all continuous Income Support (IS) claims have been recoded to 21 August 2049 for data storage reasons.

Becomes:

Table A.2 Adjustments to the Income Support History File; 2

pclmstdt	pefffmdt	pefftodt	pcd	pptrflg	pnumchld	pdobchld	pbranoff
14-02-01	14-02-01	23-03-01	W142ND	N	0		8435
14-02-01	24-03-01	06-04-01	W142ND	N	0		7995
14-02-01	07-04-01	15-06-01	W3 4FZ	N	0		7995
14-02-01	16-06-01	18-03-04	W3 4FZ	N	1	16-June-01	7995
14-02-01	19-03-04	21-08-49	W4 8RG	N	1	16-June-01	7995

In many cases, however, the dates were not entirely consecutive:

Table A.3 Adjustments to the Income Support History File; 3

pclmstdt	pefffmdt	pefftodt	pcd	pptrflg	pnumchld	pdobchld	pbranoff
15-05-99	15-05-99	02-07-99	AB3 9JK	N	2	18-09-86	5214
15-05-99	15-05-99	10-09-99	AB3 9JK	N	2	18-09-86	5214
15-05-99	03-07-99	30-07-99	AB3 9JK	N	2	18-09-86	5214
15-05-99	31-07-99	23-03-01	AB3 9JK	N	1	18-09-86	5214
15-05-99	11-09-99	23-03-01	AB3 9JK	N	1	18-09-86	5214
15-05-99	24-03-01	03-05-02	AB3 9JK	N	1	18-09-86	5214
15-05-99	04-05-02	28-06-02	AB3 9JK	N	1	18-09-86	5214
15-05-99	29-06-02	22-07-04	AB3 9JK	N	1	18-09-86	5214

In this example, there is inconsistency over the date on which an individual's circumstances changed – either 31 July 1999 or 11 September 1999. In such situations, the rule used was to take the earlier end date as being correct, as long as this earlier end date was consecutive with the start date on a later line (as is the case in this example). If this was not the case, then the start date of the second spell was used: the end dates of 5,196 lines (0.04 per cent) were changed as a result of this rule.

The above example becomes:

Table A.4 Adjustments to the Income Support History File; 4

pclmstdt	pefffmdt	pefftodt	pcd	pptrflg	pnumchld	pdobchld	pbranoff
15-05-99	15-05-99	30-07-99	AB3 9JK	N	2	18-09-86	5214
15-05-99	31-07-99	22-07-04	AB3 9JK	N	1	18-09-86	5214

Once these adjustments had been made, a total of 4,968,829 superfluous lines (just under 39 per cent of the dataset) had been dropped. This left only 93 lines where the 'effective from' and preceding 'effective to' dates were not consecutive. Further steps were taken to ensure that these problems were eliminated, with issues that arose during this process outlined in what follows.

In some cases, the same 'effective from' date was given on two different lines. Occasionally, this was accompanied by the 'effective to' date falling before the 'effective from' date on one of these lines. Where this occurred, the line of negative length was deleted (this rule dropped one line from the dataset). In other cases, one of the 'effective to' dates tied up with the next 'effective from' date, while the other did not. Where this occurred, the spell with consecutive 'effective to' date was kept and the other spell deleted. In the example below, this rule would drop the second line (which makes sense, given that this particular line records a child born on 3 August 2004 as being part of a change in the claimant's circumstances on 28 April 2004). A total of 21 lines were dropped as a result of this rule.

Table A.5 Adjustments to the Income Support History File; 5

pclmstdt	pefffmdt	pefftodt	pcd	pptrflg	pnumchld	pdobchld	pbranoff
28-04-04	28-04-04	24-06-04	E16 3NP	N	0		4125
28-04-04	28-04-04	26-05-04	E16 3NP	N	1	03-08-04	6980
28-04-04	25-06-04	19-08-04	E16 3NP	N	0		6980
28-04-04	20-08-04	28-10-04	E16 3NP	N	1	03-08-04	6980
28-04-04	27-05-05	21-08-49	E16 3NP	N	1	03-08-04	5630

Where two or more of the same 'effective from' dates remained, the corresponding 'effective to' dates were necessarily non-consecutive with the proceeding 'effective from' date (because of the application of the above rules). In such cases, the latest

'effective to' date was chosen, to maximise the time period over which the data provided a record of the individual's personal characteristics, and therefore to increase their chances of appearing in the sample. This rule deleted a total of 23 lines.

This left 27 non-consecutive lines, 16 of which had the previous 'effective to' date more than one day before the next 'effective from' date (i.e. there was a period of time for which there was no information in the IS History file).

The other 11 non-consecutive lines all have 'effective to' dates that are later than the following 'effective from' date. In such cases, 'effective to' date was replaced with the day before the next 'effective from' date, under the assumption that the more recent information is more likely to be correct. The resulting dataset was used to select the samples, as described in Chapter 4.

Appendix B
Constructing a sample of lone parents potentially eligible to the lone parent pilots from the Income Support History file

In practice, to be eligible for the lone parent pilots (LPPs), an individual needs to fulfil all of the following criteria at a given point in time:

- to live in a pilot district;
- to have been claiming Income Support (IS) or Jobseeker's Allowance (JSA) or some combination[25] for at least 12 months;
- to be a lone parent;
- to stop claiming IS/JSA and to move into work of at least 16 hours a week.

Therefore, the criteria used to construct a sample of benefit claims potentially affected by the LPPs was that an individual had, at some point in the inflow window (1 April 2004 to 30 September 2005), to fulfil all of the following criteria:

---

[25] In practice, individuals who have claimed JSA followed by IS for periods of 12 months or more combined were considered; individuals who have claimed IS for a period of less than 12 months and then moved onto JSA, and individuals who have only claimed JSA for a period of 12 months or more, are not considered. However, the number of lone parents who move from IS to JSA, or who only claim JSA is likely to be relatively small, and as such, this exclusion should not have any noticeable impact on the estimates of the impact of the lone parent pilots.

- live in a pilot district; [26]
- have made a claim for IS or JSA (or some combination) whose length exceeds 12 months;
- be a lone parent.

Having identified this set of claims, the first date in the inflow window on which an individual became eligible for IWC was recorded. Note that in this report, no consideration has been made for how long individuals remained potentially affected by the policies. For example, an individual would stop being potentially affected by the policies if they gained a partner, stopped being responsible for dependent children, moved out of the pilot districts, or stopped claiming IS/JSA for any reason other than to move into work of 16 hours or more per week. This means that the pilot group is defined as those individuals who had a claim for IS/JSA that was potentially affected by the policies for at least a day.

In constructing the comparison group, the set of individuals were identified who had, at some point in the inflow window, fulfilled all of the following criteria:

- live in a comparison district;
- have made a claim for IS or JSA (or some combination) whose length exceeds 12 months;
- be a lone parent.

The information in the Work and Pensions Longitudinal Study (WPLS) and the National Benefits Database (NBD) is insufficient to construct this sample. The NBD records whether an IS claim was made by a lone parent only at the start and end of the claim, but not at any point in between.[27] This means that it is not possible to use NBD data extracted in (say) June 2005 to be able to identify exactly a set of claims of IS made by lone parents in (say) April 2004 (instead, one can use the NBD to identify a set of claims which were originally made by lone parents, or a set of 'live' claims currently being received by lone parents).[28]

---

[26] The tests for unobserved differences were implemented on a similar sample of pilot and comparison group individuals who became eligible for a hypothetical policy between 1 April 2002 and 30 September 2003.

[27] For ongoing claims at the date of extract, the information in the NBD is the 'current' state.

[28] The same point also applies to postcode in the NBD (and, therefore, all variables derived from it): postcode is only recorded at the start and end of a claim, so it is not possible to use NBD data extracted in (say) June 2005 to identify exactly a set of claims of IS live on (say) 1 April 2004: instead, one could construct a sample of claims originally made by individuals living in the pilot districts, or a sample of live claims received by individuals currently living in the pilot districts.

For this reason, the IS History file was used to construct a set of claims potentially affected by the LPPs. Appendix A describes some changes that had to be made to that file to ensure consistency of the date fields.

Constructing the sample for the empirical work relies upon identifying individuals who met all of the above criteria at a particular point in time. The variables pptrflg (indicating whether an individual has a partner or not) and pnumchld (indicating how many children an individual has) are sufficient to identify whether someone is a lone parent or not.

To identify whether an individual lived in one of the pilot districts, various mappings from postcode to higher-level geographical areas were used (in particular, the mapping was from postcode to LA to Jobcentre Plus district).

Before implementing this mapping, however, it was important to ensure that as many missing, incomplete or incorrect postcodes were removed from the IS History file as possible, to maximise the number of individuals in the sample. To do this, information was imputed from elsewhere in an individual's IS claim, but only where this would not compromise the integrity of the IS History file (where personal characteristics, including postcode, may change from line to line). This was accomplished according to the following procedure:

- There were 42,937 postcodes that did not exist according to the published Office for National Statistics (ONS) mapping from postcode to higher geographic areas, and 114,256 missing postcodes. Some of these missing and incorrect postcodes were able to be replaced by imputing information from the neighbouring lines of a particular spell, but only if it was certain that a change in postcode was not the reason for a new line being generated in the IS History file. This was accomplished by ensuring that there could have been a change in personal circumstances for a reason other than a change in postcode, i.e. one of the following variables had to change between the two lines: pnumchld, pdobchld, bdisdat, bdispre, cincapfg or pptrflg. By following this procedure, 6,795 previously missing postcodes and 1,146 incorrect postcodes were imputed.

After all these changes had been made, however, 746,369 spells (6.3 per cent of the total) were lost.

As stated earlier, to be eligible for the LPPs, an individual also needs to have been claiming IS (or JSA and IS continuously) for at least 12 months. Using the IS History file alone to select the sample for the empirical work would therefore miss any individuals who had, for example, been claiming JSA for six months and then moved onto IS (and been claiming IS for a period of less than 12 months). All JSA spells from

the WPLS for individuals in the IS history file were therefore appended to the IS History file.[29]

The information about JSA claims is only available from the WPLS, and this restricts information to what is known at the start and end of an individual's claim (and not, for example, at the point at which their claim duration hits 12 months, as for individuals in the IS History file). Lone parents who had been claiming JSA for a period of 12 months or more in the sample (either with or without a consecutive IS spell) were therefore omitted from the sample, as it is not known for certain whether they were a lone parent, or that they lived in a pilot district, at the point at which their claim hit 12 months. However, individuals who had initially claimed JSA (but for less than 12 months) and then moved onto IS, without a break in benefit receipt (and, of course, on individuals who had been claiming IS alone for a period of 12 months or more) were included in the sample for the empirical work.

Armed with this information, it is then possible to calculate the first date (in the inflow window) on which each individual became potentially eligible for IWC:[30]

- If an individual's claim hit 12 months prior to the start of the inflow window, and they were a lone parent living in one of the pilot districts on the first day of the LPPs, then 'date first eligible' was 1 April 2004: such individuals form the stock sample.
- If an individual's claim hit 12 months during the inflow window, and they were a lone parent living in one of the pilot districts at that time, then 'date first eligible' was the date at which their claim hit 12 months: such individuals form part of the flow sample.

---

[29] To do this, encrypted National Insurance number (NINO) from the IS History file was merged with encrypted nino from the WPLS. Some NINOs from the IS history file could be merged to more than one orcid (individual identifier) in the WPLS. It is not clear why this should be the case (as NINO should be unique to a particular individual). There were several cases where more than one encrypted NINO was matched to a single orcid: this is undesirable for the purposes of this evaluation, as it would lead to two different IS histories being assigned to a single individual, which is likely to result in inconsistencies. To avoid this, all encrypted NINOs that were matched to more than one orcid were dropped, or that were matched to a single orcid, but where another encrypted NINO had also been matched that same orcid. As a result of these rules, 685 encrypted NINOs were dropped from the analysis.

[30] 'Date first eligible' was determined for the comparison group in the same way, except that, of course, they need to be living in one of the potential comparison districts (rather than in one of the pilot districts). Note that it is theoretically possible for an individual to be included in both the pilot and comparison groups if, for example, a lone parent moved from a comparison district into a pilot district (or vice versa) during the inflow window. In such cases, individuals were included in the pilot group only.

- If an individual's claim hit 12 months either before or during the inflow window, but they only became a lone parent living in one of the three early districts at some later date in the inflow window, then 'date first eligible' was this later date: such individuals form part of the flow sample.

Appendix C
Adjustments to the Work and Pensions Longitudinal Study made before constructing benefit and work histories and outcome measures

The Work and Pensions Longitudinal Study (WPLS) combines employment (or, more accurately, income tax) records from Her Majesty's Revenue and Customs (HMRC) with a range of programme and benefit spells from the Department for Work and Pensions (DWP).

Knowledge about the HMRC records in the WPLS is growing all the time, and at the time this project was carried out, it was not clear what is 'best practice' when working with this dataset: the rules implemented for this project are, therefore, described in Sections C.1 to C.4.

C.1 Dropping spells

Upon receipt of the employment (Income Tax) records from HMRC, DWP performs a number of 'data-cleaning' exercises to ensure that the information provided by the WPLS is as accurate as possible. Based on recommendations from DWP and the authors' own analysis, the following spells were dropped:

- Benefit and work spells that ended before 1 June 1999 or start after 1 April 2006.

- Work spells that have negative, zero or one-day length, and benefit spells that have negative or zero length.[31]
- Work spells flagged by the variable 'benflag' (see Appendix C).
- Work spells that have been poorly matched to an individual's benefit records (i.e. those with match = AmbRe or RedAm).
- Work spells marked as 'OLD': this indicates that the record has been updated and, as such, will appear elsewhere in the WPLS.
- Work spells where the start or end dates were genuinely missing (this does NOT mean spells where the start date has been set to 6 April, or the end date has been set to 5 April or 31 December 9999, discussed in Section C.3).
- Benefit spells that represent time spent on programmes rather than benefits.[32]

C.2 Deleting employment spells that are really taxable benefit spells

The variable 'benflag' was created by DWP to identify employment spells that they believe are not really employment spells. This may arise because HMRC records relate to periods in which Income Tax has been paid (and not necessarily periods in which an individual has been employed), which means it is entirely possible that some of the 'employment' spells in the WPLS are actually periods in which Income Tax has been paid on the receipt of certain taxable benefits. The variable 'benflag' identifies employment spells that:

- are definitely Jobseeker's Allowance (JSA) or Incapacity Benefit (IB) spells (because they have a payroll code, provided by HMRC, which is specific to the receipt of that benefit);
- DWP believe are JSA spells (because, for that individual, there is a JSA spell with identical start and end dates to the employment spell).

Given the large proportion of employment spells in the WPLS with uncertain start or end dates, however, this reliance on JSA start and end dates tying up exactly with

---

[31] WPLS documentation suggests that most spells that start and finish on the same day are erroneous (the authors understand that they have been incorrectly input by HMRC personnel); most spells that end before they start are for New Deal for Lone Parents (NDLP). DWP advise that one-day employment spells occur when HMRC have been told about the end date of a job, but have no idea when the job started: these spells were removed and an indicator for having a one-day work spell was included in most of the multi-variate regressions in the empirical analysis.

[32] Defined as prgmtype == 4 | prgmtype == 13 | prgmtype == 16 | (prgmtype > 100 & prgmtype < .).

employment start and end dates is likely to miss a considerable number of employment spells that are actually taxable benefit spells. Moreover, JSA is not the only programme/benefit that could appear as an employment spell[33] (and, indeed, the problem of identical start and end dates is exacerbated in the case of non-JSA spells, where benefit end dates are randomised between the dates on which records are extracted).

There are a number of situations in which the authors consider that it is more likely that a given employment spell records time on benefit rather than in work:

Case 1:

- employment and non-JSA benefit start dates are the same;
- employment and non-JSA benefit end dates are known and within X days of one another (where X = number of days between extracts).[34]

  e.g. benefit spell: 7 August 2003 to 14 January 2004

  employment spell: 7 August 2003 to 9 January 2004

532 (0.01 per cent) employment spells were deleted as a result of this rule.

Case 2:

- employment and benefit start dates are the same;
- employment end date is uncertain (set to 5 April);
- benefit end date is the same as (or before) the employment end date, and in the same tax year as the employment end date.

  e.g. benefit spell: 1 June 2001 to 1 September 2001

  employment spell: 1 June 2001 to 5 April 2002

45,829 (0.76 per cent) employment spells were deleted as a result of this rule.

Case 3:

- employment and benefit start dates are the same;
- employment end date is continuous (set to 31 December 9999);
- benefit end date is the same as (or before) the employment end date.

  e.g. benefit spell: 9 April 2004 to 10 April 2005

  employment spell: 9 April 2004 to 31 December 9999

6,264 (0.10 per cent) employment spells were deleted as a result of this rule.

---

[33] Income Support (IS), IB, JSA and Widow's Benefit (WB) were used to identify taxable benefit spells.

[34] Note: this rule was only applied to IS and IB spells.

C.3 Duplicate and uncertain work spells

The work spells in the WPLS suffer from two major problems:

- Duplicate records describing the same spell in work (or near-duplicate records that appear to describe the same spell in work but contain different information about start and end dates).
- Uncertain start and end dates: where HMRC know in which tax year a job started or finished, but not the precise date, they use 6 April to indicate start and 5 April to indicate end dates.

As only 53 per cent of all employment spells in the WPLS sample had only certain start and end dates (the others were either ongoing, or had an uncertain start or end date), the rules used to reduce the uncertainty surrounding employment spells may be important to the analysis.

To deal with duplicate (or near-duplicate) records, records of work spells that were exact duplicates (in terms of start and end date) were dropped. Where this still left multiple work spells with the same start date, all were dropped except the most recently added spell that contained a certain end date.[35] If none of the spells with the same start date had a certain end date, then all were dropped except the spell that indicated that the job was ongoing (if it existed). If all of the spells with the same start date had end dates of 5 April, then no spells were dropped nothing.

To deal with the uncertain start and end dates, the following rules were implemented:

Correcting uncertain employment end dates using known benefit start dates

- employment end date is uncertain (i.e. set to 5 April);
- benefit start date is after the employment start date, and in the same tax year as the uncertain employment end date.

  e.g. benefit spell: 5 August 2004 to 18 September 2005

  employment spell: 17 March 2004 to 6 April 2005

  Here, the employment end date would be changed to 4 August 2004.

  Note: This rule was applied to New Deal programmes, IB, Severe Disablement Allowance (SDA), IS and JSA spells only.

  290,390 (4.88 per cent) employment spells were corrected as a result of this rule.

[35] A 'certain end date' is one that is not 5 April or 31 December 9999.

Correcting uncertain employment start dates using known benefit end dates

- employment start date is uncertain (i.e. set to 6th April);
- benefit end date is before the employment end date, and in the same tax year as the uncertain employment start date

  e.g. benefit spell: 14 June 2003 to 29 November 2003

  employment spell: 6 April 2003 to 22 March 2004

  Here, the employment start date would be changed to 30 Nov 2003.

  Note: This rule was applied to ND programmes, IB, SDA, IS and JSA spells only.

  289,319 (4.86 per cent) employment spells were corrected as a result of this rule.

C.4 Uncertain benefit spells

The end date of non-JSA benefit claims is also not known with certainty: the NBD and WPLS record the date of the last extract at which a claim was live (extract), and the date before the first extract where a claim did not appear (cdmaxclm).[36] All that is known is that the claim ended at some point between those two dates.

[36] Usually, the gap between cdmaxclm and extract is 13 days for IS spells (because extracts are fortnightly), but the gap can be considerably longer.

Appendix D Constructing outcome and history variables from the Work and Pensions Longitudinal Study

D.1 Definition of the outcome and history variables

Having cleaned the Work and Pensions Longitudinal Study (WPLS), a number of interim datasets were created, recording periods where the individual was in work, periods where the individual was on Jobseeker's Allowance (JSA), periods where the individual was on New Deal for Lone Parents (NDLP), periods where the individual was receiving a disability benefit, periods where the individual was receiving any benefit.

It is then straightforward to use these datasets to create the history and outcome variables. The outcome variables were defined as whether an individual is on benefit/in work X days after they first become eligible for the policies, where X is defined here as 91, 182, 273, 364, 455, 546, 637 & 728 days (corresponding approximately to three-monthly intervals).

Variables were created to describe individuals' benefit-claiming (and work) history during the period 12-30 months (0-30 months for work history) before the individual first became eligible for the lone parent pilots (LPP) (by definition, all lone parents were on benefit in the 12 months before first becoming potentially eligible to the LPPs). This method was used in Dolton *et al.* (2006), although the periods are longer in this analysis (three or five months, rather than 11 weeks).

The variables were constructed in the following way:

- The relevant period was split into six equal-sized periods (three month periods for benefit history and five month periods for the work histories).
- Six indicator variables were calculated indicating whether the person was mainly in work or mainly on benefit during each of the six periods in the period described above.
- Both sets of six variables were independently combined to give two categorical variables, taking values 1 to 64 depending on the ordering of the history over these six periods. For example, an individual who was on benefit in all six quarters might be given value 1, an individual who was on benefit for all but the last of these quarters might be given value 2, and so on.
- These categorical variables were then used to generate 128 indicator variables corresponding to each of the possible work and benefit histories during the six quarters of interest.

Appendix E
Local-area data

This appendix describes the data sources that were used to provide relevant information about the local areas in which lone parents live. All of these data sources could be mapped to the sample of lone parents from the IS History file based on the lone parent's postcode.

E.1 Childcare data

The childcare data derives from Office for Standards in Education's (Ofsted's) records of the number of registered childcare places (all providers have to register if they wish to look after children under eight). This may directly affect the labour supply of individuals in the sample, as lone parents (particularly those with young children) may need access to childcare to enable them to work. Also, higher supply of childcare in an area may indicate higher demand for it, which may, in turn, be indicative of a strong local labour market.

Data from 2003/04 was obtained on the number of crèche places, full day care places, sessional day care places, multiple day-care places, out of school care places and places with childminders in each output area. The data was weighted to give an indication of how many childcare places of each type are available to each child, bearing in mind that children may go to childcare providers in different output areas (but usually within the same super output area, or ward). The estimate of the number of childcare places of each type was defined as the number in the output area itself plus the number in the super output area divided by the number of output areas in the super output area plus the number in the ward divided by the number of output areas in the ward.

E.2 Census data

A number of variables from the 2001 census (provided by the Office for National Statistics (ONS)) were used. Data is available on a variety of topics, including most recent occupation, employment status, housing tenure and ethnicity, to name but a

few, with tables providing both the number of people in each category and the total number of people in the relevant geographic area.[37]

In addition to the standard census tables, a specific request to ONS was made to obtain data on the proportion of workless lone parents with various qualification levels at the middle-layer super output area level (this is a larger area than the lower-layer super output area level used for other census data and the Index of Multiple Deprivation (IMD) data, described in Section E.3).

E.3 Index of Multiple Deprivation

Data from the 2004 IMD (which contains data from 2002) was used at the lower-layer super output area (SOA) level. There are six separate measures of deprivation, relating to employment, housing, crime, environment, education and income, which are also combined to produce an overall measure. In the empirical work, indicators were included for which quintile of the distribution each SOA belongs to.

E.4 NOMIS travel to work area level data

In order to control for differences in the state of the local labour market between areas, data from NOMIS on claimant count unemployment rates and job density ratios for different travel to work areas was used. Travel to work areas are a good estimate of the size of the local labour market as they are areas where 75 per cent of workers living in the area work and 75 per cent of those working in the area live. Job density ratios, defined as the number of jobs in an area divided by the number of people of working age living in the area are both a measure of the proportion activity rate among those living in the area and of the strength of the demand for labour in the area. Annual average claimant count unemployment rates and job density ratios were used from 2000, 2001, 2002 and 2003.

[37] Note that to preserve the confidentiality of personal information, there is a degree of randomisation in the totals, in so much as there are never one or two lone parents in an district in a particular category, only zero or three. This means that the total number of lone parents in each district will not be the same in each table.

Appendix F Explanatory (or matching) variables used in multivariate analysis

This appendix lists the variables included in the test for unobserved differences (Appendix J), and in the main difference-in-differences (DiD) estimates of the impact (Chapter 6). More detail of how some of these variables were constructed can be found in Chapter 4, or in Appendices D and E. For ordinary least squares (OLS) and fully-interacted linear matching (FILM) estimates, these are the variables in the regression (along with the indicator for being in a pilot district); for propensity score matching (PSM) estimates, these are the variables used in the first-stage probit that generates the propensity scores.

In many cases, an additional indicator was included to flag missing values.

1. Smaller set of explanatory variables

Individual-level variables:

Indicator for claimants' sex.

Indicators for claimants' age (banded) at date first potentially eligible.

Number of children at date first potentially eligible.

Age of youngest child at date first potentially eligible.

Amount of Income Support (IS) at start of IS claim.

Whether claimant has been on New Deal for Lone Parents (NDLP) in the 30 months before date first potentially eligible.

Whether claimant has been on Jobseeker's Allowance (JSA) in the 30 months before date first potentially eligible.

Whether claimant has been on a disability benefit in the 30 months before date first potentially eligible.

Whether claimant received a disability premium to IS at start of IS claim.

Proportion of past 30 months claimant has been on benefits.

Proportion of past 30 months claimant has been in work.

Indicators for detailed work and benefit histories over the past 30 months (see Appendix D for details).

Whether claimant has had a one day work spell in the past 30 months[38].

Indicators for the month in which the claimant first became potentially eligible (flow samples only).

Area-level variables (geographic area in brackets denotes the scale at which this is measured where this is not obvious).

Indicator for Jobcentre Plus district.

Proportion of Jobcentre Plus district with integrated offices at date first potentially eligible.

Number of day care, other centre-based care and childminder places per child aged under 8 in local area (weighted average of OA, SOA and ward).

Indicators for quintile of distribution of overall IMD score (SOA).

Unemployment rate in 2002/03 and 2003/04 (TTWA).

Fraction of lone parents in SOA who owned their own property in 2001 Census.

Fraction of lone parents in SOA in work in 2001 Census.

Fraction of non-working lone parents in SOA with level 4 or higher qualifications in 2001 Census.

Fraction of non-working lone parents in SOA with level 3 qualifications in 2001 Census.

---

[38] One day work spells occur when Her Majesty's Revenue and Customs (HMRC) is notified that a job has ended, but they have no idea when the job started (i.e. they do not even know in which tax year it started): the start date for the spell is then set to the day before the (known) end-date.

Fraction of non-working lone parents in SOA with level 2 qualifications in 2001 Census.

Fraction of non-working lone parents in SOA with level 1 qualifications in 2001 Census.

Fraction of non-working lone parents in SOA with unknown qualifications in 2001 Census

2. Larger set of explanatory variables (these were used only in the tests reported in Appendix J)

Individual-level variables:

As above.

Area-level variables:

As above, plus:

Fraction of population in SOA with good health in 2001 Census.

Fraction of households in SOA that are lone parents in 2001 Census.

Occupational breakdown of lone parents in SOA in 2001 Census (7 categories + 1 omitted).

Fraction of lone parent households that do not have a car in SOA in 2001 Census.

Fraction of parents of dependent children who worked full-time in SOA in 2001 Census.

Fraction of parents of dependent children who worked part-time in SOA in 2001 Census.

Fraction of parents of dependent children who were unemployed (ILO definition) in SOA in 2001 Census.

Fraction of lone parents who worked full-time in SOA in 2001 Census.

Fraction of lone parents who were unemployed in SOA in 2001 Census.

Ethnic breakdown of individuals in SOA (four categories and one omitted).

Fraction of lone parent households who owned their house in SOA in 2001 Census.

Fraction of lone parent households who were renting from a private-sector landlord in SOA in 2001 Census.

More detail on the number of childcare places available (six categories).

Table F.1 Variables used in multi-variate analysis

Variable	Comparison districts	Phase 1 pilot districts	Phase 2 pilot districts	Phase 3 pilot districts
Variables from the WPLS				
Proportion of months 30 to 12 before eligibility spent on benefits	22.3%	22.0%	17.4%	13.1%
Proportion of months 30 to 12 before eligibility spent in work	17.2%	15.3%	14.8%	13.2%
Number of children on date first eligible	1.82	1.88	1.86	1.93
Age of youngest child on date first eligible	6.5	6.4	6.7	6.8
Proportion disabled on date first eligible	0.35%	0.22%	0.49%	0.16%
Amount of Income Support at start of claim	£76.35	£81.25	£78.60	£81.42
Proportion disabled at any time	22.1%	17.0%	20.4%	16.3%
Proportion on JSA	9.9%	10.0%	8.7%	7.0%
Proportion who have been on NDLP	18.9%	15.6%	16.2%	14.9%
Census variables				
Proportion of lone parents who are owner occupiers	24.2%	25.1%	21.5%	20.1%
Proportion of lone parents renting from council	40.5%	39.9%	44.4%	42.3%
Proportion of lone parents in other social rented accommodation	15.7%	18.7%	18.8%	25.8%
Proportion of lone parents in privately rented accommodation	19.7%	16.8%	15.9%	11.9%
Proportion of lone parents living in overcrowded accommodation	11.1%	25.5%	22.1%	32.2%
Proportion of parents working part-time	20.7%	16.3%	18.4%	16.0%
Proportion of parents working full-time	38.2%	40.3%	39.6%	40.4%
Unemployment rate among parents	5.8%	6.1%	5.9%	6.5%
Inactivity rate among parents	35.3%	37.0%	36.1%	37.1%
Proportion of lone parents working part-time	22.9%	15.4%	19.5%	14.6%
Proportion of lone parents working full-time	18.2%	23.3%	21.0%	25.4%
Lone parent unemployment rate	6.8%	7.2%	6.8%	7.3%
Lone parent inactivity rate	52.1%	54.1%	52.8%	51.4%
Proportion of lone parents working in higher managerial positions	1.8%	3.0%	2.4%	3.2%
Proportion of lone parents working in lower managerial positions	10.7%	14.9%	12.1%	15.2%
Proportion of lone parents in intermediate occupations	8.7%	10.7%	9.8%	11.8%
Proportion of lone parents who are small employers or own account workers	2.6%	2.5%	2.7%	2.5%

Continued

Table F.1 Continued

Variable	Comparison districts	Phase 1 pilot districts	Phase 2 pilot districts	Phase 3 pilot districts
Proportion of lone parents in lower supervisory positions	4.9%	3.6%	4.7%	3.6%
Proportion of lone parents in semi-routine work	21.2%	15.0%	18.7%	14.9%
Proportion of lone parents in routine work	14.5%	7.8%	11.7%	6.2%
Proportion of lone parents who have never worked or are long-term unemployed	15.1%	19.3%	16.1%	19.0%
Proportion of lone parents in an unclassified occupation	20.5%	23.4%	21.8%	23.0%
Proportion of lone parents without access to a car	57.6%	54.9%	60.1%	56.3%
Proportion white	90.8%	68.4%	79.7%	59.6%
Proportion mixed race	1.6%	3.6%	2.9%	4.0%
Proportion Asian	4.8%	9.9%	9.2%	13.7%
Proportion black	2.2%	15.6%	6.3%	20.1%
Proportion Chinese	0.6%	2.5%	1.9%	2.6%
Proportion of lone parent households	12.9%	13.3%	12.4%	12.7%
Variables from Special Census Request				
Employment rate (msoa level)	65.2%	61.8%	64.6%	61.3%
Proportion of unemployed lone parents with level 4 or 5 qualifications	5.0%	8.6%	7.7%	9.9%
Proportion of unemployed lone parents with level 3 qualifications	5.5%	7.9%	7.2%	8.7%
Proportion of unemployed lone parents with level 2 qualifications	21.1%	22.0%	20.3%	22.2%
Proportion of unemployed lone parents with level 1 qualifications	20.4%	19.1%	18.8%	18.7%
Proportion of unemployed lone parents without any qualifications	43.8%	37.9%	41.7%	35.8%
Proportion of unemployed lone parents with unknown qualification level	4.2%	4.5%	4.3%	4.8%
Childcare variables				
Weighted number of places in crèches per child under eight	0.02	0.01	0.02	0.02
Weighted number of full day care places per child under eight	0.17	0.12	0.21	0.19
Weighted number of sessional day care places per child under eight	0.08	0.07	0.06	0.06
Weighted number of multiple day care places per child under eight	0.08	0.05	0.09	0.05
Weighted number of out of school care places per child under eight	0.11	0.09	0.13	0.13

Continued

Table F.1 Continued

Variable	Comparison districts	Phase 1 pilot districts	Phase 2 pilot districts	Phase 3 pilot districts
Weighted number of childminder places per child under eight	0.12	0.14	0.12	0.12
Weighted number of day care places per child under eight	0.33	0.24	0.37	0.31
IMD variables				
Overall IMD score	39.3	36.0	38.1	34.4
Income deprivation score	0.27	0.27	0.26	0.26
Employment deprivation score	0.19	0.15	0.94	0.13
Health deprivation score	0.89	0.44	0.58	0.39
Education deprivation score	42.2	30.5	35.5	22.1
Housing deprivation score	19.0	30.6	24.9	34.8
Crime deprivation score	0.54	0.65	0.62	0.64
Environment deprivation score	29.1	34.1	36.4	34.6
NOMIS TTWA level data				
Average claimant count unemployment rate: 2000	3.4%	3.4%	3.1%	3.2%
2001	3.0%	3.2%	2.9%	3.0%
2002	2.9%	3.3%	2.9%	3.2%
2003	2.8%	3.3%	2.9%	3.2%
Job density ratio: 2000	0.78	0.91	0.87	0.94
2001	0.79	0.91	0.87	0.94
2002	0.80	0.90	0.87	0.92
2003	0.81	0.92	0.88	0.94

Appendix G
Estimating the impact of the different policy packages

In reality, lone parents living in the lone parent pilots (LPP) districts will be exposed to one of a number of combinations of the Department for Work and Pensions (DWP) and the Department for Education and Skills (DfES) policies, depending on: when they are observed in the data, in which Jobcentre Plus district and/or which Local Education Authority (LEA) they live, how long they have been on Income Support (IS)/Jobseeker's Allowance (JSA), and the age of their youngest child.

The different combinations of policies ('treatments') are:

- In Work Credit (IWC) alone;
- IWC and Work Search Premium (WSP);
- IWC and Extended Schools Childcare (ESC) (for lone parents who do not meet Extended Schools Quarterly Work Focused Interview (ESQWFI) conditions);
- IWC, ESC and ESQWFI (for lone parents who do meet ESQWFI conditions);
- IWC, WSP and ESC (for lone parents who do not meet ESQWFI conditions);
- IWC, WSP, ESC and ESQWFI (for lone parents who do meet ESQWFI conditions).

In addition, those lone parents in ND+fLP districts will experience a slightly different set of services from their personal advisers.[39]

[39] Given that ESC pilots are being implemented differently in each LEA, it is possible to view them as different policies: this increases the number of treatments even further, because there are seven ESC districts in England and three outside. However, it is simpler to think of ESCs as a single treatment of 'providing money to LEAs to improve childcare provision in the best way they can', and estimate the average effect of ESCs across the seven (or ten) areas.

The fact that different districts are operating different policies (or different combinations of policies) is extremely easy to take into account in a linear regression framework. Propensity score matching (PSM) can also be extended to incorporate these different packages: using normal matching techniques, a series of counterfactuals can be constructed, each corresponding to the outcome that would have arisen had a particular lone parent been subject to any of the policies (or combinations of policies) on offer.

By taking differences of these estimates, it is in principle possible to calculate the net impact of some of the policies. Table G.1 explains this point in more detail.

Table G.1 'Pilot' and 'comparison' districts for different combinations of policies

Treatment	Pilot districts	Comparison districts
Impact of IWC alone (compared to nothing)	C London, Staffordshire, everywhere else in London (not NE London), new S-E districts	All districts unaffected by the lone parent pilots
Combined impact of IWC and WSP (compared to nothing)	W London, Cardiff and Vale, Edinburgh etc, Lancashire West, Dudley and Sandwell (not Sandwell) compared to all comparison districts	All districts unaffected by the lone parent pilots
Additional impact of WSP conditional on IWC being present	W London, Cardiff and Vale, Edinburgh etc, Lancashire West, Dudley and Sandwell (not Sandwell)	C London, Staffordshire, everywhere else in London (not NE London)
Combined impact of ESQWFI, ESC, IWC and WSP (compared to nothing)	Bradford, Leicestershire, SE London (Greenwich. Lewisham), Dudley and Sandwell (Sandwell) compared to all comparison districts	All districts unaffected by the lone parent pilots
Combined impact of ESQWFI, ESC and IWC (compared to nothing)	Haringey	All districts unaffected by the lone parent pilots
Additional impact of ESC and ESQWFI conditional on conditional on IWC and WSP being present	Bradford, Leicestershire, SE London (Greenwich, Lewisham), Dudley and Sandwell (Sandwell)	W London, Cardiff and Vale, Edinburgh etc, Lancashire West, Dudley and Sandwell (not Sandwell)
Combined impact of ESC and ESQWFI (compared to nothing)	Grampian & Tayside (part), Forth Valley & Fife, SE Wales (part)	All districts unaffected by the lone parent pilots

Table G.1 shows how the combined impact of ESCs and ESQWFIs on lone parents whose youngest child is at least 12 years old can be estimated. It is hard to separate the impact of these two policies because they are being piloted in the same districts, but there are two strategies:

a) Compare the outcomes of lone parents eligible for ESQWFIs to (otherwise-equivalent) lone parents in the same district whose youngest child is younger than 12. This would make use of the discontinuity in the design of ESQWFIs.

b) Compare the outcomes of lone parents eligible for ESQWFIs to similar lone parents in unaffected districts (having controlled for differences in the districts).

These methods both have potential drawbacks: a) identifies the impact of ESQWFI PLUS the impact of ESC on lone parents whose youngest child is aged 12 or above MINUS the impact of ESC on lone parents whose youngest child is aged under 12: b) identifies the combined impact of ESQWFI and ESC on lone parents whose youngest child is over 12; a similar estimator would identify the impact of ESC alone on lone parents whose youngest child is under 12.

So far, the three LEAs who began ESC pilots in April 2004 have not offered services to lone parents whose youngest child is aged 12 or above. If the impact of ESC on lone parents whose youngest child is over 12 is zero, then method a) will give an estimate of the impact of ESQWFI that is biased down, but method b) will give an unbiased estimate of the impact of ESQWFI.

If, however, other ESC pilots have a non-negative impact on lone parents whose youngest child is aged over 12, and if they have larger impacts on lone parents whose youngest child is under 12 than those whose youngest child is over 12, then the estimates a) and b) above will bound the true value: method a) will give an under-estimate of the impact of ESQWFIs, and method b) will give an over-estimate of the impact of ESQWFIs.[40]

Furthermore, method a) will be of limited use unless ESQWFIs have a large and relatively immediate effect once a lone parent's youngest child turns 12. This is because searching for effects of ESQWFIs (say) 24 months after the youngest child turns 12 means that the comparison group would need to have children who are younger than ten, thereby reducing the similarities between the comparison and pilot group, and weakening the attraction of the regression discontinuity approach.

Given the relatively small and imprecisely estimated impacts presented in this report, it was decided not to estimate the impact of each of the different packages of treatments in Table D.1; instead, this report merely distinguishes between those five districts that operated New Deal Plus for Lone Parents (ND+fLP), and the other districts offering IWC (possibly with WSP).

[40] Both estimates may have large confidence intervals, i.e. may be relatively imprecise.

Table G.2 Policy combinations over time

DfES policies	DWP policies	Phase 1: April 2004 – October 2004	Phase 2: October 2004 – April 2005	Phase 3: April 2005 – October 2005	Phase 4: October 2005 – September 2006	October 2006 – ongoing
ESC and CT	ESQWFI, WSP and IWC	Bradford, SE London (Lewisham)	Bradford, Leicestershire, SE London (Greenwich, Lewisham), Dudley and Sandwell (Sandwell)	Bradford, Leicestershire, SE London (Greenwich, Lewisham), Dudley and Sandwell (Sandwell)	Bradford, Leicestershire, SE London (Greenwich, Lewisham), Dudley and Sandwell (Sandwell)	Bradford, Leicestershire, SE London (Greenwich, Lewisham), Dudley and Sandwell (Sandwell)
ESC and CT	ESQWFI and IWC	N London (Haringey)	N London (Haringey)	N London (Haringey)	N London (Haringey)	N London (Haringey)
Nothing	WSP and IWC	SE London (Greenwich, Bexley	W London, Cardiff and Vale, Edinburgh etc, Lancashire West, Dudley and Sandwell (not Sandwell), SE London (Bexley)	W London, Cardiff and Vale, Edinburgh etc, Lancashire West, Dudley and Sandwell (not Sandwell), SE London (Bexley)	W London, Cardiff and Vale, Edinburgh etc, Lancashire West, Dudley and Sandwell (not Sandwell), SE London (Bexley)	Cardiff and Vale, Edinburgh
CT	IWC	None	Leeds	Leeds	Leeds	None
Nothing	IWC	N London (not Haringey)	C London, Staffordshire, N London (not Haringey)	C London, Staffordshire, everywhere else in London (not NE London)	C London, Staffordshire, N London (not Haringey), everywhere else in London (not NE London), Surrey and Sussex, Essex, Kent, Berkshire, Buckinghamshire and Oxfordshire, Bedfordshire and Hertfordshire,	C London, everywhere else in London (not NE London), Surrey and Sussex, Essex, Kent, Berkshire Buckinghamshire and Oxfordshire, Bedforshire and Hertfordshire, Hampshire and the Isle of Wight.
ESC and CT	ESQWFI	None	Grampian & Tayside (part), Forth Valley & Fife (part), SE Wales (part)	Grampian & Tayside (part), Forth Valley & Fife (part), SE Wales (part)	Grampian & Tayside (part), Forth Valley & Fife (part), SE Wales (part)	None

Continued

Table G.2 Continued

DfES policies	DWP policies	Phase 1: April 2004 – October 2004	Phase 2: October 2004 – April 2005	Phase 3: April 2005 – October 2005	Phase 4: October 2005 – September 2006	October 2006 – ongoing
CT	Nothing	None	Birmingham & Solihull, Liverpool, Oldham & Rochdale	Birmingham & Solihull, Liverpool, Oldham & Rochdale	Birmingham & Solihull, Liverpool, Oldham & Rochdale	None
Nothing	Nothing	Everyone else	Everyone else	Everyone else	Everyone else	Everyone else

Notes: Names refer to Jobcentre Plus District level, names in brackets refer to LEAs, '(part)' means that ESC and CT are limited to a part of the Jobcentre Plus district. ESQWFIs are not in operation until October 2004. From April 2005, Bradford, Leicestershire, SE London, Dudley & Sandwell and North London offered ND+fLP. From October 2006, so will Edinburgh and Cardiff & Vale.

Table G.3 ND+fLP districts

District		Childcare Taster/ Chats	Extended schools	QWFIs	WSP	IWC	Action plans	Childcare assist	Discovery weeks	Emergency fund	Extra admin support	Enhanced training	More voluntary contact	CPM/PA resource	Jobpoints in Chld Ctrs	Flexible provision	Marketing package	In-Work Support	Employment Zone
Jobcentre Plus district	**LEA in which CT/ESC runs**																		
Bradford	Bradford	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
SE London	Greenwich	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
SE London	Lewisham	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
North London	Haringey	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓
Dudley & Sandwell	Sandwell	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Leicestershire	Leicester	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Leicestershire	Leicestershire	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
SE Wales					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Edinburgh, Lothian and Borders					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		

Appendix H
Using Ordinary Least Squares, Fully Integrated Linear Matching and Propensity Score Matching to estimate the impact of the lone parent pilots

The preferred comparison group (lone parents who have been claiming Income Support (IS)/Jobseeker's Allowance (JSA) for at least 12 months and who live in districts that are not affected by the lone parent pilots (LPPs) can be used as a guide to what would have happened to the lone parents potentially affected by the LPPs had they lived in other districts: such individuals can be used to calculate a 'difference' estimate of the impact of the LPPs.

Such an estimator can be implemented using either linear methods (Ordinary Least Squares (OLS) or Fully Integrated Linear Matching (FILM)[41]), or Propensity Score Matching (PSM) techniques. In a linear framework, an estimate comes from a linear regression of the outcome of interest (for example, whether an individual is in employment, or whether they are claiming a particular benefit) on a set of area-based and individual-level control variables, plus an indicator variable for whether

[41] FILM is a more flexible version of OLS, in which each of the X variables is interacted with the treatment variable, thus allowing for heterogeneous treatment effects.

the individual lived in one of the LPP districts. If the parameter estimate associated with this indicator variable is significantly different from zero, then it can be said that the LPPs had a significant effect on the outcome.

To implement PSM, a probit model is run, in which the dependent variable is equal to 1 if the person has access to the LPPs (i.e. is in the pilot group) and to 0 if they do not (i.e. is in the chosen comparison group). This allows a prediction of the probability of being in the pilot group, given the person's individual and local-area characteristics (also known as the propensity score). Each member of the pilot group is then 'matched' to either the individual with the closest propensity score, or to a weighted group of similar individuals (in terms of propensity score) from the chosen comparison group (Appendix J presents estimates using a variety of different methods). Another way of viewing this is that each individual in the LPP districts is compared with *otherwise identical* individuals (or groups of individuals) living in comparison districts.

Once this re-weighting process has occurred, the estimate of the (mean) impact of the LPPs is obtained by comparing the (mean) labour market outcomes of the pilot group with the (mean) labour market outcomes of the matched (weighted) comparison group. If these are significantly different, then the LPPs can be said to have had an impact on labour market outcomes. Estimates derived using PSM will be valid estimates of the true impact of the LPPs if all outcome-relevant differences between the pilot and comparison groups have been controlled for (over and above the absence/presence of the LPPs): the success and reliability of the impact estimates will therefore depend crucially on the amount and quality of the characteristics that can be observed in the available data sources (Chapter 4 has more details of the various data sources used).

The key advantage of PSM over a multivariate linear regression method is that it helps to ensure that the evaluation is comparing genuinely comparable groups.[42] This is because PSM techniques impose what is known as 'common support' by excluding individuals from the pilot group who look very different (in terms of X) from individuals in the comparison group.[43] OLS and FILM, on the other hand, can be implemented on pilot and comparison groups who look very different: there is no requirement for common support, and the assumption of linearity becomes very

---

[42] It is possible to test the similarity of estimates produced by OLS/FILM and PSM, which may be important, as one of the key disadvantages of using PSM is that it is relatively time-consuming to implement (compared to OLS/FILM).

[43] PSM techniques exclude lone parents living in the pilot districts if their propensity score falls outside the range of propensity scores calculated for lone parents living in the comparison districts. This means that for these individuals, there are no lone parents living in the comparison districts who would provide an appropriate comparison group (the basis on which the PSM method rests), such that they need to be excluded from the analysis.

important, as impact estimates are extrapolated outside the range of common support. Under the special conditions: a) that the imposition of common support does not cause any individuals to be dropped from the pilot group, and: b) that the distribution of characteristics between the pilot and comparison groups is identical (such that the re-weighting process does not have any effect), then the two methods are virtually identical.

The fact that PSM imposes common support is not always an advantage: individuals in the pilot districts for whom a good match cannot be found do not contribute to the PSM estimate of the impact of a policy. Technically, the impact estimated by PSM is not the average impact of the programme on all those affected by it; it is the average impact for those on the common support.

Appendix I
The difference-in-differences estimator – detail

The standard multivariate linear regression used to estimate the impact of the lone parent pilots using the difference-in-differences (DiD) methodology was specified as follows:

$$y_{ijt} = X_{ijt}'\beta + \chi TD_{jt} + \alpha_1 D_j + \alpha_2 T_t + \varepsilon_i,$$

where y_{ijt} measures the outcome of interest (either whether off benefit or whether in work) for individual *i* living in district *j* at time *t*, X_{ijt} contains some variables at the individual-level, some at the area-level, and some that vary with time, TD_{jt} is an indicator for whether district *j* operated a lone parent pilot (LPP) at time *t*, D_j was a set of indicators recording whether district *j* was a pilot district (i.e. operated an LPP at some point) and if so which one[44], and is an indicator for whether the outcomes are being measured after the (actual or hypothetical) LPPs had begun (presumed to be April 2004 in the comparison districts) is, therefore, equal to times T_t.

In such a regression, the coefficient (potentially a vector of coefficients) on the set of indicators estimate the (average) difference in outcomes between lone parents in a particular pilot district and the set of all comparison districts before the LPPs began. The coefficient on estimates the (average) difference in outcomes between the periods before and after the LPPs began (and this is assumed to be identical in the pilot and comparison districts). The coefficient on estimates the (average) additional impact of the LPPs: this is the coefficient (or set of coefficients for the regressions

[44] For example, when the regression was run on the flow sample, the vector consisted of 14 indicator variables, one for each pilot district.

using the flow sample that estimate the impact in each Phase) reported in the Tables.[45]

Section 5.4 shows how the impact of the LPPs varied across different types of lone parents. These estimates were derived from a slightly more complicated regression:

$$y_{ijt} = X_{ijt}'\beta + \chi TDZ_{jti} + \alpha_1 D_j Z_i + \alpha_2 T_t + \alpha_3 Z_i + \varepsilon_i$$

where is a set of indicators classifying lone parents (for example, into male and female lone parents, or into lone parents who had recently, in the past or never been on New Deal for Lone Parnts (NDLP)). In such a regression, outcomes are allowed to be different (on average) between the different groups of lone parents in the absence of the LPPs, and these differences are allowed to be different in the pilot and comparison districts, but these differences are assumed not to vary over time.

[45] Some regressions estimated the average impact across all districts, and some estimated the average impact across all districts in a particular phase. The variable was defined accordingly.

Appendix J
Testing for unobserved differences between pilot and comparison districts

This appendix presents the results from analysis designed to test for the presence of unobserved[46] differences between pilot and comparison districts, either in terms of the characteristics of the districts themselves, or of the characteristics of the lone parents who live there. This kind of test (hereafter referred to as a 'test for unobserved differences') looks at the similarity between the outcomes of the chosen comparison group (lone parents on Income Support (IS)/Jobseeker's Allowance (JSA) for at least 12 months living in districts not affected by the lone parent pilots (LPPs)) and those of lone parents living in pilot districts at a time when there were no pilots in operation.

In practice, a test for unobserved differences implements the same methodology that is used to estimate the impact of a genuine pilot or programme, but using data from a time when there was no such programme. This means comparing the proportion of the two groups off benefit or in work at various points in time after a hypothetical (non-existent) programme began, having controlled for a range of individual and local-area characteristics (described in Chapter 4). Specifically, if the test is implemented using Ordinary Least Squares (OLS) or Fully Interacted Linear Matching (FILM) and the parameter estimate associated with the indicator variable for whether an individual lived in a pilot district is significant (even when there is no

[46] This means unobserved by the researcher, i.e. characteristics that it is not possible to control for on the basis of the data sources available. Note that only characteristics that are likely to affect labour market outcomes are important in this definition of unobserved.

pilot in operation); or if it is implemented using Propensity Score Matching (PSM) and the mean labour market outcomes of individuals in the pilot districts are significantly different to those of re-weighted individuals in the comparison districts, then unobserved differences between districts may pose a problem.[47]

Blundell *et al.* (2001) take a slightly different approach in their evaluation of the New Deal for Young People (NDYP). They too use individuals in districts not operating the programme (in this case, NDYP), but to test the validity of this comparison group, Blundell *et al.* (2001) estimate the annual impact of a hypothetical programme over a 16-year period prior to the introduction of NDYP. They view these 16 estimates as representing the distribution of impacts that one would expect to find in the absence of any programme, and then show that their estimated impact of NDYP falls comfortably outside this historical range. Sufficient historical data is not available to do this.

These tests for unobserved differences are implemented using data from April 2002 to March 2004, and by assuming that a hypothetical programme began on 1 April 2002 in the districts in Phases 1-3 of the LPPs. Table J.1 presents the sample sizes of interest.

Table J.1 Sample sizes for hypothetical pilots (introduced 1 April 2002)

	Phase 1	Phase 2	Phase 3	Comparison districts
Stock	41,951	80,509	74,115	314,575
Flow	17,518	45,485	39,864	144,876

The tables below show the mean outcome in the pilot districts, the raw (unadjusted) difference between the pilot and comparison districts (these are the differences implied by Figures M.1 to M.4), and a series of estimates of the treatment effect of the hypothetical policy. To save space, this appendix reports only outcomes after 364 days.

For OLS and FILM, the estimated treatment effect is the coefficient on an indicator variable for being in a pilot district. For the PSM estimates, the estimated treatment effect is the difference in the mean outcomes of individuals living in the pilot districts and appropriately re-weighted individuals living in the comparison districts. In both cases, unobserved differences are said to exist if this treatment effect is different from zero, i.e. there are differences between the pilot and comparison districts (or the individuals living in these districts) that are not adequately captured by the control variables available (to the researcher).

[47] See Appendix H for more details of how these methods can be implemented.

For both the stock and flow samples, the Tables show the estimated treatment effect for each phase, and across all phases. PSM estimates proved sensitive to the local-area characteristics chosen as matching variables, so the Tables show the results using both a smaller and a larger set of explanatory variables (see Box J.1; Appendix F gives the sample means of these and other explanatory variables).

J.1 Flow sample

As shown in the graphs, there are large differences in the unadjusted outcomes between the pilot and comparison groups: lone parents in the pilot group are significantly more likely to be claiming benefits and significantly less likely to be employed than those in the comparison group.

These differences remain after controlling for the small set of explanatory variables: the estimated coefficients in Tables J.2 and J.3 are generally negative and significant, indicating the presence of unobserved[48] differences between the pilot and comparison districts.

Tables J.4 and J.5 show that adding more local-area variables to the set of explanatory/matching variables makes it less likely that unobserved differences are found: this can be seen from the fact that some of the estimated treatment effects become statistically insignificant; however, the PSM estimates indicate that there tends to be a problem with common support[49]: this means that many individuals in the pilot districts have been excluded from the analysis, either because similar individuals could not be found in the comparison districts, or because similar individuals could be found, but that the pilot and comparison districts in which they live are too different. Where some of the treatment group has been dropped, the estimated impact of the LPPs will only apply to the remaining subset of lone parents, who are likely to differ significantly from those lone parents who have been excluded from the analysis.

---

[48] This assumes that the additional variables used in the larger set of explanatory/matching variables have no impact on the labour market outcomes of lone parents in either the pilot or comparison districts.

[49] PSM techniques exclude lone parents living in the pilot districts if their propensity score (calculated on the basis of the set of characteristics outlined in Box J.1) falls outside the range of propensity scores calculated for lone parents living in the comparison districts. This means that for these individuals, there are no lone parents living in the comparison districts who would provide an appropriate comparison group (the basis on which the PSM method rests), such that they need to be excluded from the analysis.

Furthermore, one of the key diagnostic tests used in PSM shows that the median bias of the characteristics of the pilot group compared to the comparison group has actually worsened after matching.[50] This is highly undesirable.

J.2 Stock sample

A very similar pattern of results exists for the stock sample. Tables J.6 and J.7 show that lone parents in the pilot group are significantly more likely to be claiming benefits and significantly less likely to be employed than those in the comparison group, and that these differences remain after controlling for the small set of explanatory variables.

Tables J.8 and J.9 show that the estimated treatment effects are more likely to be statistically insignificant after adding more local-area variables to the set of explanatory/matching variables, but that there are still several statistically significant estimated treatment effects, indicating that there are some unobserved differences between the pilot and comparison districts. Furthermore, as with the flow samples, there is a problem with common support, and the median bias diagnostic is often unfavourable.

[50] For each individual in the pilot group, the difference between their characteristics and those of the matched and unmatched comparison groups is calculated. The median bias is then the median value of the bias found between the characteristics of these two samples: if the median bias is greater (in absolute terms) for the treatment group compared to the matched comparison group (i.e. after matching) than it was between the treatment group compared to the unmatched comparison group (i.e. the raw difference), then it is said that the median bias has increased.

Table J.2 Test for unobserved differences: flow sample, all phases (small set of explanatory/matching variables)

Outcome	Level for comparison group	Raw difference (ppts)	OLS	FILM	PSM (Caliper)	PSM (Local linear regression) (no s/e)	PSM (Kernel)
Off benefit on day 364	18.7%	-4.23	-2.40***	-2.85***	-4.19***	-3.61	-3.57***
In work on day 364	22.5%	-2.31	-1.11***	-1.57***	-0.94	-1.26	-1.47***
N	77,535	43,568	43,568	43,568	43,567	43,567	43,567
Lost to CS					89	89	89

Table J.3 Test for unobserved differences: flow sample, by phase (small set of explanatory/matching variables)

Outcome		Raw difference (*s not included)			OLS			PSM (Caliper)			PSM (local linear regression) (no s/e)			PSM (Kernel)		
(by phase)	Level, comparison districts	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Off benefit on day 364	18.7%	-4.91	-2.76	-5.79	-3.39 ***	-1.49 ***	-3.62 ***	-3.88 ***	-1.77 ***	-4.51 ***	-3.82	-1.12	-5.04	-3.80 ***	-2.23 ***	-5.07 ***
In work on day 364	22.5%	-3.68	-1.85	-2.07	-2.23 ***	0.52* *	-1.51 ***	-2.94 ***	-0.64	-1.06	-2.53	-2.13	-1.43	-2.45 ***	-1.01 **	-1.39
N	77,535	9,225	19,679	14,664	9,225	19,679	14,664	9,225	19,566	14,664	9,225	19,566	14,664	9,225	19,566	14,664
Lost to CS								0	112	0	0	112	0	0	112	0

Table J.4 Test for unobserved differences: flow sample, all phases (large set of explanatory/matching variables)

Outcome	Level for comparison group	Raw difference	OLS	FILM	PSM (Caliper)	PSM (Local linear regression) (no s/e)	PSM (Kernel)
Off benefit on day 364	18.7%	-4.23***	-0.93***		-1.25	-1.47	-1.22
In work on day 364	22.5%	-2.31***	-0.56**		-0.39	-0.86	0.75
N treated	43,568				35,493	35,493	35,493
Lost to CS					8,074	8,074	8,074

Table J.5 Test for unobserved differences: flow sample, by phase (large set of explanatory/matching variables)

Outcome		Raw difference (*s not included)			OLS			PSM (Caliper)			PSM (local linear regression) (no s/e)			PSM (Kernel)		
(by phase)	Level, comparison districts	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Off benefit on day 364	18.7%	-4.91	-2.76	-5.79	-1.84***	-0.37	-2.25***	0.50	-1.56	-3.28	-1.35	-1.20	-2.50	-0.49	-1.21	-1.97
In work on day 364	22.5%	-3.68	-1.85	-2.07	-1.76***	-0.11	-1.09**	2.04	1.41	-1.89	0.66	0.53	-3.16	-0.66	0.50	-0.98
N	43,568	9,225	19,679	14,664				7,195	18,807	10,793	7,195	19,209	10,793	7,195	19,209	10,793
Lost to CS								2,030	871	3,871	2,030	469	3,871	2,030	469	3,871

Table J.6 Test for unobserved differences: stock sample, all phases (small set of explanatory/matching variables)

Outcome	Level for comparison group	Raw difference	OLS	FILM	PSM (Caliper)	PSM (Local linear regression) (no s/e)	PSM (Kernel)
Off benefit on day 364	13.3%	-3.01***	-1.45***		-3.66***	-3.33	-3.29***
In work on day 364	17.4%	-1.78***	-1.03***		-3.01***	-2.62	-2.67***
N treated	196,575				196,575	196,575	196,575
Lost to CS					0	0	0

Table J.7 Test for unobserved differences: stock sample, by phase (small set of explanatory/matching variables)

Outcome		Raw difference (*s not included)			OLS			PSM (Caliper)			PSM (local linear regression) (no s/e)			PSM (Kernel)		
(by phase)	Level, comparison districts	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Off benefit on day 364	13.3%	-3.49	-1.53	-4.35	-3.20 ***	-0.56 ***	-3.70 ***	-3.69 ***	-1.68 ***	-4.72 ***	-3.38	-1.55	-4.71	-3.46 ***	-1.53 ***	-4.60 ***
In work on day 364	17.4%	-2.21	-1.45	-1.88	-1.90 ***	-0.57 ***	-2.33 ***	-2.53 ***	-1.75 ***	-3.46 ***	-2.42	-1.46	-3.29	-2.46 ***	-1.51 ***	-3.25 ***
N	314,565	41,951	80,495	74,115	41,951	80,495	74,115	41,951	80,393	74,115	41,951	80,393	74,115	41,951	80,393	74,115
Lost to CS								0	102	0	0	102	0	0	102	0

Table J.8 Test for unobserved differences: stock sample, all phases (large set of explanatory/matching variables)

Outcome	Level for comparison group	Raw difference	OLS	FILM	PSM (Caliper)	PSM (Local linear regression) (no s/e)	PSM (Kernel)
Off benefit on day 364	13.3%	-3.02***	-0.21		-2.82	-2.23	-3.59***
In work on day 364	17.4%	-1.78***	-0.82***		-2.21	-3.42	-3.30***
N treated					166,407	166,407	166,407
Lost to CS					30,168	30,168	30,168

Table J.9 Test for unobserved differences: stock sample, by phase (large set of explanatory/matching variables)

Outcome	Level, comparison districts	Raw difference (*s not included)			OLS			PSM (Caliper)			PSM (local linear regression) (no s/e)			PSM (Kernel)		
(by phase)		1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Off benefit on day 364	13.3%	-3.49	-1.53	-4.35	-1.71 ***	0.54 ***	-2.64 ***	-8.71 **	-2.47 ***	-6.40	-3.00	-2.19	-4.96	-5.98 ***	-2.07 ***	-5.41 ***
In work on day 364	17.4%	-2.22	-1.45	-1.88	-2.07 ***	-0.36 **	-2.82 ***	-7.73 *	-1.56 **	-3.37	-2.28	-2.02	-3.74	-3.78	-1.91 ***	-4.78 ***
N								40,825	77,013		41,028	77,013	74,115	41,028	77,013	74,115
Lost to CS								1,126	3,481		923	3,481	0	923	3,481	0

Notes for all tables:
* significant at the ten per cent level, ** significant at the five per cent level, *** significant at the one per cent level. For the PSM results, the standard errors have been calculated conditional on the matching probit: this will tend to underestimate the true standard errors and therefore overstate the significance of the coefficients.
(h) in the FILM column represents evidence of heterogeneous returns at the five per cent level.
Standard errors unavailable for local linear regression matching, so no significance levels are reported.
The number lost to common support is a count of the observations in the pilot group that fall outside of the 'support' of the comparison group.

J.3 Conclusions from the tests for unobserved differences

This appendix has presented descriptive data from a period of time before the LPPs began, together with the results of a formal test for unobserved differences (between the characteristics of the pilot and comparison districts, or between the characteristics of the lone parents living in these pilot and comparison districts). Such a test is equivalent to testing for the impact of a non-existent policy using the same treatment and comparison groups that are to be used in the impact evaluation of the true pilots.

As can be seen from the Tables, at least some of these tests find significant unobserved differences between pilot and comparison districts: in general, they show that lone parents living in the pilot districts had consistently worse labour market outcomes than apparently comparable lone parents living in the comparison districts. If an evaluation of the LPPs were to be carried out using OLS, FILM or PSM techniques, this difference in labour market outcomes (due to unobserved characteristics) would be attributed to the pilots, such that any estimate would understate the impact of the LPPs on labour market outcomes.

This is the reason why a difference-in-difference (DiD) estimator is used to estimate the impact of the LPPs: although not all of the tests indicate unobserved differences, enough of them do to undermine confidence that all local-area effects are captured by the set of explanatory/matching variables outlined in Box J.1 above. Chapter 5, therefore, presents these difference-in-difference estimates of the impact of the LPPs.[51]

[51] Note that it was decided to use the smaller set of explanatory variables in the main analysis.

Appendix K
Mean outcomes and sample sizes

These tables show mean outcomes and sample sizes for the pilot and comparison groups – by phase, and for the stock and flow samples separately.

Table K.1 Average level of benefit outcome, flow sample

Per cent off benefit after months	Level for comparison group	Pilot group (all phases)	Pilot group (Phase 1)	Pilot group (Phase 2)	Pilot group (Phase 3)
3	0.071	0.052	0.044	0.063	0.043
6	0.122	0.094	0.082	0.109	0.081
9	0.164	0.127	0.112	0.145	0.114
12	0.196	0.152	0.136	0.171	0.147

Table K.2 Average level of work outcome, flow sample

Per cent in work after months	Level for comparison group	Pilot group (all phases)	Pilot group (Phase 1)	Pilot group (Phase 2)	Pilot group (Phase 3)
3	0.228	0.202	0.178	0.221	0.213
6	0.241	0.208	0.186	0.233	0.256
9	0.243	0.200	0.191	0.222	n/a
12	0.258	0.201	n/a	n/a	n/a

Table K.3 Sample sizes, flow sample (benefit outcome)

	Comparison group	Pilot group (all phases)	Pilot group (Phase 1)	Pilot group (Phase 2)	Pilot group (Phase 3)
3	109,163	38,560	14,480	16,928	7,152
6	109,163	38,560	14,480	16,928	7,152
9	92,187	28,254	12,372	12,354	3,528
12	77,994	18,808	10,316	8,281	211

Table K.4 Sample sizes, flow sample (work outcome)

	Comparison group	Pilot group (all phases)	Pilot group (Phase 1)	Pilot group (Phase 2)	Pilot group (Phase 3)
3	92,187	28,254	12,372	12,354	3,528
6	77,994	18,808	10,316	8,281	211
9	56,859	10,989	7,773	3,216	n/a
12	44,867	5,542	n/a	n/a	n/a

Table K.5 Average level of benefit outcomes, stock sample

Per cent off benefit after months	Comparison group (Phase 1)	Comparison group (Phase 2)	Comparison group (Phase 3)	Pilot group (Phase 1)	Pilot group (Phase 2)	Pilot group (Phase 3)
3	0.040	0.043	0.034	0.027	0.036	0.022
6	0.072	0.076	0.069	0.044	0.063	0.045
9	0.114	0.107	0.102	0.075	0.090	0.068
12	0.137	0.133	0.130	0.098	0.113	0.092
15	0.162	0.159	n/a	0.117	0.138	n/a
18	0.180	n/a	n/a	0.132	n/a	n/a
21	0.207	n/a	n/a	0.154	n/a	n/a
24	0.223	n/a	n/a	0.171	n/a	n/a
Sample size	299,468	292,343	285,132	42,374	77,290	71,705

Table K.6 Average level of work outcomes, stock sample

Per cent in work after months	Comparison group (Phase 1)	Comparison group (Phase 2)	Comparison group (Phase 3)	Pilot group (Phase 1)	Pilot group (Phase 2)	Pilot group (Phase 3)
3	0.139	0.141	0.141	0.119	0.129	0.126
6	0.155	0.156	0.153	0.129	0.142	0.134
9	0.171	0.168	n/a	0.141	0.151	n/a
12	0.181	0.178	n/a	0.150	0.160	n/a
15	0.196	n/a	n/a	0.158	n/a	n/a
18	0.207	n/a	n/a	0.167	n/a	n/a
Sample size	299,468	292,343	285,132	42,374	77,290	71,705

Appendix L
Impact estimates for different groups of lone parents

Table L.1 Estimated impact of the LPPs on per cent off benefit, by gender (ppts)

Per cent off benefit after months	Female	Male
Flow sample, all phases		
3	-0.20 (0.19)	0.21 (0.62)
6	0.08 (0.26)	0.14 (0.82)
9	0.28 (0.33)	0.12 (1.03)
12	0.19 (0.42)	1.01 (1.27)
Sample size[1]	35,682	2,878
Stock sample, phase 1		
3	0.14 (0.15)	-0.03 (0.60)
6	0.03 (0.19)	-0.58 (0.79)
9	0.22 (0.24)	-0.65 (0.98)
12	0.59 (0.26)**	-0.70 (1.06)
15	0.54 (0.27)**	-1.11 (1.13)
18	0.83 (0.29)***	-0.73 (1.18)
21	0.93 (0.30)***	-0.20 (1.25)
24	1.27 (0.31)***	-0.09 (1.28)
Sample size	40,256	2,118

Continued

Table L.1 Continued

Per cent off benefit after months	Female	Male
Stock sample, phase 2		
3	0.08 (0.11)	-0.32 (0.45)
6	0.03 (0.15)	-0.62 (0.59)
9	0.20 (0.18)	-0.69 (0.71)
12	0.31 (0.19)	-0.87 (0.78)
15	0.71 (0.21)***	-0.87 (0.83)
Sample size	73,080	4,210
Stock sample, phase 3		
3	0.48 (0.12)***	-0.06 (0.47)
6	0.69 (0.16)***	0.24 (0.63)
9	1.25 (0.19)***	-0.04 (0.77)
12	1.24 (0.21)***	0.84 (0.84)
Sample size	68,304	3,401

Note: authors' calculations based on data and samples described in the text.
Numbers in brackets represent standard errors:
* = significant at ten per cent level, ** = significant at five per cent level, *** = significant at one per cent level.
Results are presented in percentage points (ppts), so an estimate result of -0.16 means -0.16 ppts, not - 16ppts.

[1] Note that the sample size quoted here is for the flow sample at 91 days. This figure will necessarily decrease over time, although there is no reason to expect that the relative sizes of the different categories will alter.

Table L.2 Estimated impact of the LPPs on per cent in work, by gender (ppts)

Per cent in work after months	Female	Male
Flow sample, all phases		
3	0.16 (0.21)	0.76 (0.65)
6	0.60 (0.30)**	0.75 (0.91)
9	0.81 (0.43)*	-0.29 (1.25)
12	0.38 (0.65)	-0.71 (1.84)
Sample size[1]	26,102	2,152
Stock sample, phase 1		
3	0.22 (0.17)	0.08 (0.72)
6	0.26 (0.20)	0.21 (0.83)
9	0.21 (0.22)	0.29 (0.91)
12	0.26 (0.23)	-0.74 (0.97)
15	0.74 (0.26)***	-0.32 (1.06)
18	0.98 (0.27)***	0.11 (1.11)
Sample size	40,256	2,118
Stock sample, phase 2		
3	0.25 (0.12)**	-0.11 (0.50)
6	0.39 (0.15)***	-0.43 (0.59)
9	0.39 (0.16)**	-0.34 (0.64)
12	0.63 (0.17)***	0.32 (0.69)
Sample size	73,080	4,210
Stock sample, phase 3		
3	0.78 (0.13)***	0.01 (0.54)
6	1.16 (0.15)***	0.37 (0.63)
Sample size	68,304	3,401

Note: authors' calculations based on data and samples described in the text.
Numbers in brackets represent standard errors:
* = significant at ten per cent level, ** = significant at five per cent level, *** = significant at one per cent level.
Results are presented in percentage points (ppts), so an estimate result of -0.16 means -0.16 ppts, not - 16ppts.

[1] Note that the sample size quoted here is for the flow sample at 91 days. This figure will necessarily decrease over time, although there is no reason to expect that the relative sizes of the different categories will alter.

Table L.3 Estimated impact of the LPPs on per cent off benefit, by age of youngest child (ppts)

Per cent off benefit after months	0-1	1-3	3-4	5-8	8-11	11+
Flow sample, all phases						
3	-0.51 (0.37)	-0.30 (0.35)	-0.37 (0.65)	-0.14 (0.47)	0.85 (0.56)	0.01 (0.43)
6	-0.61 (0.48)	-0.07 (0.46)	1.17 (0.85)	0.99 (0.62)	0.56 (0.73)	0.04 (0.57)
9	-0.65 (0.62)	0.33 (0.59)	1.30 (1.07)	0.91 (0.79)	1.35 (0.93)	-0.32 (0.72)
12	-0.44 (0.77)	-0.43 (0.75)	1.51 (1.33)	0.17 (0.98)	1.23 (1.15)	0.71 (0.90)
Sample size[1]	10,939	12,142	5,139	7,614	5,901	8,485
Stock sample, phase 1						
3	0.30 (0.56)	0.37 (0.30)	0.16 (0.46)	-0.29 (0.31)	-0.26 (0.35)	0.31 (0.29)
6	0.06 (0.73)	0.06 (0.40)	0.17 (0.61)	-0.12 (0.41)	-0.61 (0.46)	0.29 (0.38)
9	-0.74 (0.90)	0.53 (0.49)	0.47 (0.75)	-0.06 (0.51)	-0.45 (0.57)	0.51 (0.47)
12	-0.98 (0.97)	0.81 (0.53)	0.91 (0.81)	0.24 (0.55)	0.14 (0.61)	0.95 (0.51)
15	-2.15 (1.04)**	1.30 (0.57)**	0.53 (0.86)	0.52 (0.58)	0.06 (0.65)	0.72 (0.54)
18	-2.06 (1.09)*	1.59 (0.59)***	0.74 (0.90)	0.91 (0.61)	0.08 (0.68)	1.46 (0.57)***
21	-1.16 (1.15)	0.91 (0.63)	1.45 (0.95)	0.94 (0.65)	0.18 (0.72)	1.75 (0.60)***
24	-0.65 (1.18)	1.29 (0.65)**	0.93 (0.98)	1.74 (0.67)***	0.79 (0.74)	1.88 (0.61)***
Sample size	5,890	12,137	6,988	11,571	9,688	13,005
Stock sample, phase 2						
3	0.73 (0.43)*	0.04 (0.24)	0.26 (0.37)	-0.14 (0.25)	0.23 (0.27)	-0.09 (0.22)
6	-0.44 (0.57)	0.06 (0.31)	0.47 (0.48)	-0.07 (0.32)	0.33 (0.36)	-0.24 (0.29)
9	-0.51 (0.68)	0.08 (0.38)	0.13 (0.58)	0.20 (0.39)	0.44 (0.43)	-0.24 (0.35)
12	-0.57 (0.74)	-0.20 (0.41)	0.09 (0.63)	0.12 (0.42)	0.39 (0.47)	0.40 (0.38)
15	0.11 (0.79)	0.28 (0.44)	0.49 (0.67)	0.56 (0.45)	0.50 (0.50)	0.68 (0.40)
Sample size	10,913	21,415	12,443	20,423	17,584	24,612

Continued

Table L.3 Continued

Per cent off benefit after months	0-1	1-3	3-4	5-8	8-11	11+
Stock sample, phase 3						
3	1.66 (0.43)***	0.35 (0.23)	0.21 (0.35)	0.34 (0.24)	0.53 (0.27)*	0.45 (0.22)**
6	1.24 (0.58)**	0.36 (0.32)	0.42 (0.48)	0.60 (0.33)*	0.78 (0.37)**	0.97 (0.30)***
9	2.25 (0.70)***	0.76 (0.38)**	1.09 (0.58)	1.01 (0.39)***	1.14 (0.44)***	1.49 (0.36)***
12	0.93 (0.76)	0.51 (0.42)	0.60 (0.63)	1.14 (0.43)***	1.57 (0.49)***	1.95 (0.40)***
Sample size	9,754	20,424	12,078	19,627	16,358	21,909

Note: authors' calculations based on data and samples described in the text.
Numbers in brackets represent standard errors:
* = significant at ten per cent level, ** = significant at five per cent level, *** = significant at one per cent level.
Results are presented in percentage points (ppts), so an estimate result of -0.16 means -0.16 ppts, not - 16ppts.

[1] Note that the sample size quoted here is for the flow sample at 91 days. This figure will necessarily decrease over time, although there is no reason to expect that the relative sizes of the different categories will alter.

Table L.4 Estimated impact of the LPPs on per cent in work, by age of youngest child (ppts)

Per cent in work after months	0-1	1-3	3-4	5-8	8-11	11+
Flow sample, all phases						
3	0.33 (0.39)	0.40 (0.37)	-0.28 (0.68)	0.01 (0.50)	0.72 (0.59)	-0.20 (0.46)
6	0.56 (0.54)	0.96 (0.53)*	0.86 (0.95)	0.70 (0.70)	0.74 (0.82)	-0.26 (0.64)
9	0.81 (0.75)	1.24 (0.75)*	1.55 (1.34)	1.23 (0.99)	0.40 (1.16)	-0.92 (0.90)
12	-0.03 (1.12)	0.30 (1.09)	1.38 (1.93)	-0.41 (1.41)	0.27 (1.68)	-1.01 (1.33)
Sample size[1]	8,082	8,755	3,779	5,579	4,316	6,228
Stock sample, phase 1						
3	0.67 (0.66)	0.31 (0.36)	-0.09 (0.55)	1.02 (0.37)***	-0.55 (0.42)	0.01 (0.34)
6	0.41 (0.76)	0.57 (0.42)	-0.20 (0.63)	1.11 (0.43)**	-0.56 (0.48)	-0.14 (0.40)
9	0.26 (0.83)	0.37 (0.45)	-0.12 (0.69)	1.08 (0.47)**	-0.63 (0.52)	-0.33 (0.43)
12	-0.01 (0.89)	0.23 (0.49)	-0.44 (0.74)	1.18 (0.50)**	-0.40 (0.56)	-0.10 (0.46)
15	0.72 (0.98)	0.46 (0.53)	0.29 (0.81)	1.45 (0.55)***	0.03 (0.61)	0.30 (0.51)
18	0.48 (1.02)	0.72 (0.56)	0.26 (0.84)	1.96 (0.57)***	-0.02 (0.64)	0.71 (0.53)
Sample size	5,890	12,137	6,988	11,571	9,688	13,005
Stock sample, phase 2						
3	0.17 (0.48)	0.43 (0.27)	-0.06 (0.41)	0.71 (0.27)***	0.36 (0.30)	-0.23 (0.24)
6	0.31 (0.56)	0.65 (0.31)	-0.03 (0.48)	0.75 (0.32)	0.40 (0.36)	-0.08 (0.29)
9	-0.55 (0.61)	0.41 (0.34)	0.56 (0.52)	0.58 (0.35)*	0.41 (0.39)	-0.10 (0.31)
12	-0.31 (0.66)	0.11 (0.37)	1.11 (0.56)**	1.27 (0.38)***	0.57 (0.42)	0.22 (0.34)
Sample size	10,913	21,415	12,443	20,423	17,584	24,612

Continued

Table L.4 Continued

Per cent in work after months	0-1	1-3	3-4	5-8	8-11	11+
Stock sample, phase 3						
3	-0.11 (0.49)	0.50 (0.27)*	1.34 (0.41)***	0.80 (0.28)***	0.21 (0.31)	1.08 (0.26)***
6	0.68 (0.57)	0.37 (0.31)	1.77 (0.47)***	0.95 (0.32)***	0.97 (0.36)***	1.51 (0.30)***
Sample size	9,754	20,424	12,078	19,627	16,358	21,909

Note: authors' calculations based on data and samples described in the text.
Numbers in brackets represent standard errors:
* = significant at ten per cent level, ** = significant at five per cent level, *** = significant at one per cent level.
Results are presented in percentage points (ppts), so an estimate result of -0.16 means -0.16 ppts, not - 16ppts.

[1] Note that the sample size quoted here is for the flow sample at 91 days. This figure will necessarily decrease over time, although there is no reason to expect that the relative sizes of the different categories will alter.

Table L.5 Estimated impact of the LPPs on per cent off benefit, by number of children (ppts)

Per cent off benefit after months	1	2	3	4	5	6
Flow sample, all phases						
3	-0.39 (0.24)	0.47 (0.35)	-0.70 (0.53)	-0.14 (0.86)	0.21 (1.53)	5.66 (2.67)**
6	-0.22 (0.31)	1.13 (0.46)**	-0.60 (0.70)	-0.62 (1.13)	-0.23 (2.01)	4.38 (3.51)
9	-0.08 (0.40)	0.93 (0.40)	-0.37 (0.88)	1.39 (1.42)	2.75 (2.52)	2.80 (4.42)
12	-0.00 (0.51)	0.49 (0.74)	-0.15 (1.10)	1.94 (1.78)	1.75 (3.13)	1.78 (5.41)
Sample size[1]	22,804	9,365	4,029	1,594	514	179
Stock sample, phase 1						
3	0.14 (0.21)	-0.08 (0.24)	0.62 (0.35)*	0.27 (0.57)	-0.68 (1.00)	-0.32 (1.72)
6	-0.24 (0.28)	-0.17 (0.31)	0.80 (0.46)*	0.59 (0.75)	-0.56 (1.31)	0.99 (2.26)
9	-0.10 (0.34)	-0.06 (0.39)	0.83 (0.57)	1.83 (0.92)**	0.12 (1.61)	-0.75 (2.78)
12	0.57 (0.37)	0.03 (0.42)	0.91 (0.61)	1.93 (1.00)*	0.32 (1.74)	-1.78 (3.01)
15	0.20 (0.40)	0.20 (0.45)	1.06 (0.65)	2.26 (1.06)**	-0.53 (1.86)	-0.14 (3.20)
18	0.58 (0.42)	0.45 (0.47)	1.08 (0.68)	2.46 (1.11)**	0.76 (1.94)	1.29 (3.35)
21	0.68 (0.44)	0.50 (0.50)	1.11 (0.72)	3.56 (1.18)***	0.92 (2.06)	1.23 (3.55)
24	0.77 (0.45)	1.09 (0.51)**	1.56 (0.74)**	3.93 (1.21)***	0.21 (2.11)	2.95 (3.64)
Sample size	17,958	14,101	6,561	2,490	846	291
Stock sample, phase 2						
3	-0.05 (0.16)	0.30 (0.19)	-0.06 (0.28)	-0.06 (0.46)	-0.07 (0.81)	-1.38 (1.44)
6	-0.12 (0.21)	0.21 (0.25)	-0.06 (0.37)	-0.20 (0.60)	-0.14 (1.06)	0.52 (1.88)
9	-0.08 (0.25)	0.55 (0.30)*	-0.15 (0.44)	0.28 (0.72)	-0.50 (1.27)	3.02 (2.26)
12	-0.01 (0.28)	0.67 (0.32)**	-0.04 (0.48)	0.24 (0.78)	0.36 (1.38)	1.82 (2.46)
15	0.47 (0.29)	0.94 (0.35)***	0.37 (0.51)	0.76 (0.84)	-0.05 (1.47)	-0.63 (2.62)
Sample size	34,566	24,992	11,204	4,371	1,471	477

Continued

Table L.5 Continued

Per cent off benefit after months	1	2	3	4	5	6
Stock sample, phase 3						
3	0.00 (0.16)	0.87 (0.19)***	0.85 (0.27)***	0.24 (0.76)	0.40 (0.76)	1.24 (1.31)
6	0.20 (0.22)	0.96 (0.25)***	1.37 (0.37)***	0.31 (0.58)	0.52 (1.03)	1.97 (1.76)
9	0.65 (0.27)**	1.65 (0.31)***	1.61 (0.44)***	1.18 (0.70)	0.98 (1.24)	1.09 (2.13)
12	0.79 (0.29)***	1.77 (0.34)***	1.32 (0.48)***	1.12 (0.77)	0.16 (1.36)	0.14 (2.33)
Sample size	30,871	23,205	10,996	4,453	1,474	506

Note: authors' calculations based on data and samples described in the text.
Numbers in brackets represent standard errors:
* = significant at ten per cent level, ** = significant at five per cent level, *** = significant at one per cent level.
Results are presented in percentage points (ppts), so an estimate result of -0.16 means -0.16 ppts, not - 16ppts.

[1] Note that the sample size quoted here is for the flow sample at 91 days. This figure will necessarily decrease over time, although there is no reason to expect that the relative sizes of the different categories will alter.

Table L.6 Estimated impact of the LPPs on per cent in work, by number of children (ppts)

Per cent in work after months	1	2	3	4	5	6
Flow sample, all phases						
3	0.34 (0.25)	0.44 (0.37)	-1.17 (0.56)**	0.41 (0.90)	-0.21 (1.60)	-1.13 (2.80)
6	0.58 (0.36)	0.89 (0.53)*	-0.28 (0.79)	1.62 (1.27)	0.36 (2.24)	-1.40 (3.84)
9	0.60 (0.51)	1.05 (0.75)	0.33 (1.11)	0.87 (1.78)	0.86 (3.10)	-1.68 (5.36)
12	-0.25 (0.77)	1.11 (1.08)	0.14 (1.62)	2.09 (2.51)	-0.33 (4.30)	3.01 (7.37)
Sample size[1]	16,643	6,908	2,953	1,173	389	131
Stock sample, phase 1						
3	-0.02 (0.25)	0.16 (0.28)	0.82 (0.42)**	0.08 (0.68)	1.54 (1.18)	1.40 (2.04)
6	-0.11 (0.29)	-0.01 (0.33)	1.45 (0.48)***	0.86 (0.78)	1.70 (1.37)	0.16 (2.36)
9	-0.34 (0.32)	0.12 (0.36)	1.26 (0.52)**	1.40 (0.85)*	2.03 (1.49)	-0.19 (2.57)
12	-0.36 (0.34)	0.07 (0.39)	1.44 (0.56)***	1.31 (0.92)	2.19 (1.60)	0.97 (2.76)
15	0.10 (0.38)	0.76 (0.42)**	1.70 (0.62)***	1.73 (1.00)*	1.53 (1.75)	0.77 (3.02)
18	0.53 (0.39)	0.81 (0.44)*	1.72 (0.64)***	2.22 (1.04)**	2.06 (1.82)	1.17 (3.14)
Sample size	17,958	14,101	6,561	2,490	846	291
Stock sample, phase 2						
3	0.03 (0.18)	0.60 (0.21)***	0.10 (0.31)	0.05 (0.51)	0.44 (0.89)	-0.99 (1.59)
6	0.19 (0.21)	0.56 (0.25)**	0.13 (0.37)	0.87 (0.60)	0.75 (1.06)	-0.16 (1.88)
9	0.27 (0.23)	0.37 (0.27)	0.47 (0.40)	0.50 (0.65)	0.50 (0.65)	-0.52 (2.04)
12	0.49 (0.25)**	0.85 (0.29)***	0.46 (0.43)	0.57 (0.70)	0.57 (0.70)	-0.60 (2.20)
Sample size	34,566	24,992	11,204	4,371	1,471	477

Continued

Table L.6 Continued

Per cent in work after months	1	2	3	4	5	6
Stock sample, phase 3						
3	0.57 (0.19)***	0.81 (0.22)***	1.27 (0.31)***	0.42 (0.50)	0.13 (0.88)	0.79 (1.50)
6	0.89 (0.22)***	1.29 (0.25)***	1.46 (0.36)***	1.06 (0.58)*	0.95 (1.02)	0.70 (1.74)
Sample size	30,871	23,205	10,996	4,453	1,474	506

Note: authors' calculations based on data and samples described in the text.
Numbers in brackets represent standard errors:
* = significant at ten per cent level, ** = significant at five per cent level, *** = significant at one per cent level.
Results are presented in percentage points (ppts), so an estimate result of -0.16 means -0.16 ppts, not - 16ppts.

[1] Note that the sample size quoted here is for the flow sample at 91 days. This figure will necessarily decrease over time, although there is no reason to expect that the relative sizes of the different categories will alter.

Table L.7 Estimated impact of the LPPs on per cent off benefit, by quarter (ppts)

Per cent off benefit after months	1	2	3	4	5	6
Flow sample, all phases						
3	-0.22 (0.33)	-0.68 (0.31)**	-0.20 (0.38)	0.29 (0.36)	0.07 (0.58)	-0.67 (0.56)
6	-0.97 (0.42)**	-0.10 (0.40)	0.59 (0.49)	0.19 (0.47)	-0.42 (0.75)	0.66 (0.73)
9	-0.24 (0.49)	0.02 (0.53)	0.51 (0.56)	0.31 (0.76)	-0.77 (0.86)	1.41 (2.97)
12	-0.38 (0.62)	-0.71 (0.59)	1.79 (0.83)	-0.03 (0.89)	-2.40 (2.60)	
Sample size[1]	9,067	11,286	6,510	7,312	2,125	2,260

Note: authors' calculations based on data and samples described in the text.
Numbers in brackets represent standard errors:
* = significant at ten per cent level, ** = significant at five per cent level, *** = significant at one per cent level.
Results are presented in percentage points (ppts), so an estimate result of -0.16 means -0.16 ppts, not - 16ppts.

[1] Note that the sample size quoted here is for the flow sample at 91 days. This figure will necessarily decrease over time, although there is no reason to expect that the relative sizes of the different categories will alter.

Table L.8 Estimated impact of the LPPs on per cent in work, by quarter (ppts)

Per cent in work after months	1	2	3	4	5	6
Flow sample, all phases						
3	0.21 (0.31)	0.76 (0.34)**	0.30 (0.36)	-0.26 (0.49)	0.61 (0.56)	0.93 (1.95)
6	0.79 (0.45)*	1.42 (0.42)***	1.10 (0.60)	0.24 (0.64)	-1.70 (1.93)	
9	1.06 (0.52)**	0.11 (0.71)	1.07 (0.75)	-0.59 (3.58)		
12	0.70 (0.80)	-0.48 (0.82)	3.48 (2.47)			
Sample size[8]	9,067	7,662	6,510	2,738	2,125	152

Note: authors' calculations based on data and samples described in the text.
Numbers in brackets represent standard errors:
* = significant at ten per cent level, ** = significant at five per cent level, *** = significant at one per cent level.
Results are presented in percentage points (ppts), so an estimate result of -0.16 means -0.16 ppts, not - 16ppts.

[1] Note that the sample size quoted here is for the flow sample at 91 days. This figure will necessarily decrease over time, although there is no reason to expect that the relative sizes of the different categories will alter.

Appendix M
Work and benefit outcomes for the stock and the flow

This appendix gives an overview of the differences between the lone parents in the pilot and comparison districts by comparing the average outcomes (whether off benefit or in work) in the pilot and comparison districts, without adjusting for any characteristics of the individuals or districts. It does this both for the period before and then after the introduction of the lone parent pilots.

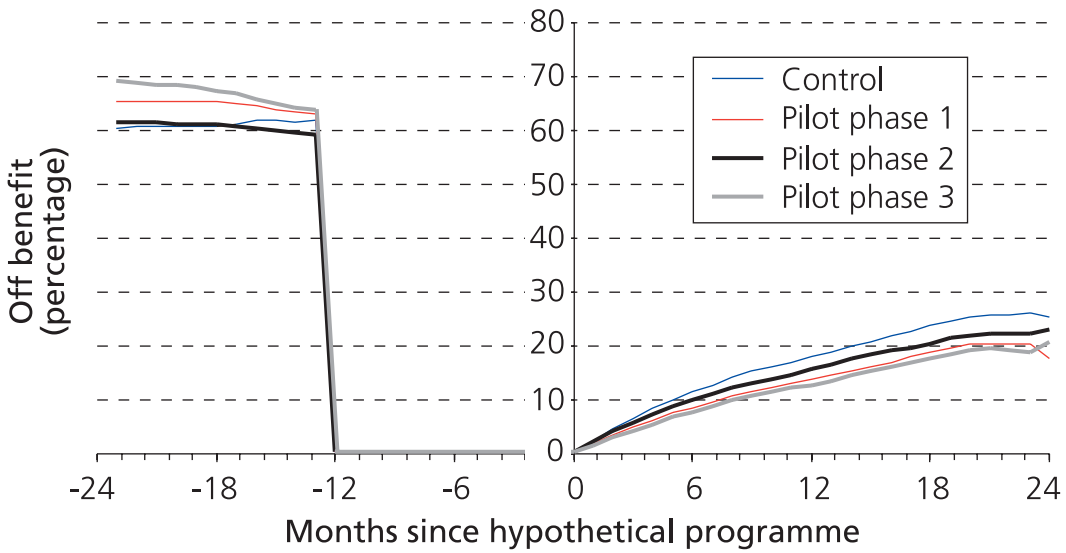
M.1 Lone parents potentially eligible to the hypothetical policy that began 1 April 2002

The following four figures show the proportions of the stock and flow samples that are in work or have moved off benefits at various points in time. In these figures, time is measured in months relative to the date on which lone parents first became eligible for the hypothetical policy (for the stock, this is always equal to 1 April 2002; for the flow, this will vary across the inflow window, i.e. between 1 April 2002 and 30 September 2003). The figures show that:

- Individuals in pilot districts are slower to leave benefits and spend less time in work than those in comparison districts.
- Individuals in the flow sample leave benefits more quickly and spend more time in work than those in the stock sample.

- Two years before first becoming eligible for the hypothetical policy (usually 12 months before they started the relevant Income Support (IS)/Jobseeker's Allowance (JSA) claim), around a third of individuals in the flow sample are recorded as being in work[52], and around a third are claiming benefits. At the same point in time, around 15 per cent of individuals in the stock sample are recorded as being in work, and around 85 per cent are claiming benefits.
- On the date that individuals first become eligible for the hypothetical policy, around 15 per cent of the samples (both flow and stock) are recorded as being in work by the HMRC data in the WPLS. Although it is possible to be both in work and receiving IS, this proportion seems rather high.
- After 24 months, almost a quarter of the flow sample has left benefits, compared to less than a fifth of the stock sample; a similar proportion are recorded as being in work.
- There is a small discontinuity in the work outcomes of the stock samples in months -13 to -12 and months 12-13: these correspond to March-April 2001 and March-April 2003, and are due to the fact that work spells with uncertain start or end dates have these dates set to 6 April or 5 April respectively.

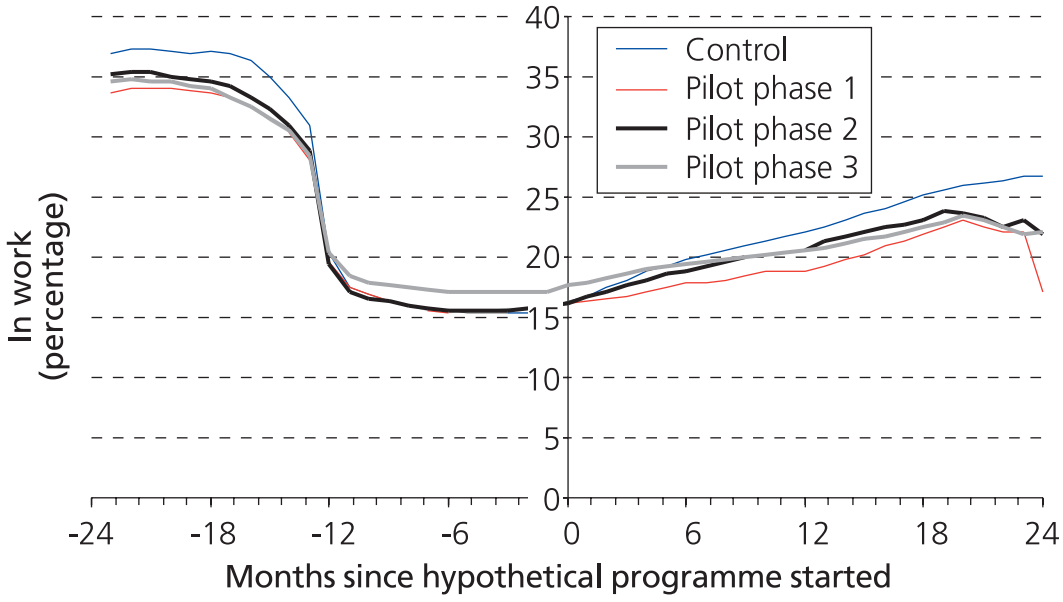
Figure M.1 Benefit outcomes, flow sample



Sources: Authors' calculations from data sources described in text.

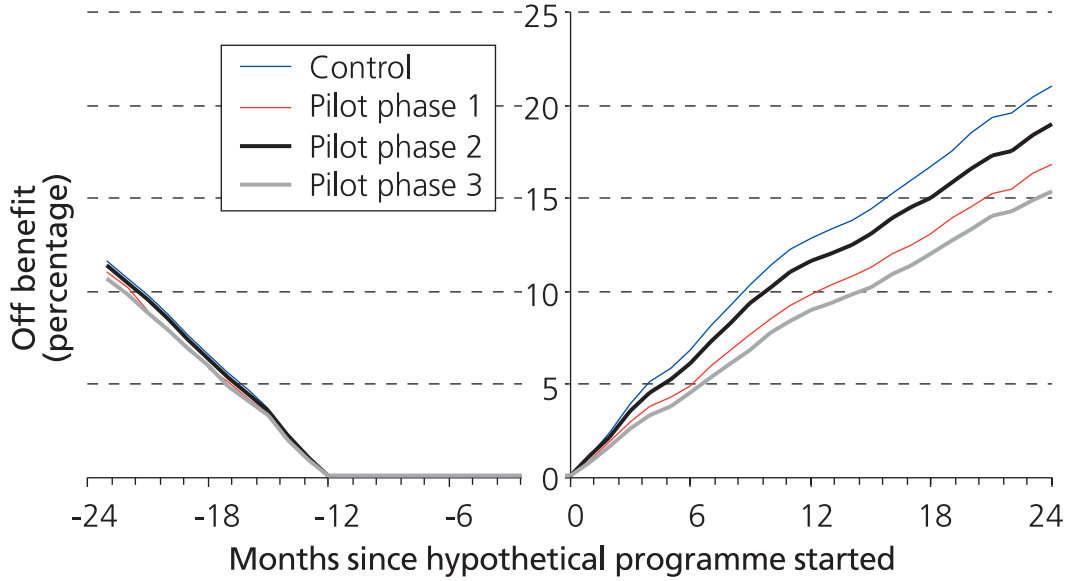
[52] Some of the problems associated with using the data from Her Majesty's Revenue and Customs (HMRC) in the Work and Pensions Longitudinal Study (WPLS) as a measure of being in work are discussed in Appendices C and D.

Figure M.2 Work outcomes, flow sample



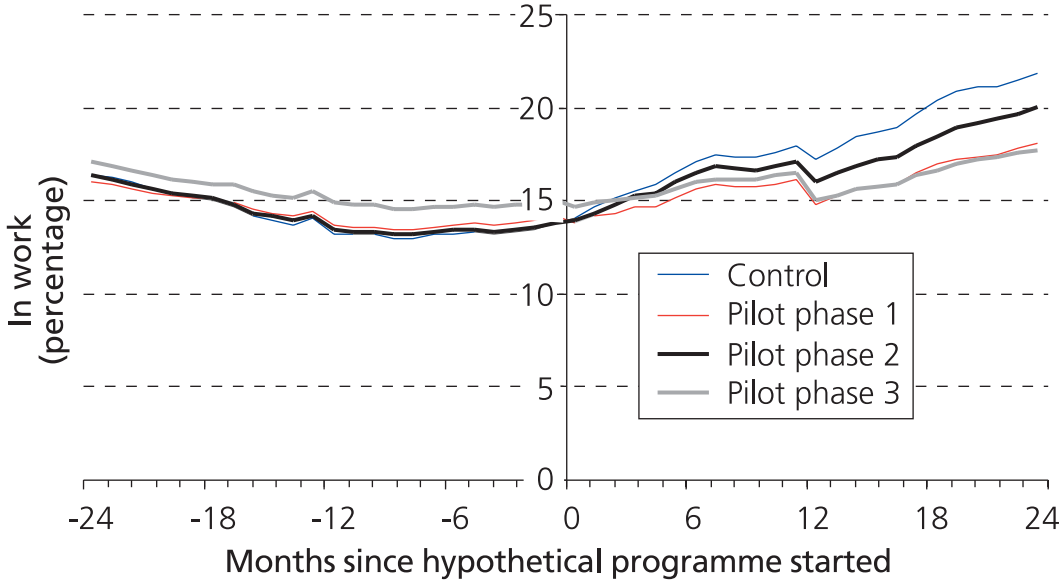
Sources: Authors' calculations from data sources described in text.

Figure M.3 Benefit outcomes, stock sample



Sources: Authors' calculations from data sources described in text.

Figure M.4 Work outcomes, stock sample



Sources: Authors' calculations from data sources described in text.

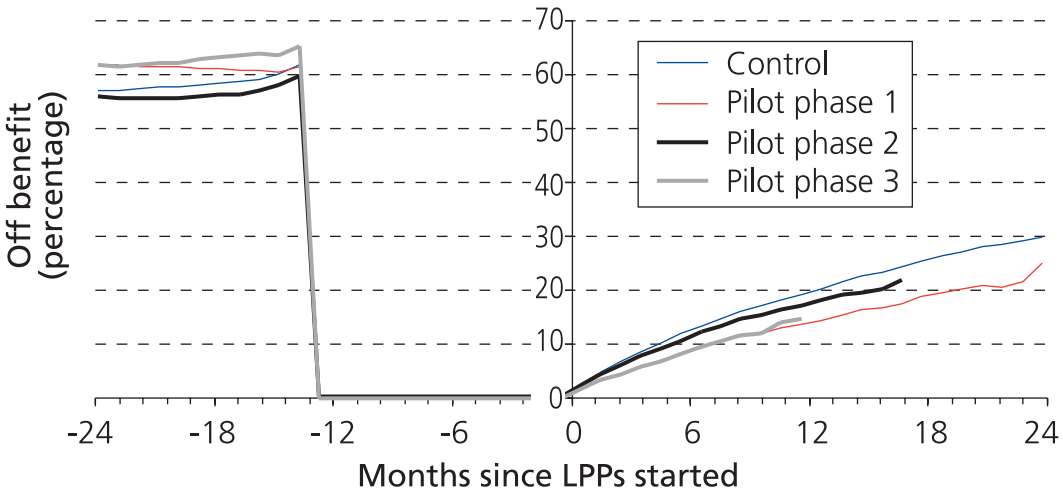
M.2 Lone parents potentially eligible to the actual lone parent pilots

The next figures illustrate the proportions of potentially eligible lone parents in the stock and flow samples who are in work or have left benefits at various points in time, measured relative to the date at which they became potentially eligible for In-Work Credit (IWC) (for the stock, this is always equal to the date that the pilots started in the lone parent's home district; for the flow, this could be any date during the inflow window)

Because separate impacts are estimated for each phase of the lone parent pilots (LPPs), it is necessary to define three different comparison stock samples (shown in three different graphs): one comprising lone parents who would have been potentially eligible for the pilots (had they lived in one of the pilot districts) on the date the Phase 1 pilots were introduced (1 April 2004); one comprising those who would have been potentially eligible on 24 October 2004 (Phase 2); and one comprising those who would have been potentially eligible on 1 April 2005 (Phase 3). Individuals are permitted to appear in more than one of these comparison samples (and frequently do so).

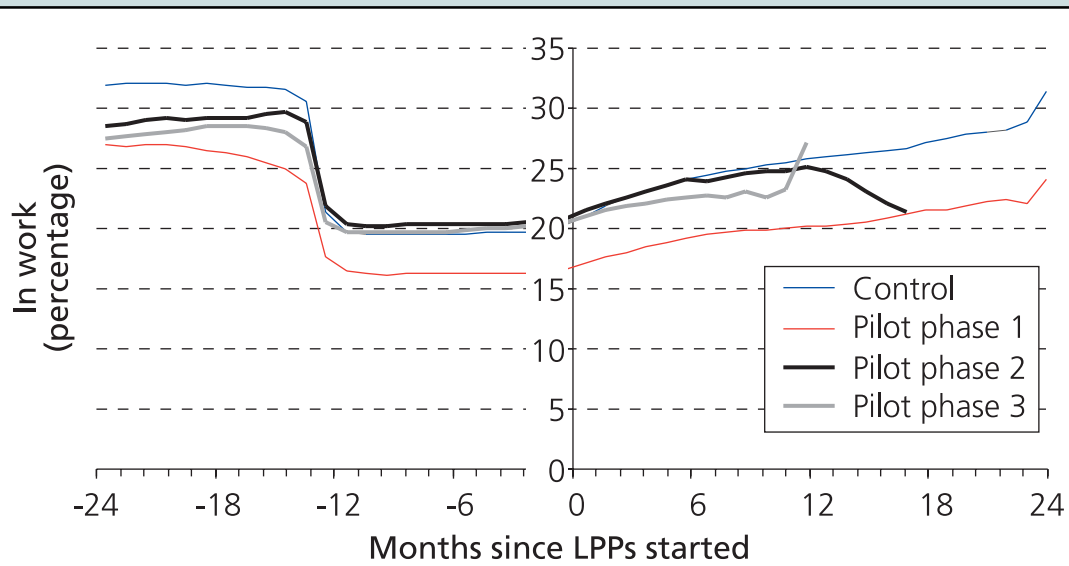
The key findings of these figures for the period after the pilots began are discussed in 6.1.1. Note also that there is a small discontinuity in the work outcomes in March-April 2003: this appears as months -13 to -12 for the stock in Phase 1, and months -20 to -19 for the stock in Phase 2. The discontinuity is due to the fact that work spells with uncertain start or end dates have these dates set to 6 April or 5 April respectively.

Figure M.5 Benefit outcomes after the pilots have started, flow sample



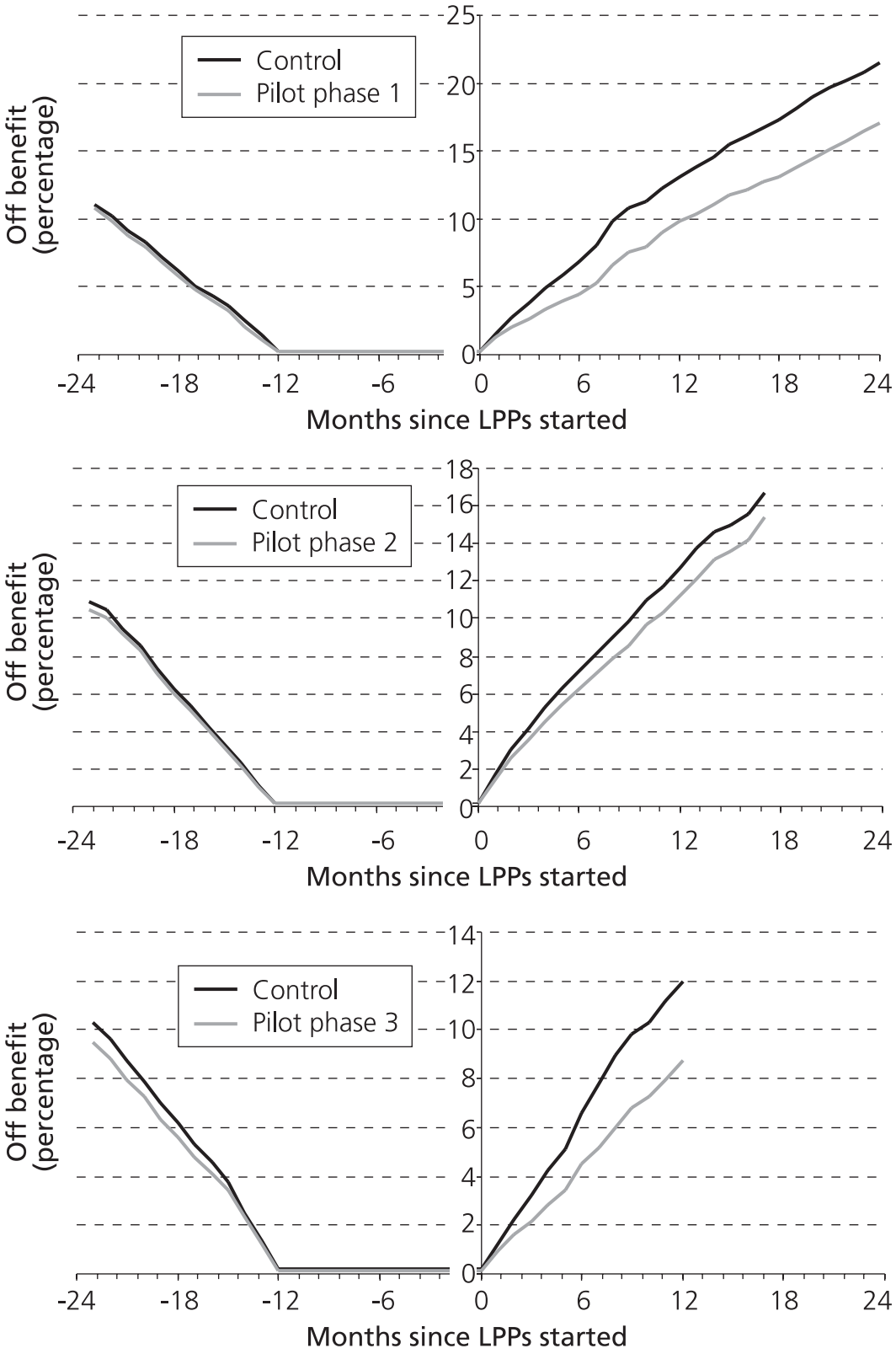
Sources: Authors' calculations from data sources described in text.

Figure M.6 Work outcomes after the pilots have started, flow sample



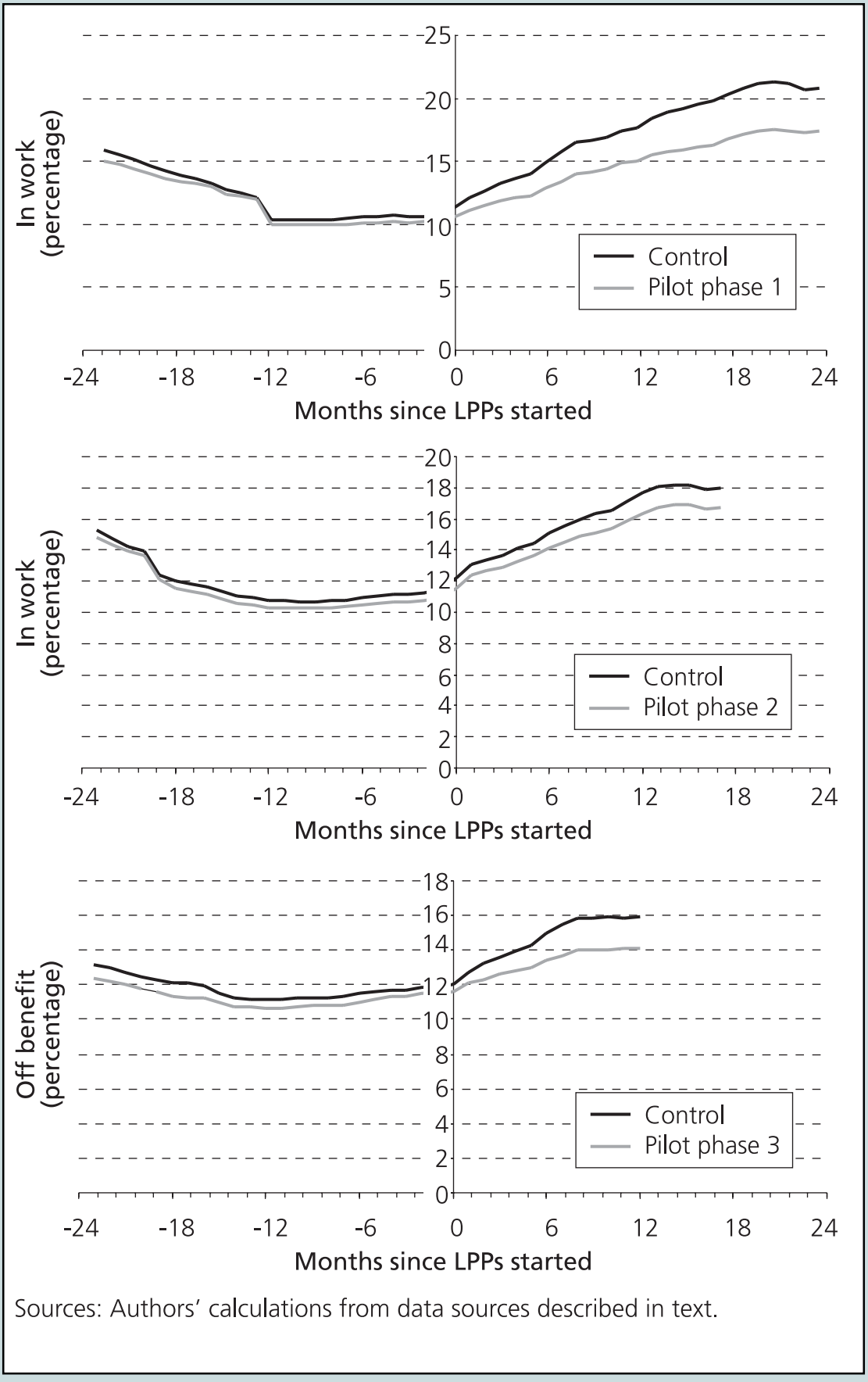
Sources: Authors' calculations from data sources described in text.

Figure M.7 Benefit outcomes after the pilots have started, stock sample



Sources: Authors' calculations from data sources described in text.

Figure M.8 Work outcomes after the pilots have started, stock sample



Sources: Authors' calculations from data sources described in text.

Appendix N
Unadjusted difference-in-differences presented graphically

This appendix shows graphically labour market outcomes in the pilot and comparison districts, both before and after the pilots began. This is equivalent to an unadjusted difference-in-differences (DiD) analysis and is the natural first step before implementing the full DiD estimate. Of course, some of these changes may be due to the characteristics of lone parents who were potentially eligible in the different districts and over time, and these effects need to be removed before one can identify the true impact of the pilots.

N.1 The stock sample

Below, one graph is shown for the stock sample in each Phase. Each graph shows the proportion of the particular sample of lone parents who have left benefit (or started work) at various points in time.

Four series are shown on each graph, all with the same outcome measure (whether off benefit, or whether in work) but for different groups of lone parents. The four groups are:

(i) lone parents who live in a pilot district and who were potentially eligible for the Lone parent pilots (LPPs) on their first day of operation;

(ii) lone parents who live in a comparison district who would have been potentially eligible for the LPPs on their first day of operation had they gone live *nationwide* on the day they went live in the Phase under consideration (that Phase 1 started on 1 April 2004, Phase 2 on 1 October 2004 and Phase 3 on 4 April 2005);

(iii) lone parents who live in a pilot district and who would have been potentially eligible for the LPPs on their first day of operation, had they begun on 1 April 2002;

(iv) lone parents who live in a comparison district who would have been potentially eligible for the LPPs on their first day of operation had they gone live *nationwide* on 1 April 2002.

These are the four groups of lone parents that one needs to be able to implement a DiD estimate of the impact of the LPPs.[53]

Figures N.1 and N.2 show that both benefit and work outcomes were worse in districts comprising the three Phases of the LPPs than they were in the comparison districts. In terms of benefit receipt, it is clear that outcomes after the pilots were introduced are little different to those in the same districts before the pilots were introduced. In terms of work outcomes, there appear to be differences in the early months after the introduction of the LPPs that disappear over time: this is clearest from the graph showing the Phase 1 outcomes. But the same appears to be true for the comparison districts, so these Figures present no striking visual evidence that the lone parent pilots affected labour market outcomes for the stock of potentially eligible lone parents.

[53] Tables showing the mean outcomes and sample sizes for the pilot and comparison groups – by phase, and for the stock and flow samples separately – can be found in Appendix K. They indicate that sample sizes are larger for the stock samples than for the flow samples; Phase 2 is the largest phase, followed by Phase 1, then Phase 3; for the flow sample, sample sizes are lower for the outcomes measured after longer periods of time because individuals in the flow sample became potentially eligible to the pilots on different days, while all outcomes are censored on the same day (31 March 2006 for benefits, and 30 September 2005 for work): this is not the case for the stock samples.

Figure N.1 Whether off benefit, stock samples

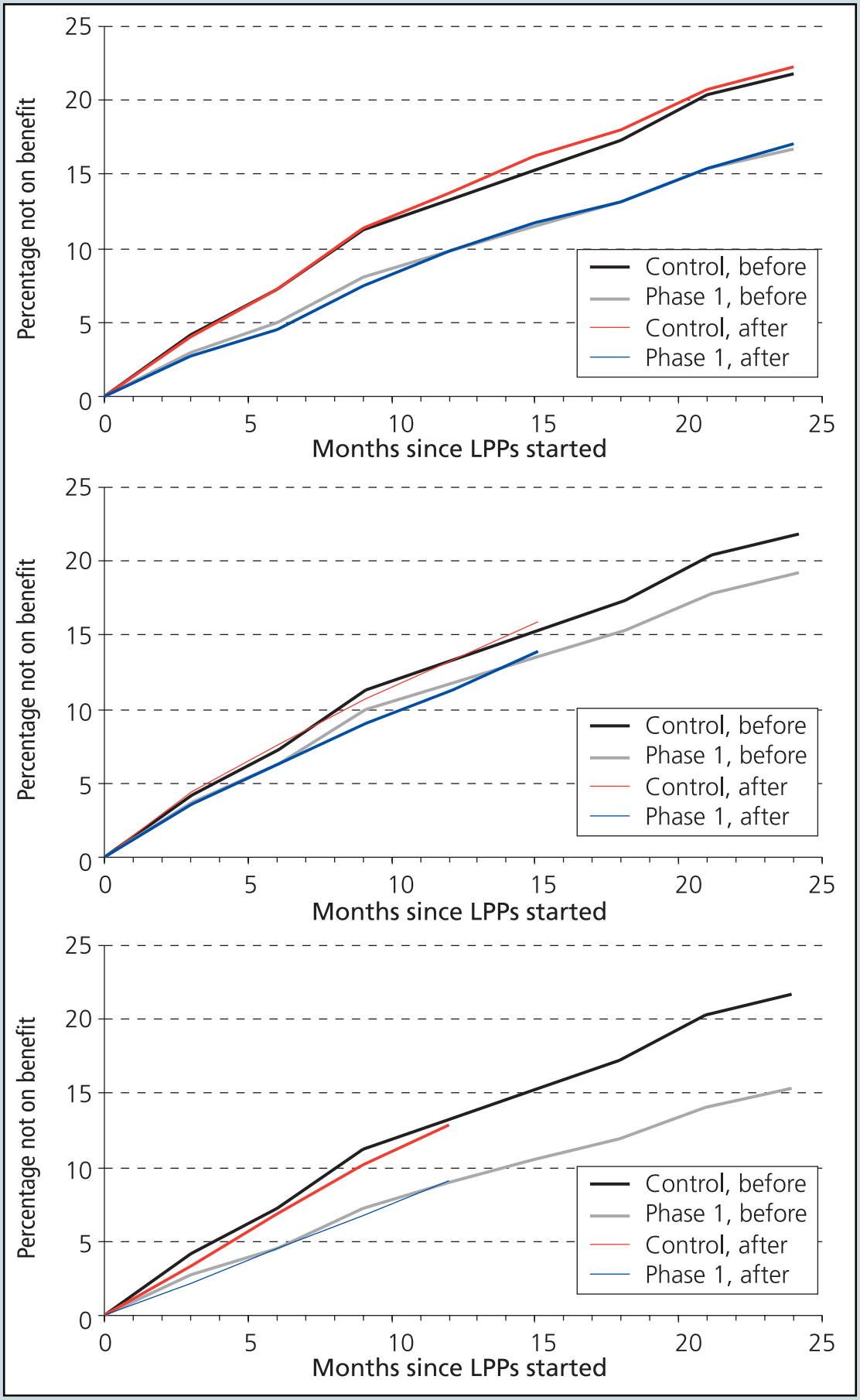
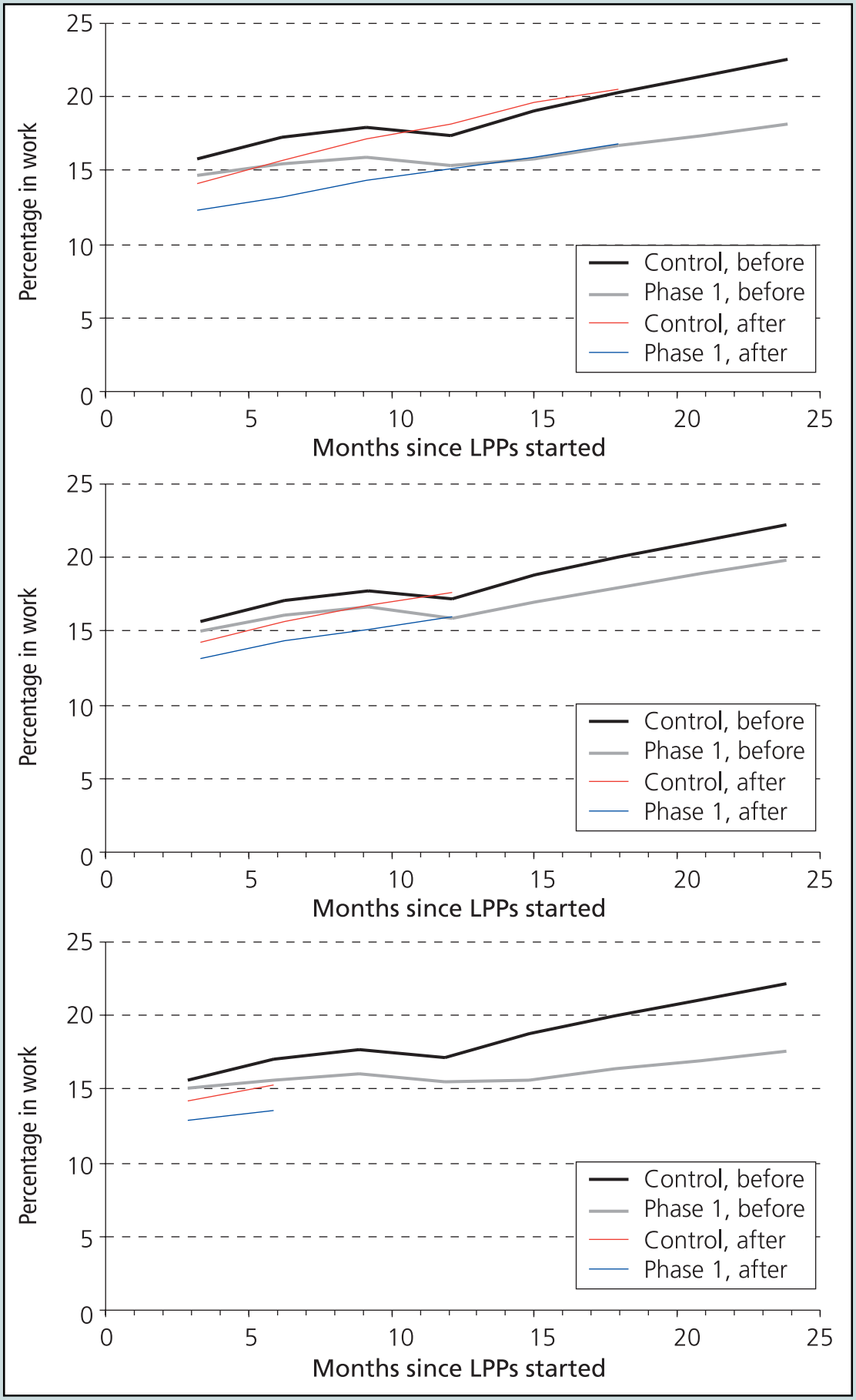


Figure N.2 Whether in work (as recorded by WPLS), stock samples



N.2 The flow sample

The impact of the LPPs on the flow sample can be analysed in a similar way. However, the figures that follow are more complicated than Figures N.1 and N.2 because they distinguish between different cohorts of lone parents who enter the flow sample, where a cohort is defined according to the month during which a lone parent first became potentially eligible to the LPPs (by contrast, all lone parents in the stock sample by definition became potentially eligible to the LPPs on the same day).

Figures N.3 to N.8 show the proportion of lone parents who have left benefit or who are in work a set number of months after first becoming potentially eligible for the pilots (after six, nine or 12 months), for four different groups of lone parents. Just as in Figures N.1 and N.2, these four groups are:

(i) lone parents who live in a pilot district and who became potentially eligible for the LPPs after their first day of operation;

(ii) lone parents who live in a comparison district who would have become potentially eligible for the LPPs after their first day of operation, had they gone live *nationwide* on the day they went live in the Phase under consideration;

(iii) lone parents who live in a pilot district and who would have become potentially eligible for the LPPs after their first day of operation, had they begun on 1 April 2002;

(iv) lone parents who live in a comparison district who would have become potentially eligible for the LPPs after their first day of operation, had they gone live *nationwide* on 1 April 2002.

Again, these are the four groups of lone parents that one needs to implement a DiD estimate of the impact of the lone parent pilots.[54]

Unlike Figures N.1 and N.2, the figures show the average outcome for different cohorts of lone parents, where a cohort is defined by the month in which the claim for IS becomes potentially eligible for the LPPs. The horizontal gap in each line represents those cohorts of lone parents whose claim for Income Support (IS) reached 12 months duration before the LPPs began in their district, but who were exposed to the LPPs at some point before the labour market outcome displayed in the graph was measured (for the purposes of these graphs, it is assumed that hypothetical LPPs began in the comparison districts in April 2004).

In Figures N.3 to N.8, a visual assessment of the presence of an impact of the LPPs using a DiD methodology involves comparing the line for each pilot district before the horizontal gap in outcomes with the line for the comparison district before the horizontal gap in outcomes, with the same two lines after the horizontal gap: if the distance between these two lines has changed in any way, this is indicative of an identifiable impact of the LPPs.

---

[54] Sample sizes are given in Appendix K.

Unlike the graphs for the stock sample, there is a great deal of variation in the proportion of the flow samples that are claiming benefits from month to month, both because there is genuine seasonality and because the number of lone parents in each cohort is small: this makes the task of visually assessing the presence of an impact (of the LPPs) more difficult. But it is clear that more lone parents are on benefits in the pilot districts than in the comparison districts prior to the introduction of the LPPs: this difference does not seem to increase or decrease following their launch, indicating that the raw (unadjusted) impact of the LPPs on benefit outcomes seems to be negligible. The pre-pilot differences (between pilot and comparison districts) in employment outcomes, though, are less marked. Once the LPPs are introduced, it appears that more individuals in both the pilot and comparison districts move into work, but, if anything, the increase is greater for individuals in the comparison district, implying that the raw (unadjusted) impact of the LPPs on employment outcomes is negative.

Figure N.3 Whether off benefit (six months after first becoming potentially eligible to the lone parent pilots), flow sample

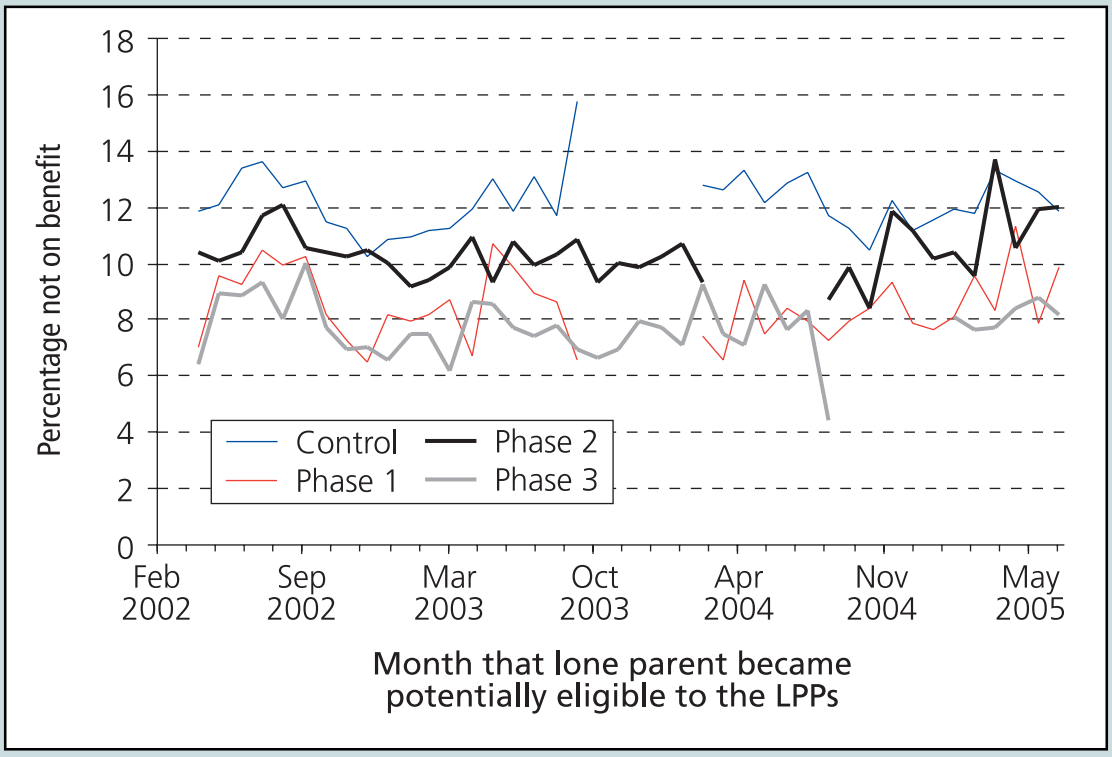


Figure N.4 Flow, whether off benefit (nine months)

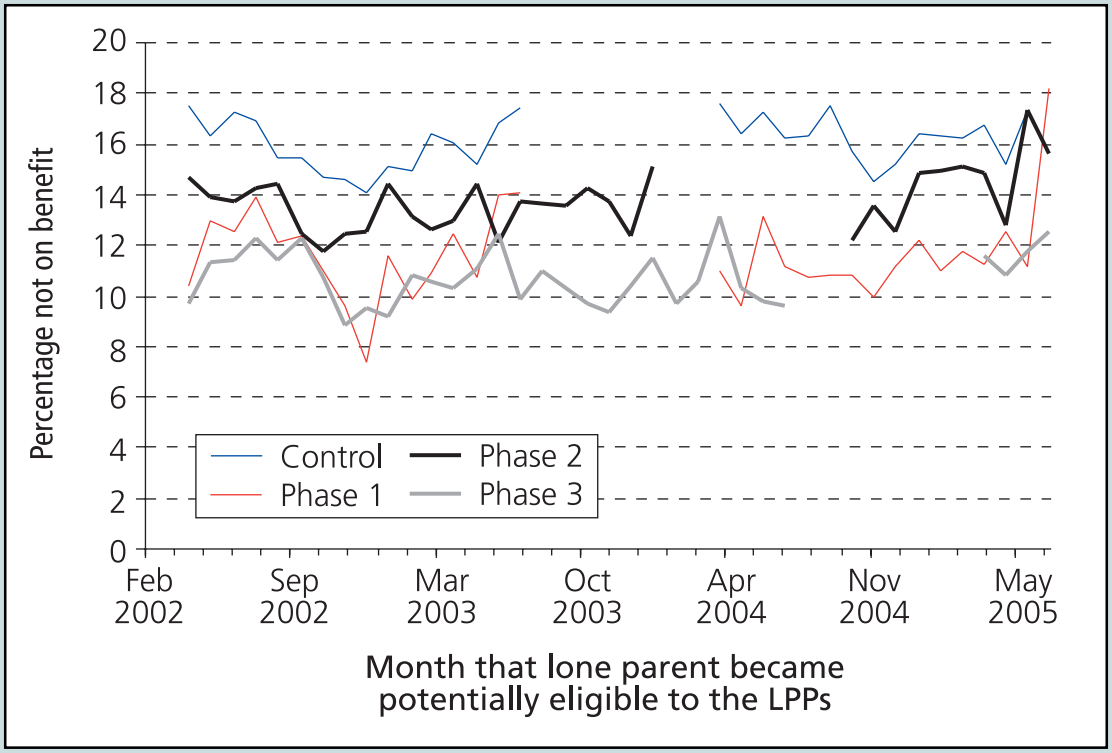


Figure N.5 Flow, whether off benefit (12 months)

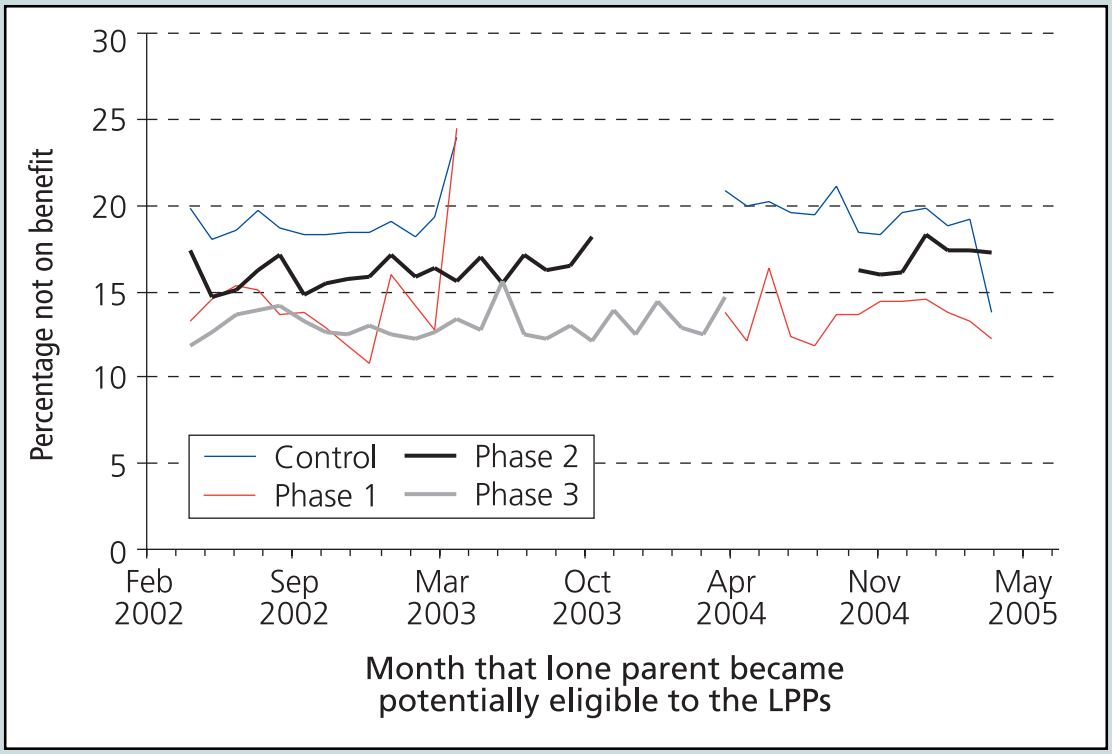


Figure N.6 Flow, whether in work (six months)

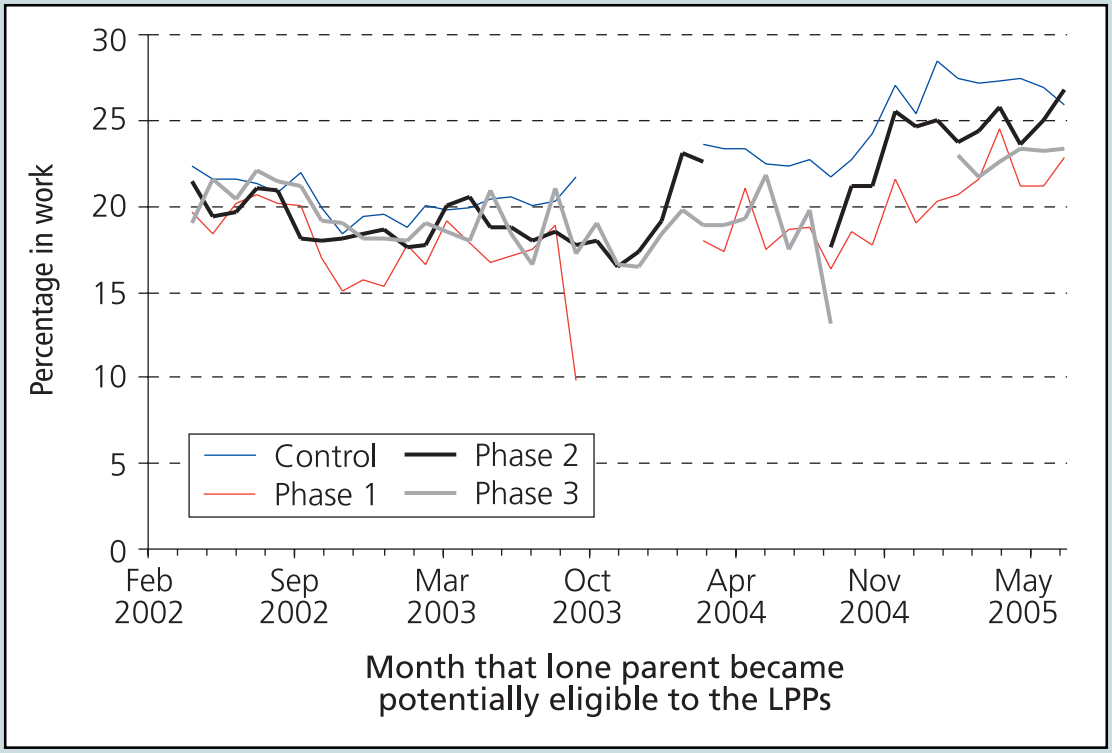


Figure N.7 Flow, whether in work (nine months)

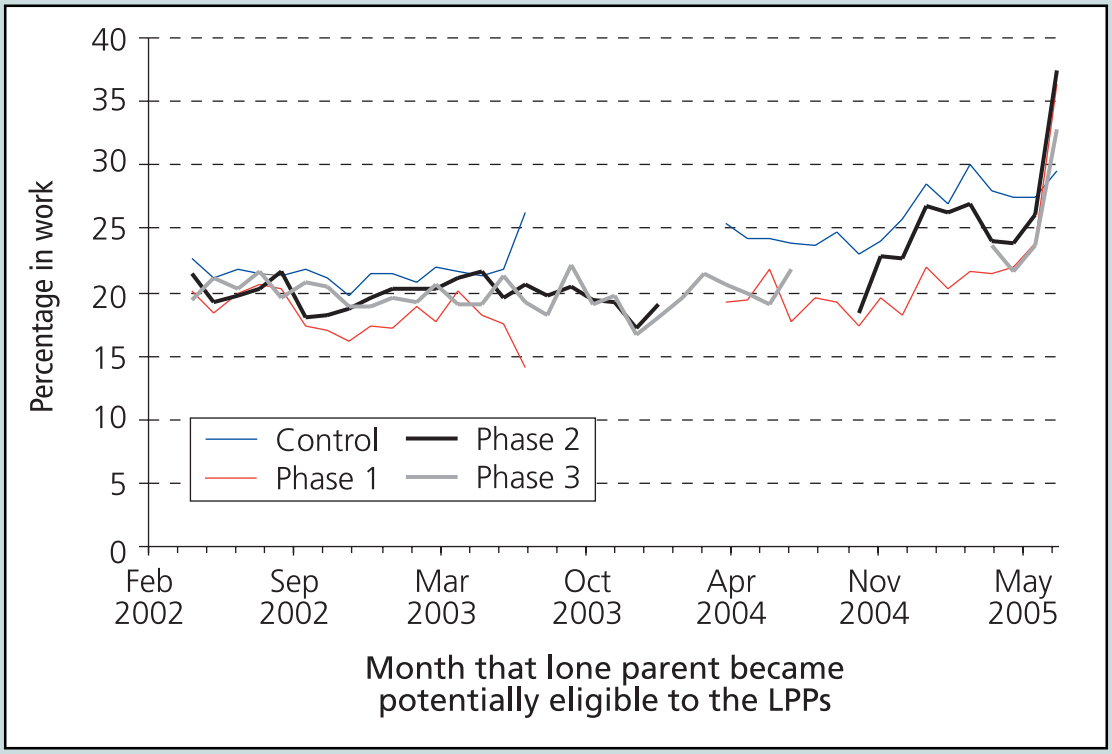
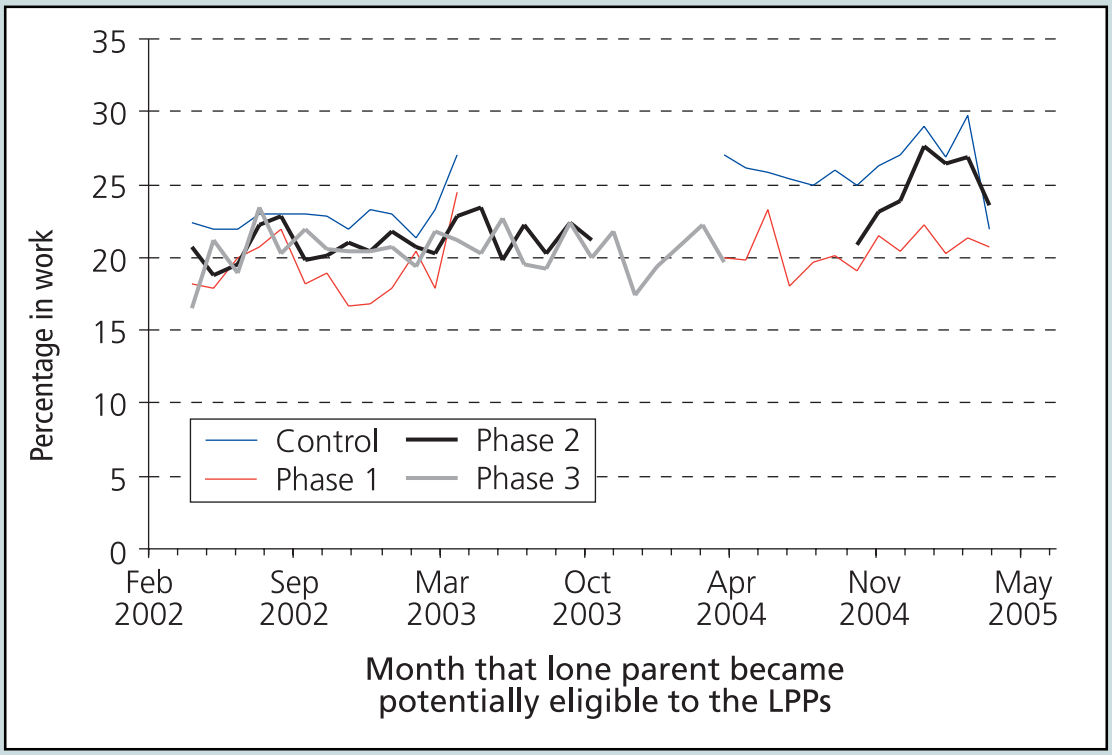


Figure N.8 Flow, whether in work (12 months)



References

Brewer, M. and Paull, G. (2004), 'Reviewing approaches to understanding the link between childcare use and mothers' employment', Department for Work and Pensions Working Paper 14, London: Her Majesty's Stationery Office.

Blundell, R. and Costa Dias, M. (2000), 'Evaluation methods for non-experimental data', *Fiscal Studies*, 21(4), pp.427 – 468, London: Institute for Fiscal Studies.

Blundell, R., Costa Dias, M., Meghir, C. and van Reenan, J. (2001), 'Evaluating the employment impact of a mandatory job search assistance program', IFS Working Papers, W01/20, London: Institute for Fiscal Studies.

Blundell, R., Dearden, L. and Sianesi, B. (2005), 'Evaluating the effect of education on earnings: models, methods and result from the National Child Development Survey', *Journal of the Royal Statistical Society: Series A*, 168(3), pp.473 – 512, London: Royal Statistical Society.

Dolton, P., Azevedo, J. and Smith, J. (2006), *The econometric evaluation of New Deal for Lone Parents*, DWP Research Report 356, Leeds: CDS.

Gregg, P. and Harkness, S. (2003), 'Welfare Reform and Lone Parents' Employment in the UK', Working Paper 03/072, Bristol: The Centre for Market and Public Organisation.

HM Treasury (2006), *Investing in Britain's potential: Building our long-term future,* Cm 6984 (2006-7 session), London: TSO.