Final Report

Working Credits – A low cost alternative to universal earned income tax credits?

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Table of Contents

Executive Summary 3
1. Introduction 4
2. The Working Credit program 5
3. Existing research on Working Credits and Earned Income Tax Credits 7
4. Empirical Strategy 9
5. Data and sample selection 17
6. Working Credit balances, accruals and depletions 20
7. Evaluation of effects on all eligible payment types 21
   7.1 Person-fortnight based analysis 21
   7.2 Spell-based analysis 25
8. Regression approaches to evaluating the effects of the program 27
   8.1 Person-fortnight based analyses 29
   8.2 Spell-based analyses 29
9. Matching approaches to evaluating the effects of the program 30
10. A robustness check 31
11. Conclusion 33
12. References 36
13. Tables and figures 38
14. Appendix 70

Executive Summary

This project investigates the effects of the Working Credit program introduced in September 2003. Under the program, Working Credits are accumulated during periods in which working age recipients have little or no earnings. These credits are used when they commence a job to allow the retention of income support benefits to temporarily supplement their earnings. In this respect, Working Credit bears some resemblance to the broad-based earned income tax credit programs employed in the US and UK, albeit a more targeted and low-cost version implemented through the welfare system.

The primary aim of the Working Credit program is to increase participation in paid employment. The program recognises that part-time and casual work can lead to full-time job opportunities while improving a person's skills and increasing work experience. Accumulation of working credits is, in essence, proportional to current-spell duration on benefits (although credits can be used and then re-acquired with additional time on payments). It is therefore worth little to those who have only just gone on to payments, and is in general largest for those who have been on payments the longest. This is consistent with a goal of targeting resources towards reducing long-term unemployment.

Using a range of different empirical techniques, we estimate the impact of the September 2003 Working Credit on the employment patterns of income support recipients. Our study is based upon administrative data, which has the advantage that our sample is very large, but the limitation that we can only observe employment and total earnings, not hours worked or hourly wage rates. Moreover, the duration of our data and our empirical strategies limit us to looking at relatively short-term outcomes (around one year). This means that we are not able to draw conclusions about the effectiveness of the policy at achieving enduring changes in employment patterns.

With either before/after analysis, differences-in-differences, or regression-adjusted differences-in-differences, we find evidence that the introduction of the Working Credit increased employment rates, earnings and exits for those on income support. Back-of-the-envelope estimates suggest that on a cost-per-job basis, the Working Credit compares favourably with existing labour market programs.

1. Introduction

Introduced as part of the *Australians Working Together* (AWT) package in September 2003 (and continued under *Welfare to Work*), the *Working Credit* initiative aims to encourage workforce age income support recipients (particularly those with long spells on income support) to take up full-time, part-time or casual work. Through this initiative, working credits are accumulated during periods in which working age recipients have little or no earnings. These credits are used when they commence a job to allow the retention of income support benefits to temporarily supplement their earnings. In this respect, Working Credit bears some resemblance to the broad-based earned income tax credit programs employed in the US and UK, albeit a more targeted and low-cost version implemented through the welfare system.

The primary aim of the Working Credit program is to increase participation in paid employment. The program recognises that part-time and casual work can lead to full-time job opportunities while improving a person's skills and increasing work experience. Accumulation of working credits is, in essence, proportional to current-spell duration on benefits (although credits can be used and then re-acquired with additional time on payments). It is therefore worth little to those who have only just gone on to payments, and is in general largest for those who have been on payments the longest. This is consistent with a goal of targeting resources towards reducing long-term unemployment.

An interesting feature of the program is that prior to the implementation of Working Credit, income support recipients were sent letters providing information on the program and have been supplied with information on Working Credits balances on a regular basis since then (fortnightly for Newstart Allowance, every 12 weeks for other payment types with fortnightly income reporting requirements). This form of awareness-raising is not typically considered in standard economic models, but there is reason to believe that by increasing the salience of the policy, it might have a direct impact on behaviour.

This study examines the effectiveness of the contribution of the Working Credit initiative to achieving increased economic participation and self-reliance among working age income support recipients. Our study is based upon administrative data, which has the advantage that our sample is very large, but the limitation that we can only observe employment and total earnings, not hours worked or hourly wage rates. Moreover, the duration of our data and our empirical strategies limit us to looking at relatively short-term outcomes (around one year).

This means that we are not able to draw conclusions about the effectiveness of the policy at achieving enduring changes in employment patterns.

We use a number of different research designs to separate the effect of the Working Credit from the prevailing economic conditions, and the duration that a recipient is on income support. With either before/after analysis, differences-in-differences, or regression-adjusted differences-in-differences, we find evidence that the introduction of the Working Credit increased employment rates, earnings and exits for those on income support. Back-of-the-envelope estimates suggest that on a cost-per-job basis, the Working Credit compares favourably with existing labour market programs.

The remainder of the paper is structured as follows. In section 2, we outline the structure of the program. In section 3, we review the related research on earned income tax credits. In section 4, we outline our empirical strategies. In section 5, we discuss the data to be used. In section 6, we present our analysis. The final section concludes.

2. The Working Credit program

Introduced on 20 September 2003, the Working Credit program is open to most workforce age income support recipients. This includes all customers under Age Pension age in receipt of: Newstart Allowance, Youth Allowance (job seeker), Partner Allowance, Mature Age Allowance, Sickness Allowance, Widow Allowance, Parenting Payment Partnered, Parenting Payment Single, Wife Pension, Widow B Pension, Carer Payment, Disability Support Pension and Bereavement Allowance.

Under the program, fortnightly earnings less than the accrued credits of the income support recipient are not taken into account in determining benefit entitlement. Credits are accrued when fortnightly non-welfare income is less than $48 and are depleted by earnings when non-welfare income exceeds the 'free area' applicable to the payment type of the recipient. A maximum of 48 credits are accrued each fortnight, while the maximum working credit balance is 1000. More formally, the change in Working Credit balance from one fortnight to the next is given by:

$$\begin{aligned}\Delta WC_t &= A_t - D_t \\ &= \left[\min\left\{1000 - WC_{t-1}, \max(48 - E_t - U_t, 0)\right\}\right] - \left[\min\left\{WC_{t-1}, \max\left(E_t - \max\left(F - U_t, 0\right), 0\right)\right\}\right]\end{aligned}$$

where A is accruals, D is depletions, E is earned income, U is unearned income and F is the 'free area', which is $62 for most allowances and variable (dependent on partner status and dependent children) for pensions. For couples in which at least one member is a pensioner, E and U are the totals for the couple divided by two. Working credit balances are preserved for 12 months after exit from income support payments, and up to 1,000 income bank credits can be converted to Working Credits for recipients transferring from Youth Allowance (full-time study), Austudy or an Australian Apprenticeship.[1] As an indication of the magnitude of the utilisation of Working Credit, nearly 540,000 customers depleted their working credits in the first nine months after the program came into effect.

An important aspect of the Working Credit program is that most income support recipients are regularly notified of their Working Credit balance. This occurs on a fortnightly basis for Newstart Allowance (NSA) recipients (who make up approximately 45% of persons in receipt of an eligible payment in any given fortnight), on a quarterly basis for others with fortnightly income reporting, and less regularly (or sometimes not at all) for income support recipients on other programs. These regular statements are likely to make the Working Credit more salient for income support recipients than it would otherwise be.

The Australian government does not estimate the budgetary cost of the Working Credit. This is because the Working Credit is not a payment. Instead, income support recipients use their Working Credit balances so that their payments are not reduced as a result of their earnings. In effect, the budgetary cost of the Working Credit comes through paying higher levels of income support to individuals with earnings.

However, some sense of the cost of the Working Credit can be gleaned from the depletion patterns of income support recipients presented in Tables 5 and 6. For example, of those on unemployment benefits, 8 percent deplete their Working Credit balance each fortnight. Among depleters who receive unemployment benefits, the mean depletion amount is $178 per fortnight. Assuming 500,000 unemployment benefit recipients in an average fortnight, this suggests that the annual expenditure on the Working Credit for this group alone is $0.08 * 178 * 500,000 * 26 = \$185$ million .

[1] Income bank credits operate on similar principle as Working Credit, but apply to Youth Allowance (full-time study) and Austudy recipients and allow for up to $6,000 in earnings per year before benefit entitlement is affected.

3. Existing research on Working Credits and Earned Income Tax Credits

So far as we are aware, there is no existing external research examining the effects of Working Credit. Within DEWR, the Wallis Group was engaged to undertake surveys as part of the Australians Working Together evaluation. Their findings in relation to Working Credit focussed mainly on recognition and understanding of the program and customer perceptions of the initiative.

Earned income tax credits have been implemented or expanded in several developed nations over recent decades (Gradus 2001; Banks et al. 2005), and a substantial international literature has looked at their impact on labour supply, particularly in the United States and United Kingdom. These programs differ from the Working Credit in three respects. First, the Working Credit is designed as a temporary credit, for the period when individuals move from welfare into work. By contrast, earned income tax credits are not time-sensitive, in that they are not contingent on the respondent having been on income support in the past, nor do they cease after the respondent has been in the labour force for a certain duration of time. Second, Working Credits are not directly conditioned on having children (although there may be some indirect effect, since some income support payments are linked to having children). By contrast, earned income tax credits are generally much more generous for families with children than for families. And third, Working Credits are not conditioned on the income of the recipient's spouse (although again, some payments may take this into account). By contrast, earned income tax credits in other countries are generally contingent on the income of the recipient's spouse.

Bearing these key differences in mind, we turn to the empirical literature analysing the labour supply impact of earned income tax credits.[2] Evidence from the US EITC suggests that increasing the generosity of the program can have a large impact on labour supply, particularly on the participation margin. Eissa and Liebman (1996) used a differences-in-differences approach to analyse the 1987 increase in the US EITC, and found that it led to a

[2] This section draws from Leigh (2007). The UK earned income tax credit has undergone a series of name changes over time (Family Income Supplement (1971-88), the Family Credit (1988-99), the Working Families Tax Credit (1999-2003), the Working Tax Credit (2003-)), so we simply refer to it as the UK earned income tax credit.

2.8 percentage point increase in the relative participation rates of single women with children, but had no effect on the hours of those already in the labour force. Meyer (2002) charted changes in labour force participation over the period 1986-2000, and concluded similarly that the credit boosted labour supply on the participation margin, but had no significant effect on the hours margins for low-wage workers. Meyer looked at a variety of demographic groups, but concluded that the EITC primarily affected single women. Exploring whether this effect was due to the EITC or to welfare reform, Meyer and Rosenbaum (2001) modelled the impact of both tax and welfare changes, and concluded that most of the increase in labour force participation was due to tax changes.

A few US studies have suggested that the EITC may lower labour force participation for secondary earners, in circumstances where one adult is already working. This could be due either to the income effect (which would apply to all recipient households), or to the substitution effect (which would apply to households in the phase-out range). Analysing the negative income tax experiments of the 1970s, Hausman (1985) concluded the income effect was significant, and could lead to a decrease in labour supply. Comparing labour force participation of low-skill and high-skill married women, Ellwood (2000) found that EITC expansions over the period 1986-99 reduced the labour supply of married women in EITC-eligible families by between 3 and 7 percentage points. And comparing low-skill married couples with children to low-skill childless couples over the period 1984-96, Eissa and Hoynes (2004) concluded that boosting the EITC reduced wives' labour supply by 1 percentage point, which they attribute primarily to the income effect.

In the case of the UK, most research focuses on a substantial increase in the credit that took place in 1999. Using structural modelling, Blundell et al. (2000), Gregg et al. (1999), and Paull et al. (2000) predicted that the 1999 reform should lead to a 1½-2½ percentage point increase in the employment rate of single mothers, while Blundell et al. (2000) and Gregg et al. (1999) predicted that the labour force participation rates for married women should fall (this is mostly due to the income effect: in households with a low-wage husband, an increase in family income decreases the probability that the wife will work). More recent work by Brewer et al. (2003) used data from the Family Resources Survey to simulate the effects of the changes that occurred between April 1999 and April 2000. They concluded that the total effect of these reforms was to boost the employment of single mothers by 3.4 percentage points, but reduce the employment of men and women in couples by 0.4 percentage points. Their simulations also indicate that the reforms should have increased the hours of working

single mothers by 0.6 hours per week, increased the hours of married women by 0.3 hours per week, and reduced the hours of married men by 0.2 hours per week.

Three natural experiment-type studies have focused on the effect that the suite of policy reforms implemented during the 1990s and early-2000s had on single mothers. Gregg and Harkness (2003) took single mothers as their treatment group, and childless single women as their main control group. Using the UK Labour Force Survey (and the General Household Survey before that) as a repeated cross-section, and with propensity score matching to balance the treatment and control groups on observable characteristics, they concluded that the policy reforms implemented over the period 1998-2002 boosted the employment rates of single parents by 5 percentage points, and increased average hours per week of those already in employment by 1.2 hours. Francesconi and van der Klaauw (2007) used the British Household Panel Survey, finding that the reforms to the UK tax credit between 1991 and 2001 boosted the employment rates of single mothers by about 5 percentage points. Leigh (2007) looked at all parents (singles and couples), and found that the 1999 reform led to a 1 percentage point boost in labour force participation, and a 1.1 hour increase in the working week for those parents already in the labour force. Across family types, the tax credit appeared to have increased hours worked for eligible single women, as well as for both men and women in couples. Leigh also found that the 1999 increase in the UK earned income tax credit boosted pre-tax earnings by 5 percent and post-tax earnings by 3 percent.

In general, the existing literature suggests that the earned income tax credit schemes that are in place in the United States and United Kingdom had the effect of boosting labour supply and earnings for eligible recipients. However, as we have pointed out, there are a number of key differences between these programs and the more modest Working Credit scheme that exists in Australia. As a result, the existing findings on earned income tax credits must be regarded as merely suggestive for the purposes of understanding the impact of the Working Credit on labour supply.

4. Empirical Strategy

The project uses administrative data on income support recipients and takes a multi-faceted approach in terms of both the types of effects investigated and the methods employed.

Potential effects of the Working Credit program include:

a) Increasing the take-up and rate of employment among income support recipients while on income support

b) Increasing the level of earnings among income support recipients while on income support

c) Increasing the rate of exits from income support payments via increased employment of income support recipients (which can occur if part-time or temporary work acts as a stepping stone to more enduring and substantial employment)

d) Increasing the extent of 'churn'. Since Working Credit balances cease to accumulate when they reach $1000 (which can occur after 42 weeks with zero earnings), the program creates an incentive for income support recipients whose Working Credit balance is $1000 to get a job, run down their Working Credit balance to zero, and then move back onto income support. Such a strategy would allow an individual to maximise his or her gains from the Working Credit program; potentially benefiting by more than $1000 per year. By its nature, such churning would be a long-term process, occurring over several years, and our data do not allow us to test it here. However, it would be interesting to assess the theory in future research.

In this paper, we investigate the first three theories. We also describe Working Credit balances and the depletion of Working Credits of eligible income support recipients, including examination of differences by payment type and other recipient characteristics.

The fourth potential effect of the program (d) is clearly of interest, and indeed is the most closely connected to the question ultimately of most policy-relevance: Does Working Credit increase employment and reduce reliance on income support in the long-run? However, as noted above, we do not investigate the extent of churning, or other longer-term effects of the Working Credit program, because the data available do not permit this. The data set used (discussed in Section 5) ends only 15 months after the program became fully operational in the sense that the maximum Working Credit balance could be reached. It is therefore not possible to investigate long-term effects, or even intermediate effects for a sufficiently large sample.

Because Working Credits was introduced for almost all working age income support recipients at the same time, it is not straightforward to identify the effects of the program. This is perhaps best understood by comparing the information we have available with that which would be produced by randomised assignment of income support recipients to the program. A properly conducted randomised policy trial would allow us to simply compare

outcomes for "eligibles" versus "ineligibles". At the outset, randomisation would ensure that the treatment group (eligibles) were identical, allowing for sampling error, on all dimensions to the control group (ineligibles). It would therefore be reasonable to assume that the counterfactual for the treatment group is the observed outcomes for the control group. Given the manner of implementation of the program, we do not have this option. Consequently, to identify the counterfactual (what would have happened to individuals had they not been in the program), we must adopt alternative strategies.

The identification strategies to be adopted for the project are based on two key features of the program. First, the Working Credit program did not involve replacement of an existing (similar) program, so the "before" period can be used to assist in inferring outcomes in the absence of the program. Prior to the introduction of the program, we can use administrative data to identify a control group of individuals with similar demographic characteristics to those who accessed the Working Credit program after its inception.

The second feature of the program that we exploit is that potential Working Credit balances are increasing in spell duration (reaching the maximum balance of $1,000 only after 21 fortnights with no earnings), implying the potential benefits of working credits will in general be increasing in spell duration. Because short-term recipients receive only a small Working Credit, and long-term recipients receive a large Working Credit, we can potentially use short-term recipients as a control group, and long-term recipients as a treatment group.

Taking these features into account, we use four empirical strategies to evaluate the impact of the Working Credit. Each of these relies on one or both of the key features of the program:

(1) Before-after approach: Compare outcomes (proportion with earnings, mean earnings and the spell duration distribution) of recipients in the before period with outcomes of recipients in the after period. This simply relies on the first feature of the program.

(2) Before-after approach with matching: Focusing on the same outcomes as in the first approach, but undertaking the comparisons between matched individuals. Matching can be done on characteristics such as sex, age, location and income support receipt history prior to the current spell. As with approach (1), this approach relies on the first feature of the program, but it controls for differences in the composition of recipients in the before and after periods in terms of observed characteristics. In particular, previous research (e.g., see Heckman et al, 1999) has shown that controlling for local labour market conditions is extremely important. Taking this approach, we can also

investigate how the effects of Working Credits differ across different groups defined in terms of characteristics such as sex, age and location.

(3) Difference-in-differences: This utilises both the before period and the fact that the benefits of the program are generally higher for those with longer spell durations. It involves comparing the difference in the outcome measures between long-term recipients in the before and after period with the same difference for short-term recipients. We will experiment with various definitions of "short-term" and "long-term", but we begin by defining them as "spell durations of 6 fortnights or less" and "spell durations of 21-27 fortnights". (Note that working credits can first reach the upper limit of $1,000 in the 21st fortnight.) The advantage of this approach is that it controls for all other changes over time between the before and after periods that could affect outcomes, on the assumption that these changes affect short-term and long-term recipients in the same way.

(4) Matched differences-in-differences: As with before-after matching, the matched differences-in-differences strategy controls for differences in observed characteristics in the before and after samples.

To see how the above approaches differ, suppose that for reasons unrelated to the Working Credit, general labour market conditions improved between the before and after period. In this case, approaches (1) and (2) might suggest that the policy had a positive effect. However, approaches (3) and (4) would take account of the change in labour market conditions, by subtracting the change in outcomes for short-term recipients from the change in outcomes for long-term recipients.

Formally, where Y is the policy variable of interest (eg. proportion with earnings, mean earnings, mean spell duration), policy effect will be:

- Approach (1): Policy Effect = Y(after) – Y(before)
- Approach (2): Policy Effect = Y(after, matched group) – Y(before, matched group)
- Approach (3): Policy Effect = {Y(after, long-term) – Y(before, long-term)} – {Y(after, short-term) – Y(before, short-term)}
- Approach (4): Policy Effect = {Y(after, long-term, matched) – Y(before, long-term, matched)} – {Y(after, short-term, matched) – Y(before, short-term, matched)}

Note that all approaches involve comparing one set of persons in the after period with *different* persons in the "before" period – that is, in general, we do not examine the same person before and after the introduction of the program.[3] We exclude individuals above the minimum age for eligibility for the age pension.

Our analysis is complicated by the fact that the Working Credit program is a duration- and earnings-dependent benefit. The Working Credit benefit is both determined by, and designed to impact on, spell duration and employment while on income support. In approaches (3) and (4), we aim to compare people of the same spell duration and earnings pre- and post-program introduction to examine its effects on employment and exit. However, a complicating factor is that this (implicitly) conditions on a factor that the Working Credit is designed to affect: the duration of unemployment. For example, if the Working Credit promotes exits of long-spell recipients, then those who remain in the long-term unemployed pool may be the long-term unemployed who are most difficult to place into jobs. Such a change in the composition of our sample could therefore potentially bias our results. While our matching strategy may address this to some extent, it will still not entirely address the problem if the 'after' period pool of long-term unemployed differ from the 'before' period pool of long-term unemployed in some unobservable dimension.

Associated with this problem is ambiguity over the appropriate unit of observation and sample period. For before-after analysis, it seems cleaner to restrict to spell commencements (thereby treating the spell as the unit of observation), to reduce endogeneity of the spells

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[3] A feature of the program that in principle could be used to identify effects of the program is the asymmetry between the determination of accruals and the determination of depletions. Depletions D are a function of earnings E, whereas accruals A are a function of earnings plus unearned income U, i.e., as described earlier,

$$\begin{aligned}\Delta WC_t &= A_t - D_t \\ &= \left[\min\left\{1000 - WC_{t-1}, \max(48 - E_t - U_t, 0)\right\}\right] - \left[\min\left\{WC_{t-1}, \max(E_t - F, 0)\right\}\right]\end{aligned}$$

where F is the 'free area' ($62 for most allowances and variable (dependent on partner status and dependent children) for pensions). U could possibly be considered an exogenous source of variation in Working Credit balances: two individuals the same in all respects other than the value of U during the spell will have different accumulated Working Credits balances (so, in essence, differences in subsequent behaviour could be attributed to Working Credits). The practical problem for this approach is that unearned income is not a significant feature of receipt for most recipients; and U would in any case be expected to independently affect labour supply.

composition to the Working Credit program. That is, if we adopt individual 'person-fortnights' as the unit of observation, we give greater weight to long-spell individuals because they have more fortnights on payments. If, for example, Working Credit reduced the incidence of long spells, we might make spurious inferences about its effects on earnings while on payments. However, restricting to spell commencements does limit the samples examined rather severely. Further, for differences-in-differences analysis, we encounter problems restricting to spell commencements, because we need to compare long-spell recipients with short-spell recipients in the before and after periods. (This in turn makes it clear that it is a problem for differences-in-differences that the people who make it to long spells may be affected by Working Credit, possibly invalidating this evaluation strategy.)

There thus being no clear choice of unit of observation that satisfies all requirements, two approaches are taken: person-fortnight analysis and spell analysis. Person-fortnight analysis involves treating each fortnightly payment record as its own observation. An individual will therefore contribute as many observations as fortnights that the individual was on an eligible income support payment in the sample period. To allow for dependencies between fortnightly observations for the one person, all observations for one person are treated as belonging to the same cluster for the purposes of statistical inference. Spell analysis treats the spell as the unit of analysis. An individual contributes as many observations as spells in the sample period. We likewise cluster on individuals for this analysis.

Our initial analysis (in Section 7) is undertaken for all eligible payment types. We undertake this analysis separately for each of six payment type categories:[4]

1. Unemployment benefit (NSA, YA(other))
2. Parenting Payment Single (PPS)
3. Parenting Payment Partnered (PPP)
4. Disability Support Pension (DSP)
5. Other allowances (OA)
6. Other pensions (OP)

Following on from the initial analysis, in Sections 8 and 9 we undertake more detailed analysis focusing on unemployment benefit recipients, as well as other groups for which the preliminary analysis indicated program effects may be present. This approach results in

[4] For males, PPS is combined into OP and PPP is combined into OA due to few observations in these categories.

female PPS and PPP recipients also being examined in Sections 8 and 9. However, we nonetheless believe that our primary focus should be on unemployment benefit recipients, for three main reasons.

First, there were policy changes affecting pensions and PPS that coincided with the introduction of the Working Credit. These policy changes make it difficult to isolate the working credit effect for recipients of these payments because their labour market behaviour may have changed after 20 September 2003 not only because of the introduction of Working Credit, but also because of the other policy changes. Most notably, the government changed the pensioner and PPS income test on 20 September 2003 from an annual to a fortnightly income test. Associated with this change were more onerous income reporting requirements for many recipients of these payment types. These changes have the potential to impact not only actual labour supply, but also, for given labour supply, on reported earnings in the LDS data. The pensioner income test was also changed for couples at this time, such that if one or both members of the couple is a pensioner, they are treated as a single income unit. Non-welfare income is combined and then half is assigned to each member. For allowances, the system of treating members of a couple as separate income units continued. This affects Working Credit balances for allowance recipients vis-à-vis pension recipients, because the partner's income does not affect the balance for an allowance recipient, but does affect the balance of a pension recipient. More important for the evaluation of the effects of the Working Credit program is that the policy change may have had a direct impact on pensioners' labour supply.

A further policy change at the time of introduction of Working Credit was the extension to pensions and Parenting Payment Single of a rule known as the "six-fortnight nil rate rule". This rule has been in place for allowances for many years, but was only introduced for other payments on 20 September 2003. The rule provides that a person can go off income support for up to six fortnights and come back on to payments without going through the re-application process. This also may have affected labour supply. For example, recipients of these payments may have been more likely to exit payments for employment given the knowledge that they could easily return with six weeks if their new job did not work out.

A second reason for focusing on unemployment benefit recipients is they were most affected and therefore most likely to respond to the program. That is, unemployment benefit recipients generally have the greatest attachment to the labour market, and associated with this have a comparatively high incidence of labour market earnings while on income support. As

evidence of this, we see in Table 5 that 8-9% of unemployment benefit recipients deplete working credit balances in any given fortnight, compared with 2-4% for most other payment types.

Thirdly, unemployment benefit recipients were notified more regularly about their Working Credit balances than most individuals on other payments. The SU19 claim form that must be lodged fortnightly is pre-printed with the recipient's Working Credit balance. This would tend to raise awareness of the program amongst this group of recipients, and for that reason they might be expected to be more responsive to the policy.

In addition to our analysis for the full working-age population, we also focus on prime-aged males and females (separately) aged 25-44 on unemployment benefits. These are groups with a particularly strong attachment to the labour market and are therefore particularly likely to have obtained employment in the event of exit from payments. Note also that prime aged women are a demographic group generally found to have high labour supply elasticities (and therefore potentially also quite responsive to incentives created by Working Credits).

For the purposes of our analysis, it is necessary to define 'before' and 'after' windows. The before period is the period prior to the introduction of the program, while the after period is the period after the program took full effect. In defining these periods, we need to take into account two factors. First, it is useful to define windows that span the full year, so as to take account of seasonal factors. Second, it is necessary to define an 'after' window that includes a period in which eligible income support recipients have had the chance to build up a maximum balance. Although the Working Credit came into effect on 20 September 2003, individuals began with zero balances on that date. It was only 42 weeks later – in the first fortnight of July 2004 – that income support recipients could potentially have accumulated the maximum Working Credit balance of 1,000.

In our initial analysis, we therefore exclude the 'build-up' period (though the analysis presented in section 8 will also take it into account). For our person-fortnight analysis, we define a 'before' period of July 2002 to June 2003 and an 'after' period of July 2004 to June 2005. For the 'spell-based' analysis, where only spell commencements are included, longer time-frames for the before and after periods are required in order to reach spell durations (and therefore working credit balances) that are sufficiently large. However, for this empirical approach, we can include spells commencing immediately after the introduction of the program, since all new spells will have a zero initial balance, irrespective of how long the program has been running (provided the previous spell of the individual ended more than 12

months ago). We therefore define the after period as 20 September 2003 to 20 September 2005 and the before period is analogously defined as 20 September 2001 to 20 September 2003. This provides a wider span – 2 years before Working Credit was introduced and 2 years after Working Credit was introduced – than for the person-fortnight analysis to compensate for the restriction to spell commencements.[5]

5. Data and sample selection

To investigate the impact of the working credits program, we use data drawn from the FaHCSIA Longitudinal Data Set (LDS) spanning the period January 1995 to September 2005. The data set comprises all fortnightly payment records over the period January 1995 to September 2005 of a 10% random sample of individuals who received an income support payment at some stage in that period. A separate record is generated for an individual in every fortnight in the period in which an income support payment was received. Information included with each payment record includes sex, date of birth, postcode of residence, partner status and partner income support status, number of dependent children, age of youngest dependent child, earned income, unearned income, payment type, payment entitlement and, depending on the payment type, potentially other information (such as activity type for Newstart Allowance recipients).

The structure of the data allows detailed patterns of income support receipt and earnings while on income support payments to be identified, which is very useful for evaluating the effects of the Working Credit program. However, there are some limitations of the administrative data, such as the absence of information when a recipient is off payments. The information on human capital and labour market activities is also very limited. For example, there is no information on working hours or wage rates, which is clearly important to assessments of program effects on labour market activity. Furthermore, the LDS is a series of fortnightly snapshots and does not contain retrospective updates. For example, if a recipient reports earnings for preceding fortnights, this will not appear in the LDS at all. This can cause Working Credit balances to unaccountably drop. In general, earnings will be under-reported

[5] Regression models that use the person-fortnight as the unit of analysis also employ the two-year windows because they consider both the initial 'transitional' effects of the program (up to July 2004) as well as the full effects (from July 2004).

because of this. The issue arises more for non-unemployment benefit payment types.[6] These limitations of the data should of course be kept in mind when interpreting the results.

The study examines all working-age income support recipients other than full-time students (recipients of Youth Allowance (full-time study) and Austudy) and recipients of Special Benefit, neither of whom are eligible for Working Credits.[7] These are inclusive sample selection criteria, so that the potential for effects of working credits are investigated for all persons eligible under the program. For the person-fortnight analysis, the sample comprises all payment records for eligible payments in the July 2002 to June 2003 'before' period and all payment record for eligible payments in the July 2004 to June 2005 'after' period. For the spell analysis, the sample comprises all payment records that commenced on an eligible payment-type in the period 20th September 2001 to 20th September 2005.

For the spell-based analysis, some explanation of the definition and construction of spells is required. We define a spell to be a period in which the maximum break in payments is three (consecutive) fortnights. (Put another way, a four-fortnight break signals an end to a spell.) This is consistent with the *Social Security Act 1991* definition for spells less than 12 months' duration. A practical consequence of this is that in conducting spell duration analyses, we first 'fill-in' fortnights within the spell that the individual was off payments – that is, create artificial payment records. Non-time-varying variables and predictable time-varying (such as age) are filled in, while unpredictable time-varying variables, most notably non-welfare income, are set to missing.

A further consequence of our spell definition is that a spell is right-censored (its completed duration is unknown) if a person is on payments in any of the last four fortnights observed in the data set. The censoring point – the known minimum duration of the spell – is the date of the fortnight the individual was last observed on payments. A spell is thus right-censored if the person was on payments on 30th September 2005, 16th September 2005, 2nd September 2005 or 19th August 2005.

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[6] Working Credit balances and benefit entitlements are calculated on a daily basis. Also note that LDW extraction dates in general (most cases) do not correspond to pay days (which vary across recipients).

[7] Note, however, that periods on student payments and Special Benefit will still be treated as periods on income support for the purposes of describing the income support experience of sample members. For example, when examining the total time on income support, receipt of these payments will be included (for those who enter the study by virtue of also having received other payment types).

For the analyses that do not involve estimating regression models (descriptive before-after and difference-in-difference comparisons and matching analyses), we separate spells into those commencing in the before period and those commencing in the after period. To ensure that the before and after periods are treated symmetrically, we then treat as right-censored all spells in the before period still in progress on 19th September 2003 (the last date before introduction of Working Credits). Thus, given the LDS extraction dates, a before-period spell is right-censored if the person was on payments on 19th September 2003, 5th September 2003, 22nd August 2003 or 8th August 2003.[8]

As noted in Section 4, five distinct payment-type categories are examined separately, on the basis that the greatly different circumstances of individuals receiving different payment types would suggest it is inappropriate to examine them as one group. For spell-based analyses, spells are assigned to payment-type categories according to the initial payment type of the spell. For person-fortnight analyses, the payment-type at the time of the observation determines the category to which the observation is assigned.

Table 1 presents, for each of the payment type categories we examine, counts of the number of recipients and the number of person-fortnight observations in the September 2001 to September 2005 sample period. We have around 16 million person-fortnight observations in this sample period, covering 262,414 individuals. Given we have a 10% sample, this implies 2.6 million individuals were observed on an eligible income support payment between 21 September 2001 and 30 September 2005, generating a total population of 160 million fortnightly payment records. Of the 262,414 individuals in the sample, 238,549 individuals (147,271 men and 91,278 women) are observed on unemployment benefits and 89,763 are observed on DSP (note that a person may be observed in more than one payment type category in the sample period). In addition 68,452 females are observed on PPS and 44,509 females are observed on PPP.

The counts of person-fortnight observations are also disaggregated by spell duration category in Table 1. That is, each observation is assigned to a duration category based on the incomplete spell duration of the spell to which the observation belongs as at the date of the observation. Of the 16 million observations in the data, over 13 million are at spell durations

[8] Note that the right-censoring conditions reduce the sample to spells commenced before 8th August 2003 for the before period and spells commenced before 19th August 2005 for the after period.

of 40 fortnights or more. Of the 7 million unemployment benefit payment records, about 3½ million are for 40 fortnights or more. Thus, even though the typical unemployment benefit spell is relatively short (approximately 11 fortnights), observations that belong to long spells will tend to dominate person-fortnight analyses that do not condition on spell duration. This simply reflects the fact that persons who experience long spells each contribute many more fortnightly payment records than do persons who experience short spells. It makes it clear that person-fortnight analyses that do not condition on spell duration need to be interpreted with caution.

6. Working Credit balances, accruals and depletions

Table 2 shows the number of person-fortnight observations with a positive Working Credit balance, over the period from late-2003 to late-2005. The program that had the largest number of income support recipients with a positive Working Credit balance was the Disability Support Pension (3,536,168 observations), closely followed by the unemployment benefit (3,297,251 person-fortnight observations).

In Table 3, we show the mean and median working credit amounts for all individuals who were eligible to receive the Working Credit (including those with zero balances). As can be seen, average balances rose steadily from the fourth quarter of 2003 (when the program was introduced) to the third quarter of 2004. From this point onwards, the mean and median balances have remained reasonably constant. Note that the median Working Credit balance from the fourth quarter of 2004 onwards was $1000, indicating that over half of those eligible for the Working Credit had the maximum balance.

Table 4 breaks down mean Working Credit balances into the different income support programs, and into male and female income support recipients. The largest balances are for those on the Disability Support Pension, while the smallest are for women on unemployment benefit and men on other allowances. When comparing across benefits, however, it is important to recognise that the size of the balance is a function of both accrual and depletion. Table 5 shows the proportion of recipients depleting their Working Credit balance each fortnight (giving equal weight to each person-fortnight observation). The highest rate of depletion is for unemployment benefit recipients. On average, 8 percent of unemployment benefit recipients (9 percent of men, and 8 percent of women) deplete their Working Credit balances in a given fortnight. The next highest rate of depletion is for Parenting Payment Partnered, with a depletion rate of 7 percent. The depletion rate for other programs is

substantially lower, at around 2-4 percent. Across all programs, the depletion rate is 5 percent, suggesting that one in twenty income support recipients utilised the Working Credit program in a given fortnight.

In Table 6, we estimate the mean fortnightly depletion amount among those depleting their Working Credit balances. This figure is a reflection of the hourly wage and the number of hours worked by income support recipients (our data do not allow us to separately identify these factors). We observe that the mean depletion amount across all income support programs is $179. Among men, depletions are highest for individuals on OP, unemployment benefit and PPS; while for women they are highest for those on OP and PPP. By way of comparison, the federal minimum wage in mid-2005 was $484.40 per week (or $968.80 per fortnight).[9] Our figures therefore suggest that if the typical depleter is paid at the minimum wage, he or she is most likely working around 14 hours per fortnight, or one full day per week. Moreover, it is interesting to note that if an income support recipient took on a full-time minimum wage job, he or she would deplete the maximum Working Credit balance ($1000) in slightly over a fortnight.

7. Evaluation of effects on all eligible payment types

7.1 Person-fortnight based analysis

Before-after analysis

We move now to our evaluation of the impact of Working Credits on labour supply and earnings. As noted above, our sample is all payment records in the before period of persons who received an eligible payment type while of working-age in the before period, and all payment records in the after period of persons who received an eligible payment type while of working-age in the after period.

The specific outcomes examined for the person-fortnight based analysis are (1) the proportion of person-fortnights in which earnings were reported; (2) the mean value across person-fortnights of reported earnings; and (3) the proportion of person-fortnights which represent the last fortnight of an individual's spell on income support – which directly translates to the proportion of person-fortnights which represent exits from income support. The first outcome

[9] This was the level of the minimum wage following the Australian Industrial Relations Commission's decision on 7 June 2005.

measures the rate of employment of income support recipients while on income support ('potential effect (a)'), the second outcome measures the level of earnings of income support recipients while on income support ('potential effect (b)') and the third outcome measures the rate of exits from income support payments ('potential effect (c)').

We begin with a simple before-after analysis, and then move on to differences-in-differences analysis. The before-after method simply compares outcomes after with outcomes before. For example, in the case of positive earnings, we calculate the proportion of fortnights with earnings greater than zero in the before period and calculate the same proportion for the after period. The before-after estimate is obtained by subtracting the before-period proportion from the after-period proportion. In all cases, we report standard errors, which account for clustering on persons.

Table 7 reports the share with non-zero earnings, for each payment category. We observe a statistically significant improvement in labour market attachment for men and women on unemployment benefit, and for women on PPP and PPS. The increase is in the order of 1-2 percentage points, which is in line with the fall in the headline rate of unemployment. In January 2003 (the middle of the before period), the national unemployment rate was 6.8%. In January 2005 (the middle of the after period) it had fallen to 5.6%. While it is conceivable that a portion of this change was due to the introduction of the Working Credit, it is also possible that our before-after differences are driven primarily by the improvement in general economic conditions that coincided with the policy's introduction.

In Tables 8 and 9, we repeat the before-after comparison by spell duration. Here, we observe that although the improvement in labour force participation for those on unemployment benefits has occurred across all duration groups, the greatest increase is among those in longer duration spells. For males, the effects seem to be confined to unemployment benefit recipients, but for women, the effects are also visible for PPP and PPS recipients. Again, the largest improvements in labour force participation are among those who have had longer spells on PPP and PPS. This argues against the general improvement in economic conditions being solely responsible for the aggregate before-after analysis results. (Below, we present some direct evidence on the relationship between the unemployment rate and unemployment duration).

Tables 10-12 repeat the exercise, now focusing on the mean level of reported earnings. Not surprisingly, changes in earnings mirror changes in participation, with the increases being largest for men on unemployment benefit and women on unemployment benefit, PPS or PPP.

On average, the magnitude of the increase is quite small, with the most substantial increase occurring among female PPS recipients, whose earnings rose $35 per fortnight (Table 10). Breaking down the earnings outcomes by gender and spell (Tables 11-12), there appear to be small increases in earnings for most payment groups; though the magnitudes are generally small. However, this pattern is not universal; in a small number of cases (e.g., long-term men on OP), earnings fell.

Tables 13-15 focus on the proportion exiting income support in a given fortnight. (Note that this need not correspond to the overall income support caseload, which depends on both entrants and exits.) Combining all spell durations (Table 13) produces mixed results, but the patterns are more clearly discernable in Tables 14-15. For men, exits increased for virtually all unemployment benefit recipients except short-term unemployed, which decreased markedly. For women, exits fell for most PPS and many DSP recipients, and remained unchanged for other income support recipients. In almost all cases, effects are quantitatively small, with the difference in the exit rate less than one percentage point in all but a very few instances.

Difference-in-differences analysis

While the before-after analysis has the virtue of simplicity, its counterfactual is not particularly credible. In particular, we would like to separate the effects of the improving Australian economy over the period 2002-2005 (i.e., changes in labour *demand*) from the impact of the Working Credit on labour *supply*.

To do this, we turn now to a differences-in-differences analysis, where we compare the change from 2002-03 to 2004-05 for a group that we expect to be strongly affected by the Working Credit ('long-term' income support recipients) with a group that we expect to be affected much less by the Working Credit ('short-term' income support recipients). As with the before-after comparisons, we consider effects on three outcomes: whether respondents have earnings, the level of their earnings, and the exit rate. Again, standard errors are clustered at the person level.

Short-term spell durations are defined to be durations of 1-6 fortnights. We take two approaches to defining long-term spell durations: first, we show results based on defining long-term as a spell durations of 21-26 fortnights, a duration interval in which many individuals are likely to have the maximum Working Credit balance. Second, we show results based on defining long-term spell durations as 14-20 fortnights. Persons in this spell duration

category could not have reached the maximum Working Credit balance (unless a prior spell within the post-Working Credit period had been completed in the 12 months preceding commencement of the current spell), but would certainly tend to have higher Working Credit balances than those in the short-term group. Compared with the 21-26 fortnight definition of long-term, this definition has the advantage of comparing groups that are likely to be have more similarities in characteristics. That is, persons in the 14-20 fortnight spell duration range are likely to be more like persons in the 1-6 fortnight spell duration range than are persons in the 21-26 fortnight range.

Table 16 shows the results from this analysis. Using proportion reporting earnings as the outcome variable, we find that for several payment groups, the before/after change for the long-term unemployed was significantly larger than the before/after change for the short-term unemployed. This holds for men on unemployment benefit and DSP, and for women on PPP and PPS. The magnitude of these effects is quite large, ranging from a 2 percentage increase in participation among men on unemployment benefit to a 9 percentage point increase in the participation of women on PPS. These results are consistent with those in Table 17, which uses mean reported earnings as the outcome measure, and finds that the improvement among the treatment group (long-term unemployed) exceeded the improvement among the control group (short-term unemployed) by a significant amount for men on UP and DSP, and women on unemployment benefit, PPS and PPP.[10] The increase in fortnightly earnings ranged from $10 for men on unemployment benefit to $84 for women on PPS.

Turning to the differences-in-differences analysis of exit rates (Table 18), the results suggest that the introduction of the Working Credit boosted exit rates of affected men on unemployment benefit, and the exit rates of affected women on unemployment benefit, PPS, and PPP. The increase in the fortnightly exit rate is in the order of 1-2 percentage points. The findings for females represent a significant contrast with the before-after analysis, which suggested zero or negative effects for PPS and PPP recipients. (We can infer that exit rates have generally declined in the after period compared with the before period for these recipients, perhaps because improving economic conditions have reduced the pool of recipients to those relatively more predisposed to entrenched reliance on income support.

[10] We do not discuss here two other significant effects: an increase in labour supply among females on OA (which is only significant at the 10% level), and a drop in labour supply among men on OP (which we ignore due to the relatively small size of the program).

Essentially, the difference-in-difference estimates find a positive effect of the program by showing that the decline in exit rates for longer-term PPS and PPP recipients was smaller than the decline for shorter-term PPS and PPP recipients.)

In Tables 19-21, we define the treatment group as those with spell durations of 14-20 fortnights (rather than 21-26 fortnights). The results from this specification are quite similar to those shown in Tables 16-18, although the differences-in-differences estimates tend to be slightly smaller. This is somewhat reassuring, since it suggests that our estimates are not particularly sensitive to the definition of the treatment and control groups.

7.2 Spell-based analysis

As mentioned, there are arguments in favour of person-fortnight analyses and arguments in favour of spells-based analyses. A spells-based approach treats each income support spell as the unit of analysis. It provides complementary information to the person-fortnight approach, allowing consideration of alternative outcomes – for example, outcomes that relate to the spell as a whole rather than simply the fortnightly observation – while also overcoming the problem of over-representation of long-spell recipients in the person-fortnight analysis.

Before-after analysis

The before-after analysis involves comparing spells that commenced in the September 2003 to September 2005 period with spells that commenced in the September 2001 to September 2003 period. As described in Section 5, spells commencing in the before period are artificially truncated at the end of the after period – that is, spells in progress at the end of the period are assumed to be right-censored at that point – to ensure symmetry in the treatment of the before and after periods.

Outcomes examined are analogous to those examined in the person-fortnight analysis, but are modified to reflect the different nature of the spell-based analysis. For the rate of employment while on income support, we consider two outcomes: the probability that earnings are reported at any stage of the income support spell; and the probability earnings are reported in any given fortnight of the spell. The first outcome provides a measure of whether Working Credit increases the likelihood of taking up any employment during the course of an income support. The second outcome provides a measure of the effect of Working Credit on take-up of employment per fortnight on income support. This is the consequence of changes in the incidence of any employment during income support spells and changes in the regularity or 'intensity' of reporting earnings within spells. The second measure also has the advantage

relative to the first of being less sensitive to differences between the before and after periods in spell duration composition.

Earnings levels are measured by mean fortnightly reported earnings in the spell. Effects of Working Credit on exit are captured by two outcomes. First, we examine the proportion of time spent on income support in the year subsequent to commencement of the spell. This is a measure proposed by Gottschalk and Moffitt (1994), which they label *Total Time On* payments, or TTO. A finding that Working Credit lowers our TTO measure corresponds to a finding that it promotes exit from income support and/or reduces re-entry to income support within the one-year time frame we consider. The second measure is the conditional probability of exit, known as the empirical hazard rate. For a given spell duration x, the hazard rate is equal to the proportion of spells reaching spell duration x that are *completed* at spell duration x (i.e., the proportion of recipients reach spell duration x who *exit* at spell duration x).

In Table 22, the first four outcomes are examined: the probability earnings are reported at any stage of the spell; the probability of reporting earnings in any given fortnight of the spell; mean fortnightly reported earnings in the spell; and TTO in the year subsequent to commencement of the spell. For the TTO outcome, the sample period for spell commencements is further limited by the requirement of one year of data following spell commencement. Consequently, spells commenced between September 2001 and September 2002 are compared with spells commenced between September 2003 and September 2004.[11]

Inferred effects of the Working Credit program on earnings outcomes are, broadly speaking, consistent with effects found when the person-fortnight is the unit of observation. Significant positive effects are found for all three earnings outcomes for both male and female unemployment benefit recipients. However, the TTO estimates imply that Working Credit has increased the total time spent on income support, at least in the year immediately following spell commencement, for all payment types. Effects are relatively small for unemployment benefit recipients, at 0.5 to 2 percentage point increases in TTO, but are sizeable for female PPS and PPP recipients, at approximately 7 percentage points.

[11] The use for the before period of the year ending September 2002 – one year before the introduction of Working Credit – is to ensure that none of the year subsequent to spell commencement in which TTO is examined occurs in the post-Working Credit introduction environment.

Figures 1-6 take a spell-based approach to examination of the effects of Working Credit on exit rates. They compare, at each spell duration, the hazard rate in the after period with the hazard rate in the before period.[12] The solid line in each figure is equal to the empirical hazard rate in the after period minus the empirical hazard rate in the before period. The dashed lines give the 95% confidence interval on the difference.

A priori, we expect the Working Credit to have little effect on labour supply among those on short spells, but to have an increasingly large effect on labour supply as spell length increases; up to the point when the maximum spell length is reached. Beyond this point, we do not expect the policy impact of the Working Credit to continue to rise.

In each of Figures 1-6, we observe a similar pattern, with the difference in the empirical hazards tending to increase in spell duration at low spell durations. This is consistent with the expected impact of the Working Credit, since income support recipients with no earnings reached their maximum Working Credit balance after 21 fortnights. However, the *level* of the difference is, overall, close to zero, and possibly on average slightly *below* zero. Taken together with the estimates for TTO, it is therefore not clear from the before-after spells-based analysis that Working Credit has reduced total time spent on payments. A counter argument to this inference, as noted in the difference-in-difference analysis, is that a general decline in exit rates may have occurred due to improving economic conditions, which the before-after analysis by construction does not control for.[13]

8. Regression approaches to evaluating the effects of the program

Although our previous approaches have the benefit of clarity, they potentially suffer from the disadvantage that we do not control for other factors that might affect employment status. In this section, we therefore introduce a set of statistical controls for observable characteristics that are known to affect employment outcomes. To the extent that the treatment group has 'better' or 'worse' characteristics than the control group, this may affect our estimate of the policy effect. However, if both groups have similar observable characteristics, the two

[12] Figures 1-6 can also be represented as a less parametric way of conducting the differences-in-differences estimation

[13] Another possibility, especially given the near-zero effects on exit rates evident for the before-after analysis, but sizeable positive effects on TTO, is that churning has increased. Due to the length of our panel, we do not investigate this hypothesis.

estimates should be the same. For the reasons set out above, we now focus our attention only on unemployment benefits for males and females, and PPS and PPP for females.

In this section, our models essentially identify the Working Credit effect by including a post-Working Credit-introduction dummy in a regression of the outcome of interest. Note that there is an 'interim' period, 3rd October 2003 to 25th June 2004, during which time the Working Credit program was in place, but no-one could have reached the maximum possible Working Credit balance of $1,000. We therefore distinguish three phases: no Working Credit (up to 19th September 2003), transitional Working Credit (3rd October 2003 to 25th June 2004), and full Working Credit (9th July 2004 to 30th September 2005).

As in the previous section, our unit of analysis is either the person-fortnight or the spell (clustering standard errors at the person level in both cases). In all specifications, the sample period is 21st September 2001 to 30th September 2005. This facilitates examination of both' transitional' and 'full' impacts of the program. We control for age, country of birth and indigenous status, partner status, dependent children, housing circumstances, location, the local unemployment rate, whether subject to job search requirements, income support history, quarter of year, and (incomplete) spell duration. Full details on these variables are reported in Appendix Table 1.

Formally, our before-after regressions take the form:

$$Y_{it} = \alpha + \beta_1 Transitional_t + \beta_2 Full_t + \gamma' Z_{it} + \varepsilon_{it} \quad (1)$$

In equation (1), Y is an outcome variable of interest for individual *i* in fortnight *t*, *Transitional* and *Full* denote the periods 3/10/03-25/6/04 and 9/7/04-30/9/05 respectively, *Z* is a vector of control variables and ε is an error term. The parameters β_1 and β_2 capture the interim and final policy impact respectively. Note that one advantage of such a model is that the inclusion of the local unemployment rate allows us to partially account for the change in economic conditions over this period.

We also estimate differences-in-differences regressions that take the form:

$$Y_{it} = \alpha + \beta_1 Transitional_t \times LTU_i + \beta_2 Full_t \times LTU_i + \gamma' Z_{it} + \delta_1 Transitional_{ti} + \delta_2 Full_t + \varepsilon_{it} \quad (2)$$

In equation (2), the policy impact is captured by a coefficient on the interaction between a time indicator (*Transitional* or *Full*) and an indicator for being at a long-term spell duration (*LTU*). We also control for the main time effect (via the parameters δ_1 and δ_2), and for the main effect of being *LTU* (which is included in the vector *Z*).

8.1 Person-fortnight based analyses

Analogous to the analysis presented in Section 7, the outcomes for the person-fortnight analysis that are examined are 'probability report earnings' and 'amount of earnings'. Both before-after and difference-in-difference regressions are estimated using a probit model where the outcome is whether or not the respondent had positive earnings in the previous fortnight, and a tobit model where the outcome is the respondent's earnings in the previous fortnight. Standard errors are clustered at the person level.

Our participation results are shown in Table 23, with each pair of estimates (*Transitional* and *Full*) derived from a separate regression. In general, the estimates accord with those from previous specifications, with the Working Credit appearing to coincide with an increase in labour force participation by male unemployment benefit recipients, female PPP recipients, and female PPS recipients. As in Section 7, our results are quite similar whether we define the treatment group as those in the 14-20 fortnight duration interval, or those in the 21-26 fortnight duration interval.

The magnitudes from this strategy are also quite similar to those in the previous tables, suggesting that for male unemployment benefit recipients, and for female PPP recipients, the Working Credit raised employment rates by 1-2 percentage points. For female PPS recipients, the estimated impact is larger; around 3-6 percentage points. In some specifications, the coefficient on female unemployment benefit recipients' participation is negative, though barely statistically significant.

In Table 24, we show results from a tobit regression on earnings. The results again suggest that the Working Credit boosted labour force participation, with the differences-in-differences specifications over the 'Full' period suggesting an increase in fortnightly earnings in most specifications. In those specifications where the effect is statistically significant, the magnitude of the increase is between $80 and $210. The largest earnings increases appear to be among prime-age male unemployment benefit recipients, female PPS recipients, and female PPP recipients.

8.2 Spell-based analyses

For the spells-based analysis, the outcomes examined are 'TTO in the year subsequent to spell commencement' and 'conditional probability of exit from income support'.

TTO models are estimated by Ordinary Least Squares, and are shown in Table 25. Consistent with the earlier TTO analysis, the estimates imply no statistically significant effect for male unemployment benefit recipients, and positive effects on TTO (implying that the policy *increased* welfare usage) for female unemployment benefit, PPS and PPP recipients. That is, Working Credit has not acted to decrease the time spent on income support in the first year after spell commencement.

To examine the conditional probability of exit, we estimate hazard rate models, results from which are shown in Table 26. The results are from a complementary log-log model, $p(t) = 1 - \exp[-\exp(\beta(t))]$. Coefficient estimates β are not directly informative about absolute magnitudes of effects; we therefore report in Table 26 $\exp(\beta)$, which gives the effect of the covariate on the relative hazard ratio.[14] Before-after analysis indicates negative effects of the program on exit, but the differences-in-differences coefficients are positive and significant for prime-aged men on unemployment benefit, and for women on PPP and PPS (and otherwise not significantly different from zero). The coefficients for PPP and PPS are substantially larger than those for men on unemployment benefit, suggesting that the Working Credit had a particular impact on boosting the exit rate from these programs. Broadly speaking, these findings accord with the unconditional analysis reported in Section 7.

9. Matching approaches to evaluating the effects of the program

Finally, in Tables 27-31, we present results from matched before-after and differences-in-differences analyses. Nearest neighbour propensity score matching is used, whereby the outcome experienced by each 'treatment group' member is compared to a matched 'control group' member who has similar observed characteristics, as measured by the 'propensity score' – the probability of being in the treatment group given observed characteristics.

For the before-after analysis, each sample member in the after period is matched with a sample member from the before period. In the difference-in-difference analysis, a treatment group member in the after period (spell duration of 21-26 fortnights, or 14-20 fortnights; after

[14] Each spell generates an observation. We use the Stephen Jenkins' *pgmhaz8* program in Stata. Reported results are for models without unobserved heterogeneity. Models with Gamma distributed unobserved heterogeneity were estimated, but on smaller (randomly selected) samples in order to achieve model convergence. Despite the smaller sample sizes, qualitative results were not affected, and indeed point estimates were very similar to those reported in Table 26.

the introduction of Working Credit) is matched with a control group member in the after period (spell duration of 1-6 fortnights; after Working Credit introduced), a treatment group member in the before period (spell duration of 21-61 or 14-20 fortnights, before Working Credit introduced) and a control group member in the before period (spell duration of 1-6 fortnights, before Working Credit introduced). The difference-in-difference estimate is equal to the difference between the treatment and control group members' outcomes in the after period minus the difference between the treatment and control group members in the before period.

Matching is undertaken on age, the local unemployment rate, income support history, family situation, housing situation, location, country of birth and indigenous status, quarter of year, and whether required to engage in job search. See Table A1 in the Appendix for variable details.

Results of the before-after analyses are generally consistent with unconditional and regression approaches, showing positive effects on earnings while on income support for most groups. However, the person-fortnight difference-in-difference analysis (Table 30) gives largely insignificant estimates of program effects. This may reflect the fact that this approach imposes less structure on the estimation of program effects. Nonetheless, some significant positive effects are found. Notably, the fortnightly exit rate of male unemployment benefit recipients is estimated to be increased by 2 percentage points, which is a large effect in the context of the 3-4% fortnightly exit rates of persons in the 21-26 fortnight spell duration category. Positive effects on earnings while on income support are also evident for female unemployment benefit and PPS recipients.

Although matched differences-in-differences estimates should in theory be the most robust strategy for evaluating the impact of the Working Credit, these are not our preferred estimates. The reason for this is that for a substantial share of individuals/spells, the nearest neighbour matching routine is unable to find a sufficiently close match. Consequently, our matched estimates are somewhat sensitive to the choice of variables that we match upon. While we show matched estimates for completeness, we prefer the (unmatched) differences-in-differences results to the matched results presented in this section.

10. A robustness check

Our differences-in-differences analysis is predicated on the assumption that the change in labour demand from 2002-03 to 2004-05 had an equal impact on both the treatment group

(long-term unemployed) and the control group (short-term unemployed). If the impact of the continuing economic boom on both groups was equal (absent the policy change), then the short-term unemployed may be a good control for the short-term unemployed.

One way to test this empirically is to look at whether there is a relationship between the headline unemployment rate and the share of the unemployed who are long-term unemployed – and if so, to account for this factor. To do this, we can no longer use the LDS, since it is not a full population sample, and covers only a relatively short timespan. Instead, we use monthly unemployment data from the ABS Labour Force Survey, covering the period from 1986 onwards. (An inevitable drawback of this approach is that we can only look at unemployment duration, and not at duration on other income support programs. Additionally, even in the case of unemployment, eligibility and duration are determined differently in the LDS than it is in the ABS Labour Force Survey.)

Figure 13 shows that there is actually a strong correlation between the two series, with the share of unemployed who are long-term unemployed being highly pro-cyclical. During the early-1990s recession, as unemployment rose from 6% to 11%, the share of the unemployed who were long-term unemployed rose from around 20% to around 35%. By the late-1990s, the unemployment rate had fallen to around 7%, and the share of unemployed who were long-term unemployed had fallen to about 25%. This suggests that an economic boom (bust) has a larger impact on reducing (increasing) long-term unemployment than short-term unemployment.

One way of taking this pattern into account is to compare the share of unemployed who are long-term unemployed with the share that one would expect, given the headline unemployment rate. To do this, we regress the LTU share on the unemployment rate, using data only for the pre-Working Credit period (1986 to June 2002), and then use this to predict the LTU share from July 2002 onwards. We can then compare the predicted LTU share (based on the headline unemployment rate) with the actual LTU share.

Figure 14 shows the results of this analysis. Although the change in the overall unemployment rate would have predicted a fall in the LTU share over this period, the actual drop has clearly been more substantial than the fall in unemployment would lead one to expect. Comparing the period before and after September 2003 (marked on the graph with a vertical line), the headline unemployment rate would have predicted a 2% drop in the LTU share (from 24% to 22%). By contrast, the actual LTU share dropped by 6% (from 22% to 18%). This provides suggestive evidence that our results are not merely driven by changes in

labour demand disproportionately affecting the long-term unemployed. Or to put it another way, economic booms tend to help the long-term unemployed more than the short-term unemployed, but the magnitude of the fall in long-term unemployment after the introduction of Working Credits was larger than would have been expected, even taking this into account.

11. Conclusion

Using a range of different empirical techniques, we estimate the impact of the September 2003 Working Credit on the employment patterns of income support recipients. With either before/after analysis, differences-in-differences, or regression-adjusted differences-in-differences, we find evidence that the introduction of the Working Credit increased employment rates, earnings and exits for those on income support. For reasons of consistency and precision, our preferred estimates are those from differences-in-differences estimates, with 'Long-term' spell durations defined as 21-26 fortnights (Tables 16-18). These suggest that the introduction of the Working Credit increased the share of income support recipients who were employed by around 2-9 percent, with the effects ranging from a 2 percentage increase in participation among men on unemployment benefit to a 9 percentage point increase in the participation of women on PPS. Working Credit also increased reported earnings by a significant amount for men on UP and DSP, and women on unemployment benefit, PPS and PPP. For those groups where the fortnightly earnings increase was statistically significant, the magnitude of that increase ranged from $10 for men on unemployment benefit to $84 for women on PPS. Most importantly, the Working Credit boosted exit rates from income support by 1-2 percentage points for income support recipients in most of the affected groups.

What is the net cost per job of the Working Credit? In Table 32, we use our preferred estimates of the costs and impacts of the Working Credit to estimate the cost per job. Estimates of costs are drawn from administrative data on the share depleting (Table 5) multiplied by the mean depletion amount among depleters (Table 6). Estimates of the impact of the program are drawn from the share of respondents who leave income support (differences-in-differences estimates in Table 18). For the income support programs where we find a significant impact of the Working Credit on exits, our estimates of the cost per job range from $500 to $2,180.

The results in Table 32 can be compared with other estimates of the cost of moving welfare recipient into employment. According to DEWR (2002):

> In 2000-01, costs per employment outcome were $560 for Job Matching, $1390 for Job Search Training and $5440 for Intensive Assistance. These costs for Job Search Training and Intensive Assistance were dramatically below those of the comparable programmes that they replaced-respectively, $2600 for Job Clubs and $12100 for the group of programmes replaced by Intensive Assistance. These substantial efficiency gains have translated into improved cost-effectiveness.

Our results suggest that on a cost-per-job basis, the Working Credit compares favourably with existing labour market programs.

Our cost results also compare favourably with the benefits of low-wage earnings in Australia. While our sample period does not permit estimation of the medium-term or long-term effects of Working Credit on welfare receipt, it is easy to see that the benefits of low-wage employment associated with exit from income support will quickly outweigh the estimated costs of the program. For example, if we assume that those who left income support due to Working Credit worked full-time at the minimum wage prevailing in June 2005 ($484.40 per week) for the year after coming off income support, the benefit of coming off income support is $25,188 (note that this is the social benefit; the individual benefit will be only the difference between after tax earnings and income support).

Naturally, to the extent that the typical person who leaves income support works less than full-time, this estimate will overstate the benefits of the credit; while to the extent that the typical person who leaves income support earns above the minimum wage, this estimate will understate the benefits. Also, it is important to note that this estimates does not account for the possibility of employment effects longer than one year. These could be positive (e.g., those who get off welfare manage to 'break the cycle'), or negative (e.g., if respondents 'churn' back on to income support in order to build up Working Credits again).In turn, these 'breaking the cycle' and 'churning' effects could have long-term effects on the psyche of an individual who begins on income support.

As we noted at the outset, our results have certain inevitable limitations. Since we use administrative data, we are unable to look at the impact that the Working Credit had on recipients' hours (conditional on working), or upon their hourly wages. In addition, we are unable to separate the 'salience effect' of receiving regular notification letters from the financial incentives created by the Working Credit. Teasing out the behavioural impacts of notification letters would require variation in letter receipt that was independent from the

financial payments. We do not observe such variation here, but a randomised experiment might yield valuable insights into this issue.

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13. Tables and figures

Table 1: Raw Data Counts (21 September 2001 – 30 September 2005)

	No. of recipients	No. of observations						
		Total	By (incomplete) spell duration category (fortnights)					
			1-6	7-13	14-20	21-26	27-39	40+
Male UB	147,271	4,821,452	789,796	596,491	414,017	276,935	458,631	2,285,582
Male UB 25-44	67,912	2,087,786	369,443	276,979	188,763	124,940	202,670	924,991
Female UB	91,278	2,321,512	388,373	286,886	196,226	131,329	215,668	1,103,030
Female UB 25-44	30,381	756,469	126,814	90,686	59,771	39,189	63,357	376,652
Female PPS	68,452	4,322,490	163,081	182,175	173,896	141,782	291,100	3,370,456
Female PPP	44,509	1,760,309	143,844	132,976	107,645	78,332	143,994	1,153,518
Male DSP	54,561	4,239,676	57,850	74,463	76,629	67,167	148,952	3,814,615
Female DSP	35,202	2,778,873	34,712	45,083	46,511	40,500	89,989	2,522,078
Male OA	10,996	202,971	43,082	27,005	19,242	12,968	22,585	78,089
Female OA	23,165	1,296,515	53,308	52,216	48,556	40,567	86,139	1,015,729
Male OP	6,874	307,681	16,416	16,888	13,731	10,694	21,657	228,295
Female OP	18,655	1,124,618	23,932	26,660	23,253	18,674	37,791	994,308
Total	341,300	23,738,039	1,759,964	1,486,225	1,158,497	848,298	1,570,122	16,914,933

Notes: An observation is a person-fortnight.

Working credit balances, accruals and depletions

Table 2: Number of Observations with Working Credit balance, by quarter and income support payment type

Year	Quarter	UB	PPS	PPP	DSP	OA	OP
2003	4	451,434	307,136	126,736	459,557	102,064	92,327
2004	1	398,774	266,917	109,436	396,344	85,133	78,623
	2	445,796	313,974	125,271	464,800	95,204	91,304
	3	373,697	269,094	106,062	400,860	78,544	79,344
	4	425,692	314,044	121,234	469,972	88,137	93,083
2005	1	376,014	270,201	103,490	403,168	72,566	79,467
	2	418,458	315,245	118,404	470,190	81,863	92,951
	3	407,386	311,731	116,555	471,277	79,823	94,023
Total		3,297,251	2,368,342	927,188	3,536,168	683,334	701,122

Table 3: Mean and median Working Credit balance by quarter – All eligible recipients

Year	Quarter	Mean	Median
2003	4	130.41	92.57
2004	1	282.44	277.71
	2	482.38	621.99
	3	605.11	847.46
	4	623.39	1000
2005	1	627.64	1000
	2	636.31	1000
	3	641.73	1000
Total		501.57	445.71

Table 4: Mean Working Credit balance, by quarter and payment type category

		UB	PPS	PPP	DSP	OA	OP
All							
2003	4	141.48	124.79	144.24	128.70	107.59	109.75
2004	1	312.74	290.87	189.34	287.84	242.58	245.63
	2	455.10	489.38	416.18	537.83	435.37	449.07
	3	543.01	599.80	638.44	675.71	546.18	572.62
	4	559.74	602.77	674.24	693.48	590.43	595.09
2005	1	563.10	600.71	684.77	699.57	607.39	603.65
	2	567.30	601.75	695.40	711.93	622.74	618.34
	3	574.02	601.31	698.53	717.46	631.57	627.76
Total		459.67	489.70	512.53	558.49	458.76	478.86
Males							
2003	4	141.15	139.84	131.48	129.31	102.35	128.82
2004	1	314.53	313.51	174.52	285.69	235.09	259.31
	2	465.95	536.09	366.76	542.32	361.67	516.51
	3	558.01	656.33	520.09	682.24	450.28	658.70
	4	576.96	656.07	552.74	700.85	486.96	679.50
2005	1	580.60	649.31	568.19	707.81	503.11	688.40
	2	585.72	652.50	589.91	720.81	510.56	705.94
	3	591.34	651.14	594.83	727.33	519.05	714.63
Total		469.82	531.35	433.15	562.73	382.04	554.58
Females							
2003	4	142.18	123.52	145.75	127.76	108.27	104.67
2004	1	309.22	288.93	191.08	291.07	243.55	241.93
	2	433.86	485.43	422.01	531.15	444.68	430.14
	3	513.85	595.05	652.43	666.06	558.31	547.47
	4	526.93	598.29	688.61	682.63	603.26	569.67
2005	1	530.76	596.65	698.57	687.51	620.21	577.62
	2	533.14	597.55	707.86	699.05	636.62	591.09
	3	541.91	597.23	710.52	703.34	645.22	600.63
Total		440.10	486.21	521.88	552.22	468.40	456.70

Table 5: Mean proportion depleting Working Credit balances per fortnight

		UB	PPS	PPP	DSP	OA	OP	All
All								
2003	4	0.044	0.018	0.016	0.007	0.011	0.008	0.021
2004	1	0.083	0.052	0.144	0.051	0.054	0.047	0.069
	2	0.088	0.046	0.095	0.019	0.026	0.022	0.051
	3	0.083	0.029	0.074	0.012	0.036	0.015	0.043
	4	0.091	0.043	0.057	0.022	0.025	0.025	0.049
2005	1	0.085	0.042	0.052	0.021	0.027	0.022	0.046
	2	0.085	0.041	0.056	0.019	0.025	0.021	0.045
	3	0.084	0.039	0.054	0.016	0.024	0.016	0.043
Total		0.080	0.039	0.068	0.021	0.028	0.022	0.046
Males								
2003	4	0.041	0.013	0.021	0.007	0.015	0.008	0.024
2004	1	0.081	0.053	0.140	0.054	0.041	0.074	0.069
	2	0.082	0.032	0.096	0.020	0.033	0.025	0.051
	3	0.079	0.024	0.079	0.012	0.034	0.011	0.044
	4	0.087	0.033	0.070	0.022	0.037	0.023	0.052
2005	1	0.079	0.039	0.060	0.020	0.038	0.023	0.049
	2	0.082	0.034	0.063	0.019	0.039	0.022	0.048
	3	0.081	0.033	0.060	0.016	0.038	0.016	0.046
Total		0.076	0.032	0.073	0.021	0.034	0.024	0.048
Females								
2003	4	0.049	0.019	0.016	0.007	0.011	0.008	0.020
2004	1	0.089	0.052	0.145	0.047	0.057	0.041	0.068
	2	0.098	0.046	0.096	0.019	0.026	0.021	0.052
	3	0.091	0.030	0.074	0.014	0.036	0.015	0.041
	4	0.100	0.043	0.055	0.023	0.024	0.026	0.046
2005	1	0.094	0.042	0.051	0.021	0.024	0.020	0.044
	2	0.092	0.041	0.055	0.019	0.022	0.021	0.043
	3	0.089	0.039	0.053	0.016	0.021	0.017	0.041
Total		0.088	0.039	0.067	0.020	0.027	0.021	0.044

Note: Equal weight assigned to each fortnight.

Table 6: Mean fortnightly depletion amount among those depleting Working Credits

		UB	PPS	PPP	DSP	OA	OP	All
All								
2003	4	101.19	78.52	100.91	82.73	98.57	95.83	95.24
2004	1	175.15	193.00	255.34	238.79	205.96	225.18	209.37
	2	172.50	112.18	262.33	142.53	154.10	148.70	170.44
	3	188.96	168.54	239.95	139.09	174.34	141.85	187.20
	4	187.11	157.40	221.45	136.86	133.83	134.19	174.45
2005	1	188.75	165.54	207.67	141.27	137.65	136.04	176.45
	2	191.08	179.79	227.05	143.06	145.04	146.61	183.48
	3	195.67	166.46	227.16	138.83	146.31	124.64	183.25
Total		179.02	157.24	235.94	165.20	160.57	158.04	178.82
Males								
2003	4	100.33	125.07	136.56	80.51	181.61	125.56	100.19
2004	1	178.90	233.28	248.57	241.50	187.43	251.53	206.84
	2	177.08	175.49	250.37	144.22	173.86	200.85	174.71
	3	192.82	218.33	247.98	138.95	156.88	174.83	188.53
	4	192.86	216.73	237.77	133.92	131.97	169.00	182.57
2005	1	192.83	224.22	219.36	139.42	144.70	166.54	183.83
	2	195.47	227.93	239.49	144.14	186.65	164.50	187.76
	3	201.40	217.25	238.05	133.33	179.61	137.70	190.86
Total		183.17	212.60	237.86	166.73	167.92	194.71	182.51
Females								
2003	4	102.63	75.96	95.09	86.04	82.59	89.19	90.88
2004	1	168.43	189.27	256.10	234.03	207.73	212.30	211.21
	2	165.03	108.32	263.75	140.02	150.97	132.68	167.44
	3	182.46	165.11	238.94	139.26	176.56	134.33	186.18
	4	177.61	153.64	218.97	141.02	134.19	124.87	167.99
2005	1	182.29	161.14	205.93	143.86	136.38	126.43	170.69
	2	183.89	176.47	225.33	141.48	135.27	140.82	180.10
	3	186.10	163.05	225.75	146.66	138.96	120.71	177.24
Total		172.11	153.36	235.70	162.88	159.40	145.85	175.99

Note: Equal weight assigned to each fortnight.

Evaluation analysis for all payment types

Note: In all subsequent tables, * and ** respectively indicate significance at 10 and 5 percent levels.

Person-fortnight analysis – Before-after comparisons

Table 7: Proportion reporting earnings

	Before	Before SE	After	After SE	Difference	Difference SE
Males						
UB	0.163	0.001	0.178	0.001	0.015**	0.002
UB – 25-44	0.177	0.002	0.188	0.002	0.011**	0.003
DSP	0.090	0.001	0.092	0.001	0.003	0.002
OA	0.068	0.005	0.083	0.005	0.015**	0.007
OP	0.107	0.005	0.102	0.005	-0.005	0.007
Females						
UB	0.235	0.002	0.247	0.002	0.012**	0.003
UB – 25-44	0.236	0.003	0.249	0.004	0.013**	0.005
PPS	0.288	0.002	0.310	0.002	0.022**	0.003
PPP	0.104	0.002	0.114	0.002	0.011**	0.003
DSP	0.093	0.002	0.094	0.002	0.001	0.002
OA	0.096	0.002	0.096	0.002	0.000	0.003
OP	0.152	0.003	0.149	0.003	-0.004	0.005

Table 8: Proportion reporting earnings by spell duration category – Males

Payment type	Spell Duration	Before	Before SE	After	After SE	Difference	Difference SE
UB	1-6	0.137	0.001	0.142	0.002	0.005**	0.002
	7-13	0.172	0.002	0.193	0.002	0.021**	0.003
	14-20	0.185	0.002	0.207	0.003	0.022**	0.004
	21-26	0.183	0.003	0.205	0.003	0.023**	0.004
	27-39	0.177	0.003	0.197	0.003	0.020**	0.004
	40+	0.161	0.002	0.176	0.002	0.015**	0.003
UB 25-44	1-6	0.143	0.002	0.144	0.002	0.001	0.003
	7-13	0.179	0.003	0.201	0.003	0.022**	0.004
	14-20	0.196	0.004	0.217	0.004	0.020**	0.005
	21-26	0.197	0.004	0.214	0.005	0.017**	0.007
	27-39	0.196	0.004	0.204	0.005	0.008	0.006
	40+	0.179	0.003	0.190	0.003	0.011**	0.004
DSP	1-6	0.085	0.005	0.083	0.005	-0.002	0.007
	7-13	0.079	0.005	0.086	0.005	0.007	0.007
	14-20	0.078	0.005	0.084	0.005	0.007	0.007
	21-26	0.065	0.004	0.086	0.005	0.022**	0.006
	27-39	0.070	0.004	0.083	0.004	0.012**	0.006
	40+	0.091	0.001	0.093	0.001	0.002	0.002
OA	1-6	0.045	0.004	0.037	0.004	-0.008	0.006
	7-13	0.054	0.006	0.060	0.008	0.006	0.010
	14-20	0.066	0.009	0.075	0.011	0.009	0.014
	21-26	0.064	0.010	0.086	0.013	0.021	0.016
	27-39	0.070	0.010	0.096	0.011	0.027*	0.015
	40+	0.089	0.010	0.099	0.008	0.010	0.013
OP	1-6	0.053	0.007	0.114	0.012	0.061**	0.014
	7-13	0.101	0.011	0.099	0.011	-0.002	0.016
	14-20	0.152	0.015	0.099	0.012	-0.053**	0.019
	21-26	0.147	0.016	0.111	0.014	-0.036*	0.021
	27-39	0.125	0.014	0.118	0.014	-0.007	0.019
	40+	0.106	0.006	0.100	0.005	-0.006	0.008

Table 9: Proportion reporting earnings by spell duration category – Females

Payment type	Spell Duration	Before	Before SE	After	After SE	Difference	Difference SE
UB	1-6	0.199	0.002	0.209	0.002	0.010**	0.003
	7-13	0.245	0.003	0.260	0.003	0.015**	0.005
	14-20	0.250	0.004	0.262	0.004	0.012**	0.006
	21-26	0.242	0.005	0.262	0.005	0.020**	0.007
	27-39	0.241	0.005	0.258	0.005	0.017**	0.007
	40+	0.241	0.003	0.251	0.003	0.010**	0.004
UB – 25-44	1-6	0.203	0.004	0.213	0.004	0.010	0.006
	7-13	0.259	0.006	0.283	0.006	0.023**	0.008
	14-20	0.268	0.007	0.288	0.008	0.021*	0.011
	21-26	0.251	0.009	0.288	0.010	0.037**	0.013
	27-39	0.253	0.009	0.264	0.010	0.011	0.013
	40+	0.232	0.005	0.241	0.005	0.009	0.007
PPS	1-6	0.400	0.005	0.349	0.005	-0.051**	0.008
	7-13	0.370	0.005	0.360	0.005	-0.010	0.008
	14-20	0.340	0.005	0.361	0.006	0.021**	0.008
	21-26	0.328	0.006	0.367	0.006	0.039**	0.008
	27-39	0.335	0.005	0.368	0.005	0.033**	0.008
	40+	0.269	0.002	0.296	0.002	0.027**	0.003
PPP	1-6	0.116	0.003	0.116	0.004	0.000	0.005
	7-13	0.110	0.004	0.124	0.004	0.014**	0.006
	14-20	0.106	0.004	0.129	0.005	0.023**	0.006
	21-26	0.103	0.005	0.127	0.005	0.024**	0.007
	27-39	0.105	0.005	0.124	0.005	0.019**	0.007
	40+	0.101	0.002	0.110	0.002	0.009**	0.003
DSP	1-6	0.113	0.008	0.106	0.007	-0.007	0.011
	7-13	0.103	0.007	0.108	0.007	0.006	0.010
	14-20	0.095	0.007	0.108	0.007	0.013	0.010
	21-26	0.092	0.007	0.106	0.007	0.014	0.009
	27-39	0.091	0.006	0.109	0.006	0.018**	0.009
	40+	0.093	0.002	0.093	0.002	0.000	0.002
OA	1-6	0.095	0.005	0.089	0.007	-0.006	0.009
	7-13	0.104	0.005	0.118	0.011	0.015	0.012
	14-20	0.102	0.006	0.120	0.012	0.018	0.013
	21-26	0.106	0.006	0.125	0.011	0.019	0.012
	27-39	0.107	0.006	0.114	0.008	0.006	0.010
	40+	0.093	0.003	0.094	0.003	0.000	0.004
OP	1-6	0.178	0.011	0.196	0.011	0.018	0.016
	7-13	0.195	0.012	0.182	0.011	-0.014	0.017
	14-20	0.200	0.013	0.177	0.012	-0.022	0.018
	21-26	0.183	0.013	0.173	0.012	-0.009	0.018
	27-39	0.158	0.012	0.154	0.011	-0.004	0.016
	40+	0.148	0.003	0.145	0.003	-0.004	0.005

Table 10: Mean reported earnings

	Before	Before SE	After	After SE	Difference	Difference SE
Males						
UB	79.850	0.686	92.810	1.062	12.960**	1.265
UB – 25-44	89.809	1.080	99.189	1.181	9.380**	1.601
DSP	24.932	0.557	30.118	0.620	5.186**	0.833
OA	22.716	1.951	29.055	2.206	6.338**	2.945
OP	38.202	2.400	40.533	2.320	2.331	3.338
Females						
UB	98.667	1.189	114.233	1.559	15.566**	1.961
UB – 25-44	109.409	2.597	121.290	1.991	11.881**	3.272
PPS	177.298	1.449	212.696	1.628	35.398**	2.180
PPP	36.377	0.802	50.522	1.021	14.145**	1.298
DSP	25.054	0.640	30.412	0.708	5.358**	0.954
OA	29.712	0.865	31.610	1.007	1.898	1.327
OP	69.933	2.033	73.390	2.137	3.457	2.949

Table 11: Mean reported earnings by spell duration category – Males

Payment type	Spell Duration	Before	Before SE	After	After SE	Difference	Difference SE
UB	1-6	78.663	1.148	81.940	1.387	3.277*	1.800
	7-13	103.220	1.550	123.988	6.084	20.768**	6.279
	14-20	102.344	1.801	117.843	2.000	15.499**	2.956
	21-26	97.307	2.177	111.069	2.422	13.762**	2.962
	27-39	85.226	1.705	102.868	2.186	17.642**	2.772
	40+	67.254	0.938	80.500	1.051	13.246**	1.409
UB – 25-44	1-6	86.987	1.753	88.226	2.360	1.239	2.940
	7-13	110.711	2.346	125.770	2.574	15.059**	3.483
	14-20	106.753	2.658	119.958	2.864	13.205**	3.908
	21-26	106.894	3.498	111.514	3.530	4.620	4.969
	27-39	95.904	2.658	108.272	3.427	12.368**	4.337
	40+	78.147	1.567	88.334	1.630	10.187**	2.261
DSP	1-6	46.884	3.554	46.187	3.413	-0.697	4.928
	7-13	39.291	3.059	47.374	3.453	8.083*	4.613
	14-20	34.408	2.834	43.704	3.189	9.297**	4.034
	21-26	28.576	2.472	45.322	3.283	16.747**	3.971
	27-39	29.049	2.233	39.345	2.784	10.297**	3.569
	40+	23.886	0.569	28.730	0.634	4.844**	0.852
OA	1-6	14.460	1.570	18.935	2.190	4.476*	2.695
	7-13	17.097	2.206	31.189	4.924	14.092**	5.395
	14-20	24.287	4.430	30.807	5.537	6.521	7.169
	21-26	22.432	4.553	28.511	5.547	6.079	7.385
	27-39	27.264	4.876	34.982	5.347	7.718	7.236
	40+	28.850	4.093	30.566	3.351	1.717	5.290
OP	1-6	30.114	4.535	65.598	8.618	35.484**	9.738
	7-13	48.743	6.995	51.936	6.923	3.193	9.841
	14-20	71.965	9.307	46.813	6.727	-25.152**	11.411
	21-26	68.302	9.218	46.675	6.906	-21.627**	10.295
	27-39	55.961	7.635	46.988	6.421	-8.972	9.976
	40+	32.497	2.460	37.460	2.597	4.963	3.577

Table 12: Mean reported earnings by spell duration category – Females

Payment type	Spell Duration	Before	Before SE	After	After SE	Difference	Difference SE
UB	1-6	86.955	1.399	97.961	1.485	11.006**	2.040
	7-13	115.261	2.037	139.475	7.932	24.214**	8.189
	14-20	117.140	7.916	128.067	2.630	10.926**	3.668
	21-26	100.874	2.557	121.002	3.026	20.127**	3.966
	27-39	103.212	2.564	117.589	2.809	14.377**	3.803
	40+	94.114	1.508	109.404	2.047	15.290**	2.543
UB – 25-44	1-6	102.535	2.663	112.429	2.917	9.895**	3.950
	7-13	136.243	3.890	159.421	4.392	23.177**	5.867
	14-20	152.003	24.019	152.447	5.517	0.444	24.645
	21-26	113.565	4.791	145.650	6.654	32.085**	8.199
	27-39	116.779	4.887	129.276	5.673	12.498	7.488
	40+	96.759	2.605	107.018	2.770	10.259**	3.802
PPS	1-6	306.049	4.844	280.106	5.178	-25.943**	7.091
	7-13	268.243	4.557	287.968	5.429	19.724**	7.088
	14-20	237.114	4.516	280.219	5.213	43.105**	6.970
	21-26	227.230	4.627	285.557	5.416	58.327**	6.943
	27-39	226.661	4.345	280.793	4.941	54.132**	6.580
	40+	155.854	1.544	194.301	1.743	38.447**	2.328
PPP	1-6	45.504	1.639	59.035	2.340	13.531**	2.857
	7-13	42.868	1.816	67.874	2.851	25.006**	3.381
	14-20	40.160	1.959	65.663	3.009	25.503**	3.737
	21-26	39.195	2.216	64.058	3.357	24.863**	4.004
	27-39	39.301	2.182	57.358	2.722	18.057**	3.489
	40+	33.510	0.987	44.648	1.227	11.137**	1.574
DSP	1-6	61.900	5.474	60.708	4.862	-1.192	7.321
	7-13	48.174	4.160	55.186	4.632	7.011	6.226
	14-20	43.390	3.837	52.237	4.010	8.847	5.395
	21-26	40.164	3.609	47.809	3.760	7.645	4.878
	27-39	38.848	3.107	51.347	3.702	12.499**	4.833
	40+	23.039	0.636	28.214	0.709	5.175**	0.953
OA	1-6	33.388	1.945	32.810	3.256	-0.578	3.793
	7-13	38.659	2.507	49.141	5.586	10.482*	6.122
	14-20	36.679	2.500	53.016	6.413	16.337**	6.955
	21-26	38.842	2.692	52.124	5.374	13.282**	6.206
	27-39	37.959	3.102	44.419	3.674	6.460	4.808
	40+	27.016	0.960	29.854	1.044	2.838**	1.419
OP	1-6	93.384	6.957	114.166	8.398	20.782*	10.906
	7-13	91.070	7.090	97.503	7.413	6.433	10.258
	14-20	92.380	7.724	92.675	7.606	0.295	11.009
	21-26	89.066	7.959	89.293	7.873	0.227	10.208
	27-39	68.904	6.498	75.584	6.787	6.680	9.396
	40+	67.966	2.182	70.799	2.293	2.833	3.166

Table 13: Proportion exiting income support

	Before	Before SE	After	After SE	Difference	Difference SE
Males						
UB	0.035	0.000	0.037	0.000	0.002**	0.000
UB – 25-44	0.038	0.000	0.039	0.000	0.001	0.001
DSP	0.004	0.000	0.004	0.000	0.000	0.000
OA	0.039	0.001	0.044	0.001	0.006**	0.001
OP	0.008	0.000	0.007	0.000	0.000	0.000
Females						
UB	0.034	0.000	0.034	0.000	0.000	0.000
UB – 25-44	0.034	0.000	0.035	0.000	0.001	0.001
PPS	0.007	0.000	0.006	0.000	-0.002**	0.000
PPP	0.018	0.000	0.016	0.000	-0.002**	0.000
DSP	0.003	0.000	0.003	0.000	0.000	0.000
OA	0.010	0.000	0.009	0.000	-0.001	0.000
OP	0.006	0.000	0.005	0.000	0.000	0.000

Table 14: Proportion exiting income support, by spell duration category – Males

Payment type	Spell Duration	Before	Before SE	After	After SE	Difference	Difference SE
UB	1-6	0.067	0.001	0.060	0.001	-0.007**	0.0008
	7-13	0.059	0.001	0.065	0.001	0.006**	0.0009
	14-20	0.048	0.001	0.052	0.001	0.004**	0.0010
	21-26	0.037	0.001	0.040	0.001	0.003**	0.0011
	27-39	0.031	0.000	0.032	0.001	0.002*	0.0008
	40+	0.016	0.000	0.019	0.000	0.003**	0.0003
UB – 25-44	1-6	0.070	0.001	0.061	0.001	-0.009**	0.001
	7-13	0.063	0.001	0.068	0.001	0.005**	0.001
	14-20	0.052	0.001	0.055	0.001	0.003	0.002
	21-26	0.040	0.001	0.039	0.001	-0.001	0.002
	27-39	0.034	0.001	0.034	0.001	0.000	0.001
	40+	0.017	0.000	0.019	0.000	0.003**	0.000
DSP	1-6	0.014	0.001	0.013	0.001	0.000	0.0014
	7-13	0.010	0.001	0.011	0.001	0.001	0.0011
	14-20	0.007	0.001	0.010	0.001	0.003**	0.0010
	21-26	0.008	0.001	0.007	0.001	-0.001	0.0009
	27-39	0.005	0.000	0.007	0.000	0.002**	0.0006
	40+	0.004	0.000	0.004	0.000	0.000**	0.0001
OA	1-6	0.098	0.003	0.126	0.004	0.027**	0.0045
	7-13	0.041	0.002	0.066	0.004	0.025**	0.0045
	14-20	0.034	0.003	0.043	0.004	0.009*	0.0049
	21-26	0.020	0.003	0.039	0.004	0.019**	0.0050
	27-39	0.016	0.002	0.029	0.002	0.013**	0.0027
	40+	0.009	0.001	0.017	0.001	0.008**	0.0011
OP	1-6	0.023	0.002	0.027	0.003	0.004	0.0035
	7-13	0.027	0.003	0.018	0.002	-0.009**	0.0034
	14-20	0.011	0.002	0.031	0.003	0.019**	0.0035
	21-26	0.007	0.002	0.014	0.002	0.007**	0.0027
	27-39	0.009	0.001	0.008	0.001	-0.001	0.0018
	40+	0.004	0.000	0.004	0.000	0.000	0.0004

Table 15: Proportion exiting income support, by spell duration category – Females

Payment type	Spell Duration	Before	Before SE	After	After SE	Difference	Difference SE
UB	1-6	0.061	0.001	0.054	0.001	-0.007**	0.0011
	7-13	0.056	0.001	0.059	0.001	0.003**	0.0013
	14-20	0.044	0.001	0.044	0.001	0.000	0.0013
	21-26	0.036	0.001	0.035	0.001	-0.001	0.0015
	27-39	0.030	0.001	0.031	0.001	0.000	0.0011
	40+	0.018	0.000	0.021	0.000	0.003**	0.0004
UB – 25-44	1-6	0.065	0.001	0.059	0.001	-0.005**	0.002
	7-13	0.062	0.002	0.068	0.002	0.007**	0.002
	14-20	0.048	0.002	0.050	0.002	0.001	0.003
	21-26	0.037	0.002	0.040	0.002	0.003	0.003
	27-39	0.032	0.001	0.035	0.002	0.003	0.002
	40+	0.015	0.000	0.017	0.000	0.002**	0.001
PPS	1-6	0.022	0.001	0.011	0.001	-0.010**	0.0009
	7-13	0.019	0.001	0.013	0.001	-0.006**	0.0009
	14-20	0.015	0.001	0.012	0.001	-0.003**	0.0008
	21-26	0.012	0.001	0.011	0.001	-0.001	0.0008
	27-39	0.010	0.000	0.009	0.000	-0.002**	0.0005
	40+	0.005	0.000	0.004	0.000	-0.001**	0.0001
PPP	1-6	0.050	0.001	0.029	0.001	-0.021**	0.0015
	7-13	0.040	0.001	0.038	0.001	-0.002	0.0016
	14-20	0.032	0.001	0.032	0.001	0.000	0.0016
	21-26	0.026	0.001	0.027	0.001	0.001	0.0017
	27-39	0.019	0.001	0.019	0.001	-0.001	0.0011
	40+	0.010	0.000	0.010	0.000	0.000	0.0003
DSP	1-6	0.012	0.001	0.009	0.001	-0.003**	0.0016
	7-13	0.010	0.001	0.008	0.001	-0.002	0.0013
	14-20	0.007	0.001	0.006	0.001	-0.001	0.0011
	21-26	0.008	0.001	0.005	0.001	-0.002**	0.0011
	27-39	0.005	0.000	0.005	0.000	0.000	0.0007
	40+	0.003	0.000	0.003	0.000	0.000**	0.0001
OA	1-6	0.036	0.001	0.066	0.003	0.030**	0.0035
	7-13	0.022	0.001	0.033	0.003	0.011**	0.0029
	14-20	0.015	0.001	0.018	0.002	0.003	0.0023
	21-26	0.012	0.001	0.013	0.002	0.001	0.0020
	27-39	0.010	0.001	0.012	0.001	0.002*	0.0011
	40+	0.007	0.000	0.007	0.000	0.001**	0.0002
OP	1-6	0.021	0.002	0.012	0.001	-0.009**	0.0023
	7-13	0.020	0.002	0.014	0.001	-0.006**	0.0023
	14-20	0.011	0.001	0.012	0.001	0.001	0.0020
	21-26	0.010	0.001	0.008	0.001	-0.002	0.0020
	27-39	0.007	0.001	0.008	0.001	0.001	0.0013
	40+	0.005	0.000	0.005	0.000	0.000	0.0002

Person-fortnight analysis – Difference-in-Difference Evaluation

A. 'Long-term' spell durations defined as 21-26 fortnights

Table 16: Proportion reporting earnings

	Before period				After period				Difference-in-difference estimate	Difference-in-difference SE
	Short-term		Long-term		Short-term		Long-term			
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE		
Males										
UB	0.137	0.001	0.183	0.003	0.142	0.002	0.205	0.003	0.018**	0.005
UB – 25-44	0.143	0.002	0.197	0.004	0.144	0.002	0.214	0.005	0.016**	0.007
DSP	0.085	0.005	0.065	0.004	0.083	0.005	0.086	0.005	0.024**	0.010
OA	0.045	0.004	0.064	0.010	0.037	0.004	0.086	0.013	0.029*	0.017
OP	0.053	0.007	0.147	0.016	0.114	0.012	0.111	0.014	-0.097**	0.025
Females										
UB	0.199	0.002	0.242	0.005	0.209	0.002	0.262	0.005	0.009	0.008
UB – 25-44	0.203	0.004	0.251	0.009	0.213	0.004	0.288	0.010	0.027*	0.015
PPS	0.400	0.005	0.328	0.006	0.349	0.005	0.367	0.006	0.090**	0.011
PPP	0.116	0.003	0.103	0.005	0.116	0.004	0.127	0.005	0.023**	0.009
DSP	0.113	0.008	0.092	0.007	0.106	0.007	0.106	0.007	0.021	0.014
OA	0.095	0.005	0.106	0.006	0.089	0.007	0.125	0.011	0.025*	0.015
OP	0.178	0.011	0.183	0.013	0.196	0.011	0.173	0.012	-0.028	0.024

Note: Short-term spell durations defined as "spell durations of 1-6 fortnights"; long-term spell durations defined as "spell durations of 21-26 fortnights."

Table 17: Mean reported earnings

	Before period				After period				Difference-in-difference estimate	Difference-in-difference SE
	Short-term		Long-term		Short-term		Long-term			
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE		
Males										
UB	78.663	1.148	97.307	2.177	81.940	1.387	111.069	2.422	10.485**	3.721
UB – 25-44	86.987	1.753	106.894	3.498	88.226	2.360	111.514	3.530	3.381	5.774
DSP	46.884	3.554	28.576	2.472	46.187	3.413	45.322	3.283	17.444**	6.416
OA	14.460	1.570	22.432	4.553	18.935	2.190	28.511	5.547	1.603	7.665
OP	30.114	4.535	68.302	9.218	65.598	8.618	46.675	6.906	-57.111**	15.083
Females										
UB	86.955	1.399	100.874	2.557	97.961	1.485	121.002	3.026	9.121**	4.456
UB – 25-44	102.535	2.663	113.565	4.791	112.429	2.917	145.650	6.654	22.190**	9.101
PPS	306.049	4.844	227.230	4.627	280.106	5.178	285.557	5.416	84.269**	10.051
PPP	45.504	1.639	39.195	2.216	59.035	2.340	64.058	3.357	11.332**	4.934
DSP	61.900	5.474	40.164	3.609	60.708	4.862	47.809	3.760	8.837	8.987
OA	33.388	1.945	38.842	2.692	32.810	3.256	52.124	5.374	13.859*	7.108
OP	93.384	6.957	89.066	7.959	114.166	8.398	89.293	7.873	-20.556	15.629

Note: Short-term spell durations defined as "spell durations of 1-6 fortnights"; long-term spell durations defined as "spell durations of 21-26 fortnights"

Table 18: Proportion exiting income support receipt

	Before period				After period				Difference-in-difference estimate	Difference-in-difference SE
	Short-term		Long-term		Short-term		Long-term			
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE		
Males										
UB	0.067	0.001	0.037	0.001	0.060	0.001	0.040	0.001	0.010**	0.001
UB – 25-44	0.070	0.001	0.040	0.000	0.061	0.001	0.039	0.002	0.008**	0.002
DSP	0.014	0.001	0.008	0.001	0.013	0.001	0.007	0.001	-0.001	0.002
OA	0.098	0.003	0.020	0.003	0.126	0.004	0.039	0.004	-0.008	0.007
OP	0.023	0.002	0.007	0.002	0.027	0.003	0.014	0.002	0.003	0.004
Females										
UB	0.061	0.001	0.036	0.001	0.054	0.001	0.035	0.001	0.006**	0.002
UB – 25-44	0.065	0.001	0.037	0.002	0.059	0.001	0.040	0.002	0.009**	0.002
PPS	0.022	0.001	0.012	0.001	0.011	0.001	0.011	0.001	0.010**	0.001
PPP	0.050	0.001	0.026	0.001	0.029	0.001	0.027	0.001	0.021**	0.002
DSP	0.012	0.001	0.008	0.001	0.009	0.001	0.005	0.001	0.001	0.002
OA	0.036	0.001	0.012	0.001	0.066	0.003	0.013	0.002	-0.029**	0.004
OP	0.021	0.002	0.010	0.001	0.012	0.001	0.008	0.001	0.007**	0.003

Note: Short-term spell durations defined as "spell durations of 1-6 fortnights"; long-term spell durations defined as "spell durations of 21-26 fortnights"

B. 'Long-term' spell durations defined as 14-20 fortnights

Table 19: Proportion reporting earnings

	Before period				After period				Difference-in-difference estimate	Difference-in-difference SE
	Short-term		Long-term		Short-term		Long-term			
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE		
Males										
UB	0.137	0.001	0.185	0.002	0.142	0.002	0.207	0.003	0.017**	0.004
UB – 25-44	0.143	0.002	0.196	0.004	0.144	0.002	0.217	0.004	0.020**	0.006
DSP	0.085	0.005	0.078	0.005	0.083	0.005	0.084	0.005	0.009	0.010
OA	0.045	0.004	0.066	0.009	0.037	0.004	0.075	0.011	0.017	0.015
OP	0.053	0.007	0.152	0.015	0.114	0.012	0.099	0.012	-0.114**	0.024
Females										
UB	0.199	0.002	0.250	0.004	0.209	0.002	0.262	0.004	0.002	0.007
UB – 25-44	0.203	0.004	0.268	0.007	0.213	0.004	0.288	0.008	0.010	0.012
PPS	0.400	0.005	0.340	0.005	0.349	0.005	0.361	0.006	0.072**	0.011
PPP	0.116	0.003	0.106	0.004	0.116	0.004	0.129	0.005	0.022**	0.008
DSP	0.113	0.008	0.095	0.007	0.106	0.007	0.108	0.007	0.020	0.014
OA	0.095	0.005	0.102	0.006	0.089	0.007	0.120	0.012	0.024	0.016
OP	0.178	0.011	0.200	0.013	0.196	0.011	0.177	0.012	-0.041*	0.024

Note: Short-term spell durations defined as "spell durations of 1-6 fortnights"; long-term spell durations defined as "spell durations of 14-20 fortnights"

Table 20: Mean reported earnings

	Before period				After period				Difference-in-difference estimate	Difference-in-difference SE
	Short-term		Long-term		Short-term		Long-term			
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE		
Males										
UB	78.663	1.148	102.344	1.801	81.940	1.387	117.843	2.000	12.222**	3.238
UB – 25-44	86.987	1.753	106.753	2.658	88.226	2.360	119.958	2.864	11.965**	4.890
DSP	46.884	3.554	34.408	2.834	46.187	3.413	43.704	3.189	9.994	6.518
OA	14.460	1.570	24.287	4.430	18.935	2.190	30.807	5.537	2.045	7.586
OP	30.114	4.535	71.965	9.307	65.598	8.618	46.813	6.727	-60.636**	15.056
Females										
UB	86.955	1.399	117.140	7.916	97.961	1.485	128.067	2.630	-0.080	8.588
UB – 25-44	102.535	2.663	152.003	24.019	112.429	2.917	152.447	5.517	-9.451	24.959
PPS	306.049	4.844	237.114	4.516	280.106	5.178	280.219	5.213	69.048**	9.892
PPP	45.504	1.639	40.160	1.959	59.035	2.340	65.663	3.009	11.972**	4.588
DSP	61.900	5.474	43.390	3.837	60.708	4.862	52.237	4.010	10.039	9.187
OA	33.388	1.945	32.810	3.256	36.679	2.500	53.016	6.413	16.915**	7.859
OP	93.384	6.957	92.380	7.724	114.166	8.398	92.675	7.606	-20.487	15.377

Note: Short-term spell durations defined as "spell durations of 1-6 fortnights"; long-term spell durations defined as "spell durations of 14-20 fortnights"

Table 21: Proportion exiting income support receipt

	Before period				After period				Difference-in-difference estimate	Difference-in-difference SE
	Short-term		Long-term		Short-term		Long-term			
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE		
Males										
UB	0.067	0.001	0.048	0.001	0.060	0.001	0.052	0.001	0.010**	0.001
UB – 25-44	0.070	0.001	0.052	0.001	0.061	0.001	0.055	0.001	0.012**	0.002
DSP	0.014	0.001	0.007	0.001	0.013	0.001	0.010	0.001	0.003	0.002
OA	0.098	0.003	0.034	0.003	0.126	0.004	0.043	0.004	-0.018**	0.007
OP	0.023	0.002	0.011	0.002	0.027	0.003	0.031	0.003	0.016**	0.005
Females										
UB	0.061	0.001	0.044	0.001	0.054	0.001	0.044	0.001	0.007**	0.002
UB – 25-44	0.065	0.001	0.048	0.002	0.059	0.001	0.050	0.002	0.008**	0.003
PPS	0.022	0.001	0.015	0.001	0.011	0.001	0.012	0.001	0.008**	0.001
PPP	0.050	0.001	0.032	0.001	0.029	0.001	0.032	0.001	0.021**	0.002
DSP	0.012	0.001	0.007	0.001	0.009	0.001	0.006	0.001	0.002	0.002
OA	0.036	0.001	0.015	0.001	0.066	0.003	0.018	0.002	-0.027**	0.004
OP	0.021	0.002	0.011	0.001	0.012	0.001	0.012	0.001	0.010**	0.003

Note: Short-term spell durations defined as "spell durations of 1-6 fortnights"; long-term spell durations defined as "spell durations of 14-20 fortnights"

Spell-based analysis – Before-after comparisons

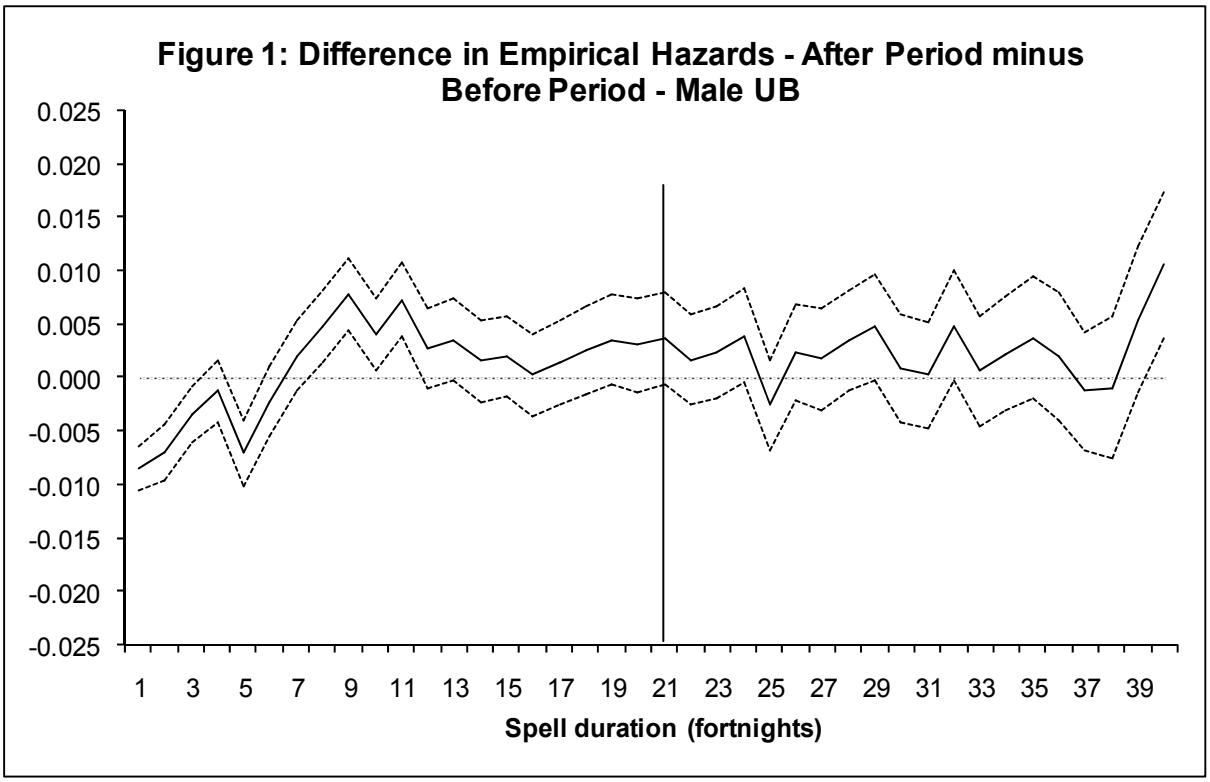
Table 22: Before-after estimates of program effects

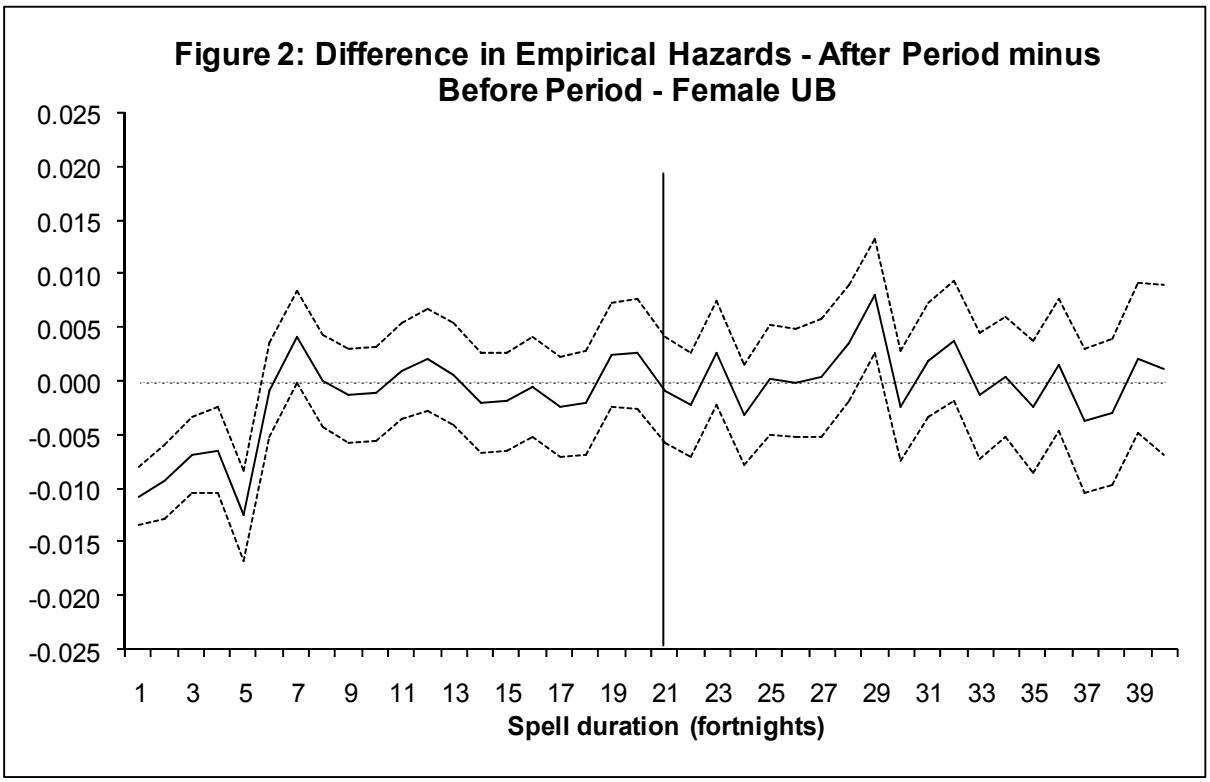
	Before	Before SE	After	After SE	Difference	Diff SE
Earnings ever						
Male UB	0.3803	0.0017	0.4153	0.0019	0.035**	0.0026
Male UB 25-44	0.4055	0.0026	0.4322	0.0028	0.027**	0.0038
Male DSP	0.1558	0.0056	0.1851	0.0062	0.029**	0.0084
Male OA	0.1084	0.0045	0.1352	0.0054	0.027**	0.0070
Male OP	0.1240	0.0084	0.2094	0.0124	0.085**	0.0149
Female UB	0.4518	0.0026	0.4910	0.0027	0.039**	0.0037
Female UB 25-44	0.4693	0.0044	0.5189	0.0048	0.050**	0.0066
Female PPS	0.5400	0.0042	0.5512	0.0045	0.011*	0.0062
Female PPP	0.2201	0.0035	0.2710	0.0043	0.051**	0.0056
Female DSP	0.1910	0.0080	0.1881	0.0079	-0.003	0.0113
Female OA	0.1799	0.0048	0.2188	0.0082	0.039**	0.0095
Female OP	0.2679	0.0102	0.3062	0.0109	0.038**	0.0149
Earnings any given fortnight						
Male UB	0.1454	0.0009	0.1597	0.0010	0.014**	0.0014
Male UB 25-44	0.1539	0.0013	0.1641	0.0015	0.010**	0.0020
Male DSP	0.0943	0.0040	0.0973	0.0041	0.003	0.0057
Male OA	0.0459	0.0025	0.0560	0.0029	0.010**	0.0039
Male OP	0.0782	0.0062	0.1178	0.0087	0.040**	0.0106
Female UB	0.2026	0.0016	0.2251	0.0017	0.023**	0.0023
Female UB 25-44	0.2082	0.0026	0.2340	0.0029	0.026**	0.0039
Female PPS	0.3972	0.0037	0.3820	0.0038	-0.015**	0.0053
Female PPP	0.1268	0.0024	0.1370	0.0027	0.010**	0.0037
Female DSP	0.1293	0.0062	0.1124	0.0057	-0.017**	0.0085
Female OA	0.0975	0.0032	0.1070	0.0051	0.010	0.0060
Female OP	0.1886	0.0082	0.2010	0.0086	0.012	0.0119
Mean fortnightly earnings						
Male UB	92.8361	2.6915	100.6039	1.2828	7.768**	2.9815
Male UB 25-44	106.0192	5.5623	106.7222	1.3440	0.703	5.7224
Male DSP	51.7640	2.8118	57.5756	3.0046	5.812	4.1150
Male OA	19.3579	1.3430	31.1028	1.9847	11.745**	2.3964
Male OP	41.7035	4.0397	73.1234	7.0629	31.420**	8.1366
Female UB	95.7589	0.9854	115.8979	1.9956	20.139**	2.2256
Female UB 25-44	112.5918	1.9482	133.8524	2.2165	21.261**	2.9510
Female PPS	316.5180	3.4496	318.7119	3.8665	2.194	5.1817
Female PPP	54.0191	1.2568	78.9109	1.9546	24.892**	2.3238
Female DSP	70.6930	4.1779	63.1751	3.9133	-7.518	5.7244
Female OA	37.9381	1.4614	49.4463	2.7505	11.508**	3.1146
Female OP	102.4191	5.5382	117.3396	6.1390	14.921*	8.2679

Table 22 continued: Before-after estimates of program effects

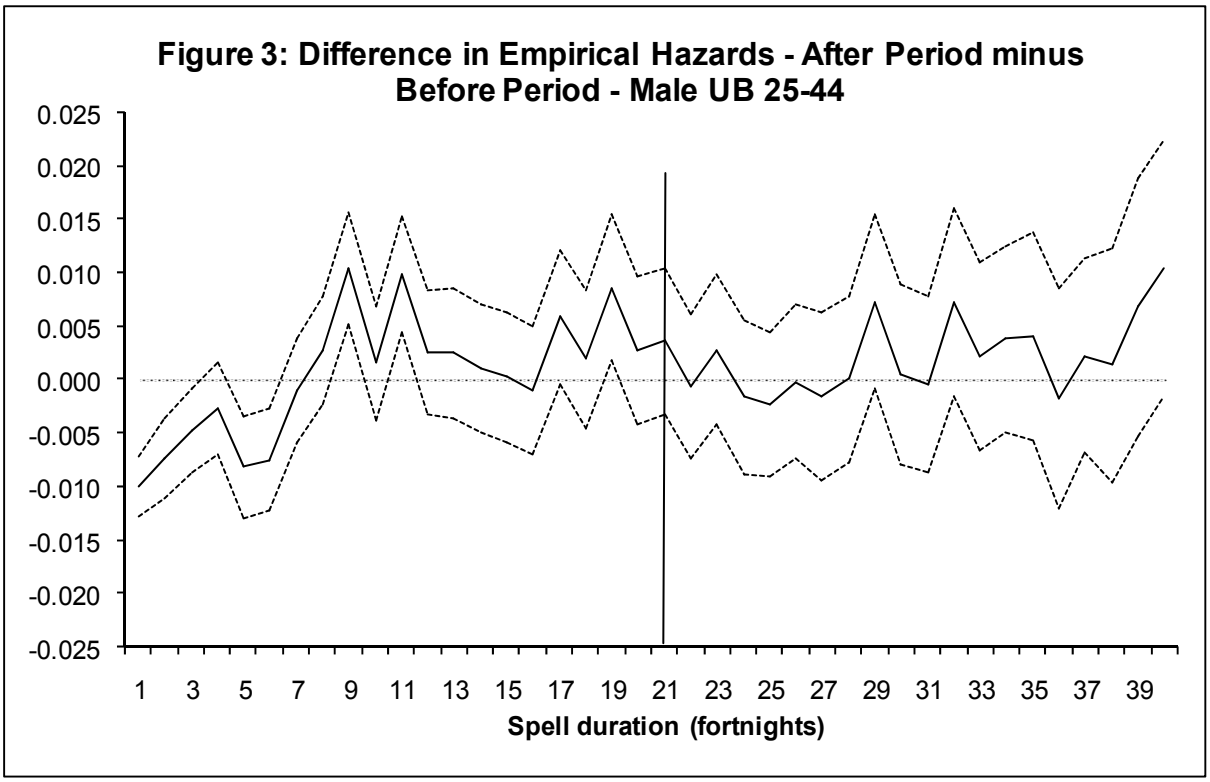
	Before	Before SE	After	After SE	Difference	Diff SE
TTO - year						
Male UB	0.5483	0.0016	0.5533	0.0017	0.005**	0.0024
Male UB 25-44	0.5270	0.0024	0.5377	0.0025	0.011**	0.0035
Male DSP	0.8713	0.0053	0.8730	0.0054	0.002	0.0076
Male OA	0.4766	0.0075	0.4475	0.0076	-0.029**	0.0107
Male OP	0.8746	0.0119	0.7476	0.0127	-0.127**	0.0174
Female UB	0.5714	0.0025	0.5934	0.0025	0.022**	0.0035
Female UB 25-44	0.5389	0.0041	0.5521	0.0045	0.013**	0.0061
Female PPS	0.7924	0.0034	0.8586	0.0031	0.066**	0.0046
Female PPP	0.6341	0.0039	0.7069	0.0042	0.073**	0.0057
Female DSP	0.8880	0.0066	0.9061	0.0060	0.018**	0.0089
Female OA	0.7322	0.0058	0.7091	0.0050	-0.023**	0.0077
Female OP	0.8238	0.0091	0.8235	0.0092	0.000	0.0130

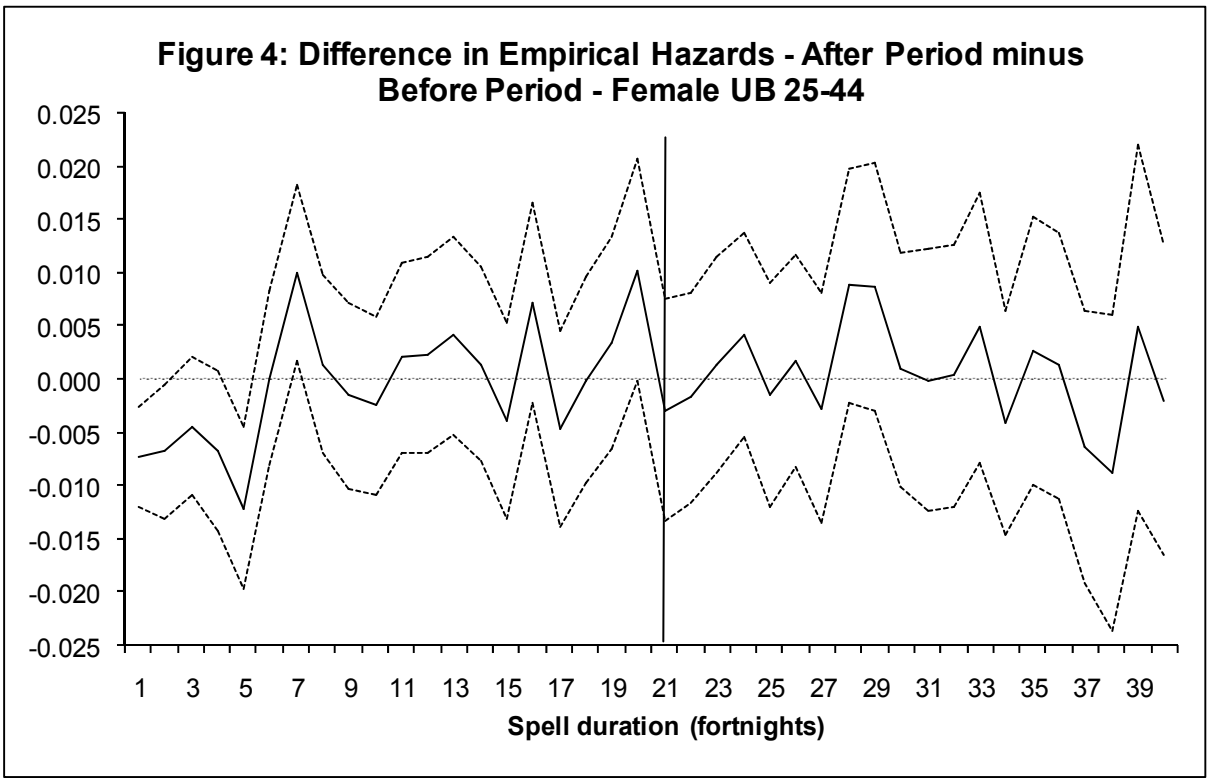
Outcome measures: *Earnings ever* – Probability report earnings in any fortnight of the income support spell; *Earnings any given fortnight* – Probability of reporting earnings in any given fortnight of the spell; *Mean fortnightly earnings* – mean fortnightly earnings of the spell; *TTO-year* – Proportion of the year subsequent to spell commencement spent on income support. The unit of observation is the spell.



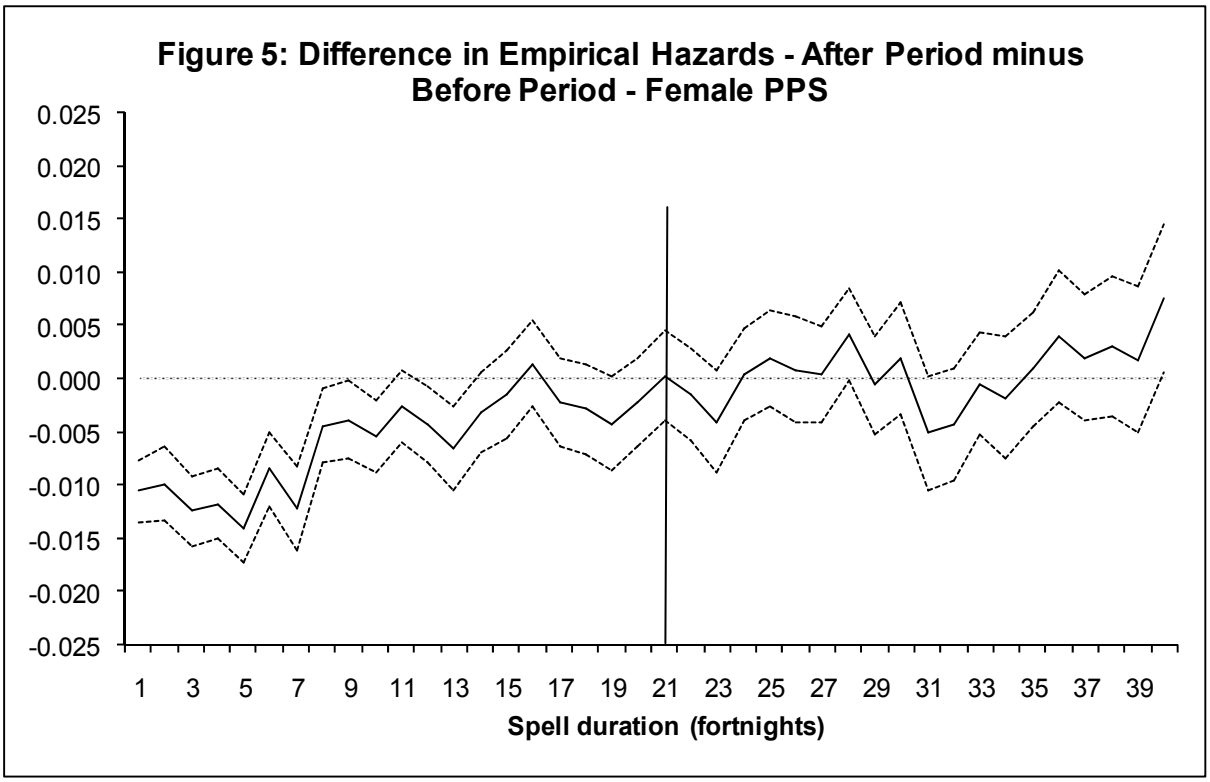


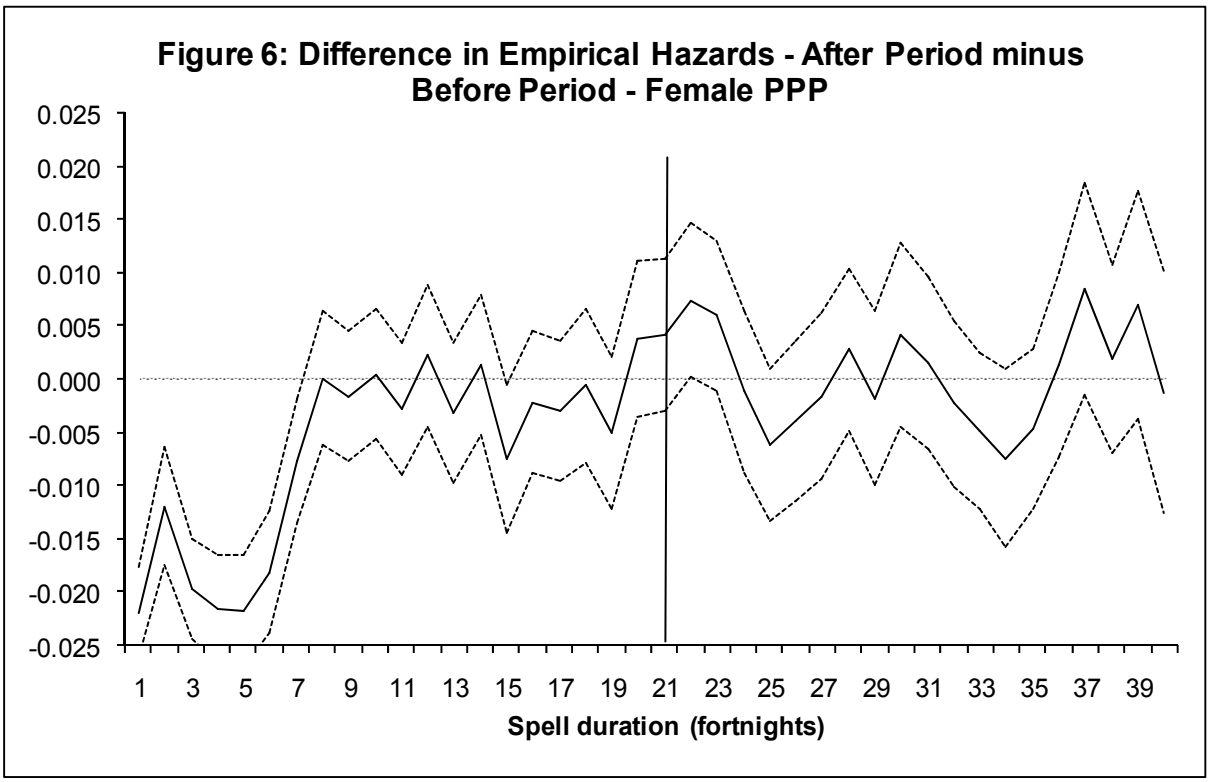
Vertical line indicates earliest spell duration at which the maximum working credit balance could be reached.





Vertical line indicates earliest spell duration at which the maximum working credit balance could be reached.





Vertical line indicates earliest spell duration at which the maximum working credit balance could be reached.

Figure 7: Difference in Empirical Hazards - After Period Minus Before Period - Male DSP

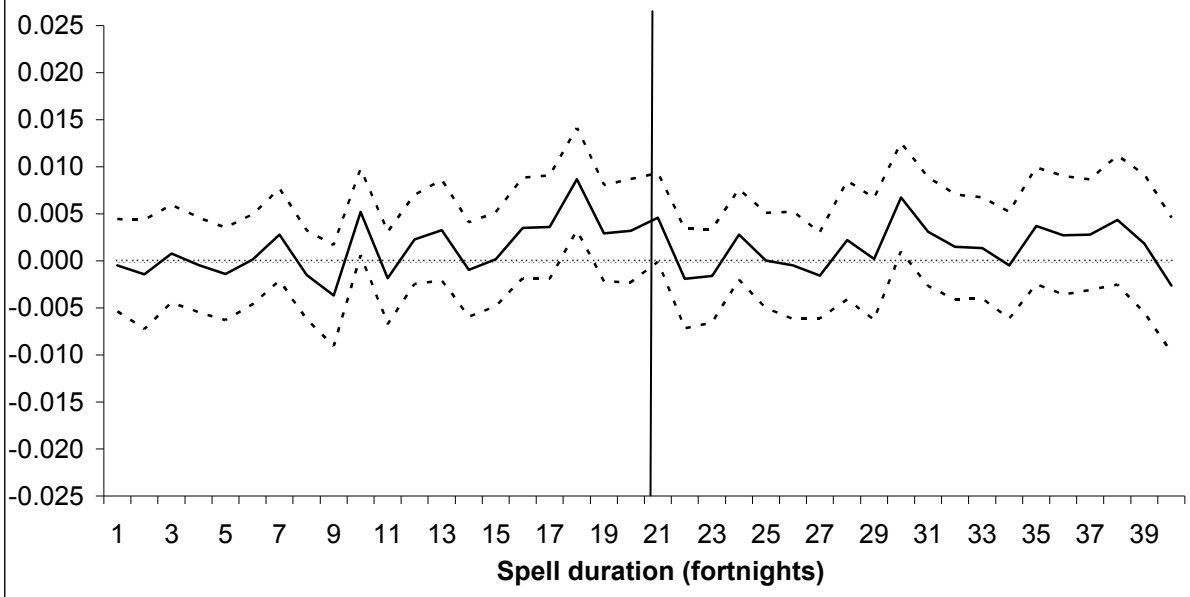
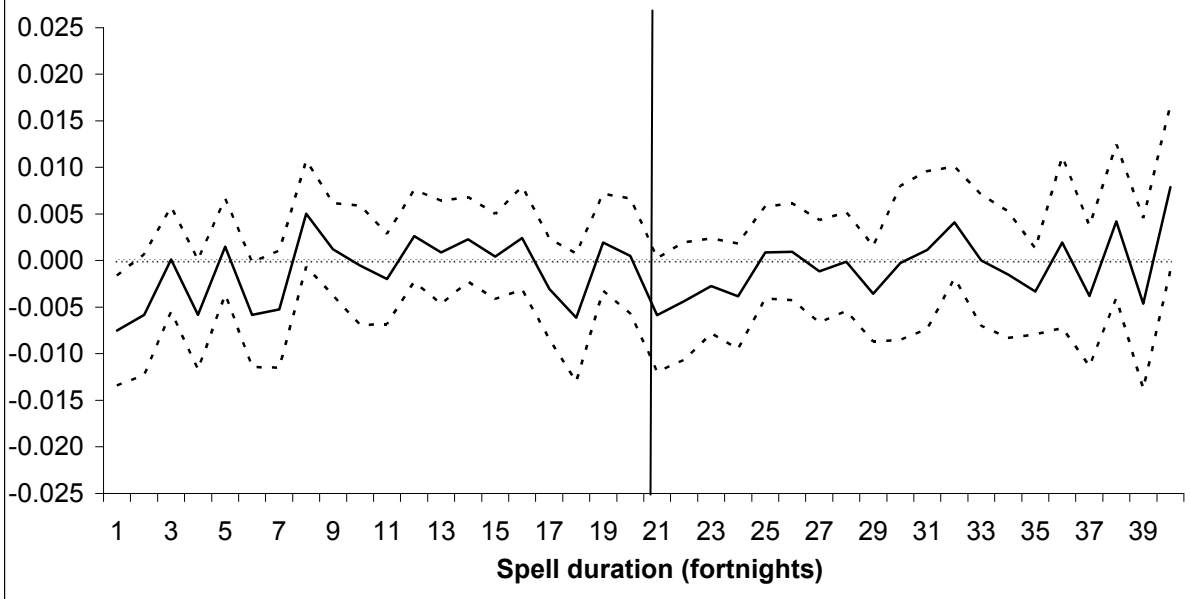
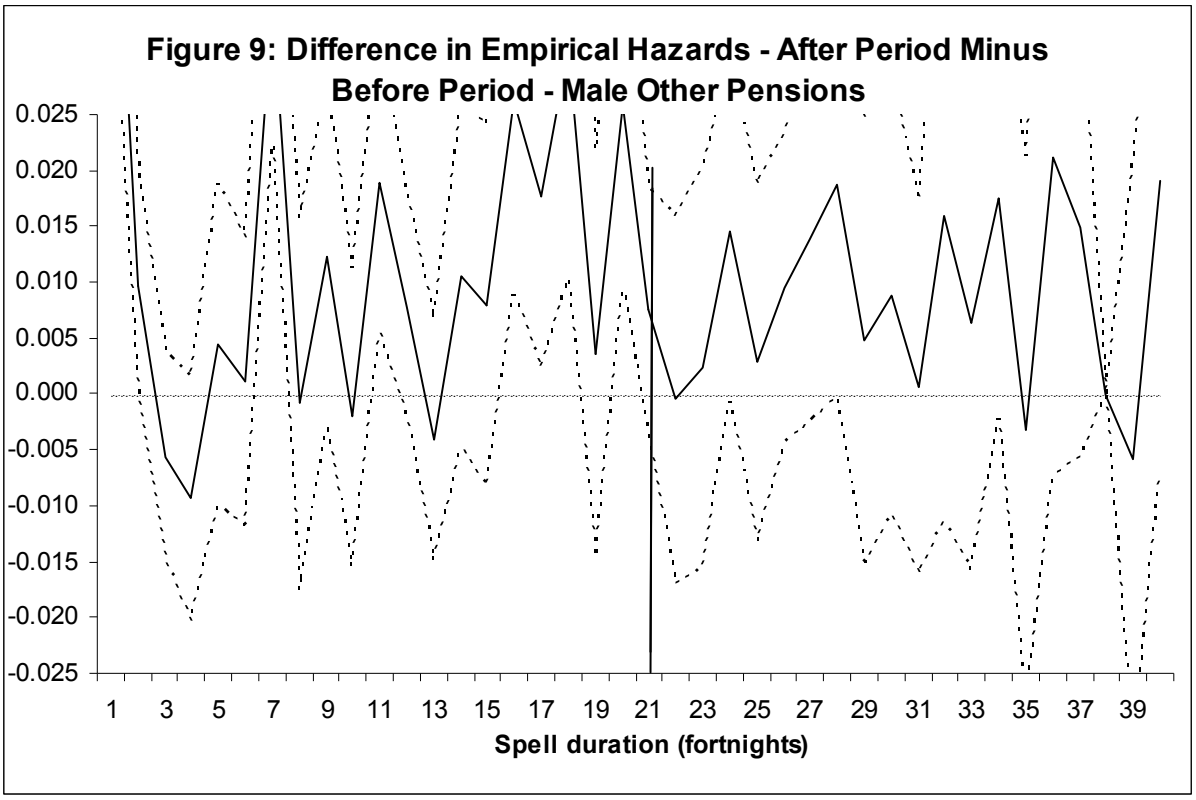
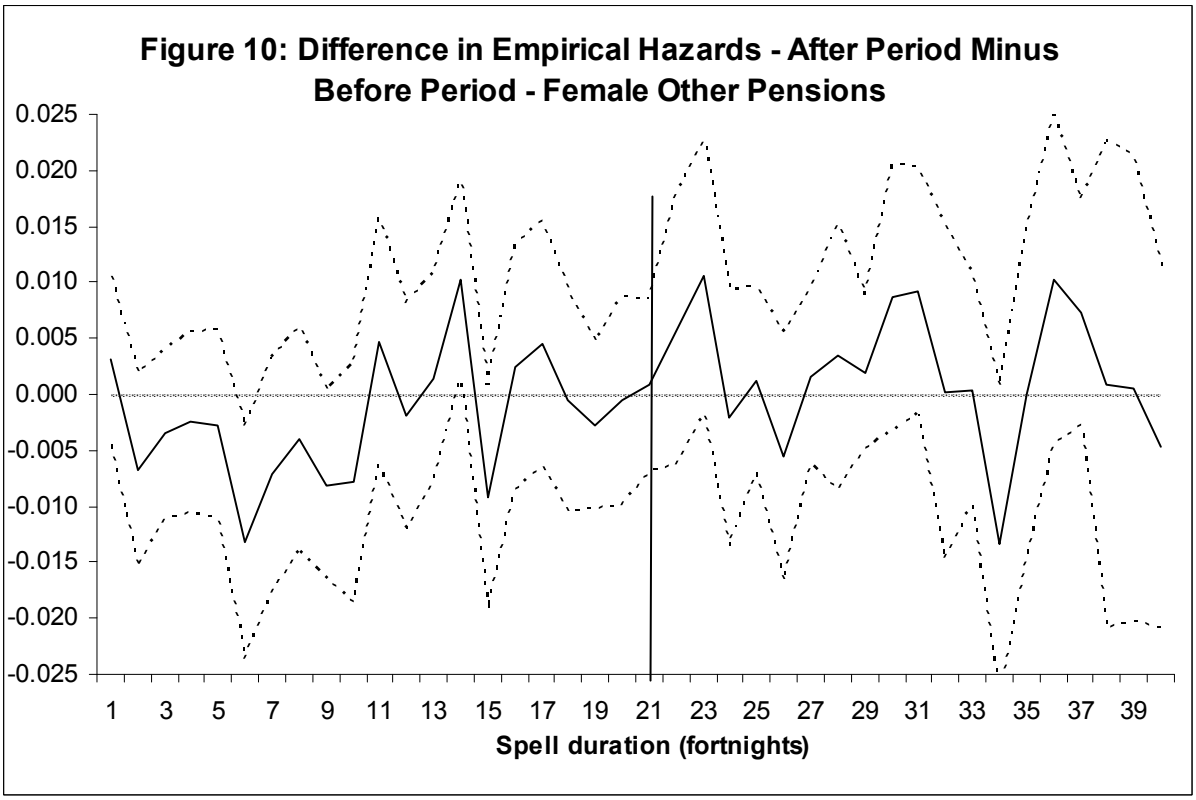


Figure 8: Difference in Empirical Hazards - After Period Minus Before Period - Female DSP

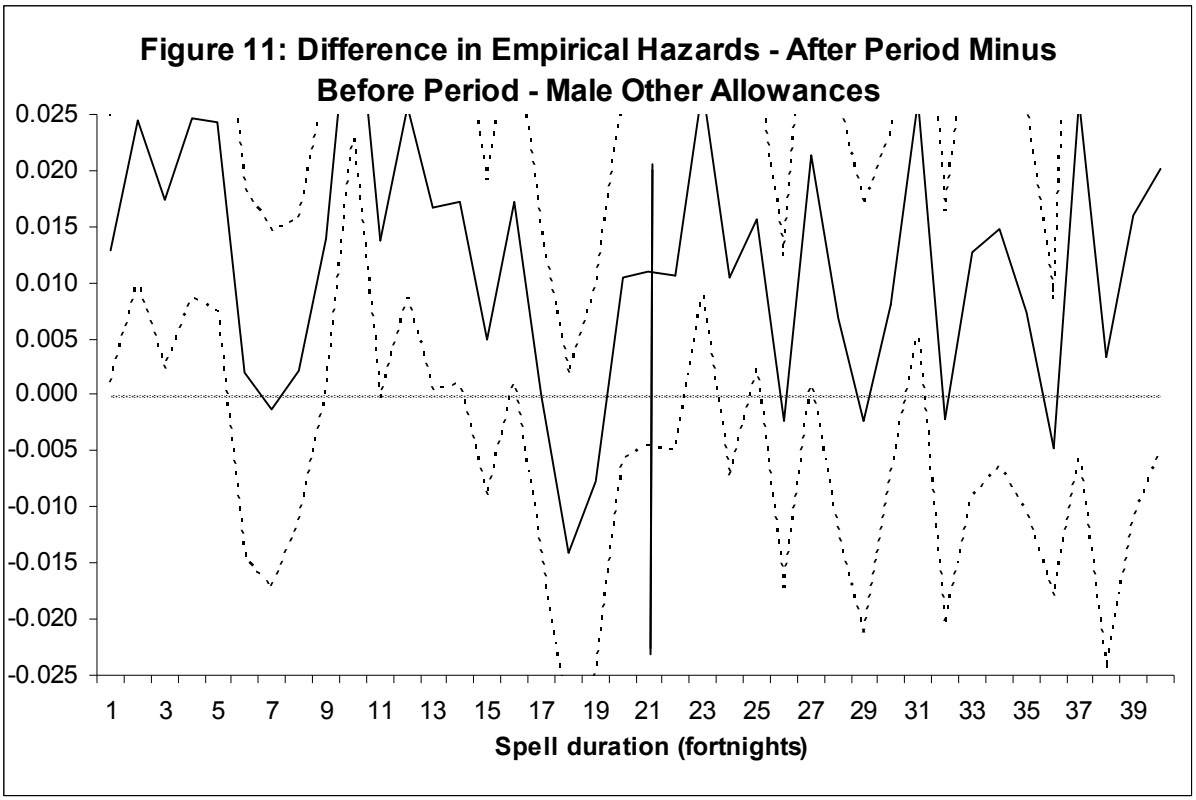


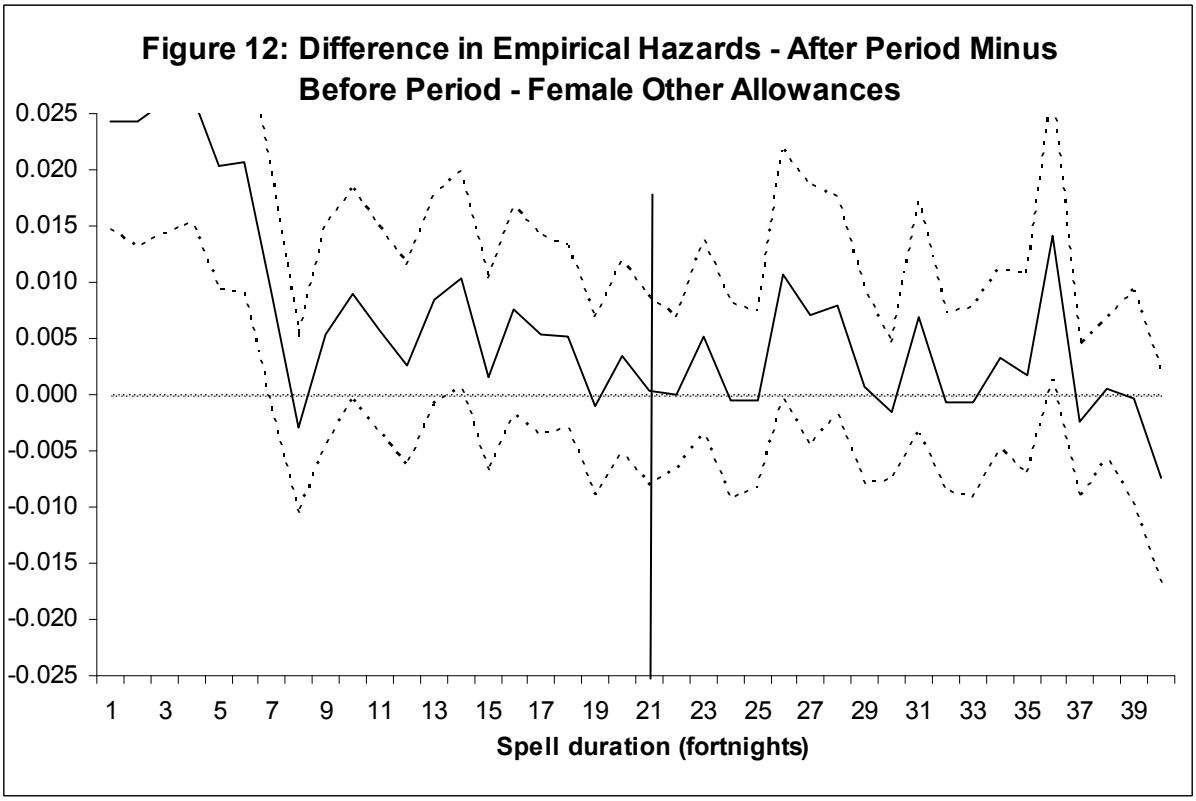
Vertical line indicates earliest spell duration at which the maximum working credit balance could be reached.





Vertical line indicates earliest spell duration at which the maximum working credit balance could be reached.





Vertical line indicates earliest spell duration at which the maximum working credit balance could be reached.

Regression approaches

Person-fortnight as the unit of analysis

Table 23: Probability report earnings in any given fortnight

		Before-after		Difference-in-difference (1)		(2)	
		Transitional	Full	Transitional	Full	Transitional	Full
Male UB	Estimate	0.004**	0.017**	0.008**	0.013**	0.006	0.009**
	SE	0.0012	0.0014	0.0034	0.0029	0.0041	0.0035
Male UB 25-44	Estimate	0.006**	0.018**	0.020**	0.023**	0.017**	0.018**
	SE	0.0018	0.0021	0.0054	0.0046	0.0064	0.0055
Female UB	Estimate	0.004**	0.016**	-0.010*	-0.004	-0.009	-0.010*
	SE	0.0020	0.0023	0.0056	0.0047	0.0067	0.0056
Female UB 25-44	Estimate	0.014**	0.019**	-0.021**	0.013	-0.006	0.015
	SE	0.0037	0.0042	0.0097	0.0088	0.0118	0.0108
Female PPS	Estimate	0.003	0.014**	0.035**	0.051**	0.036**	0.066**
	SE	0.0018	0.0023	0.0085	0.0068	0.0099	0.0080
Female PPP	Estimate	0.003	0.010**	0.019**	0.021**	0.019**	0.021**
	SE	0.0018	0.0022	0.0067	0.0057	0.0080	0.0067

Estimates obtained from Probit models of the probability earnings are reported in the person-fortnight. *Transitional* – Fortnight was in the period 3rd October 2003 to 25h June 2004; *Full* – Fortnight was in the period after 25th June 2004. (1) Treatment group comprises fortnights in the 14-20 fortnight spell duration interval. (2) Treatment group comprises fortnights in the 21-26 fortnight spell duration interval.

Table 24: Amount of earnings reported in any given fortnight

		Before-after		Difference-in-difference (1)		(2)	
		Transitional	Full	Transitional	Full	Transitional	Full
Male UB	Estimate	39.869**	167.628**	62.890*	117.291**	59.262	80.541**
	SE	12.341	34.392	37.363	39.532	41.232	37.937
Male UB 25-44	Estimate	58.131**	170.847**	192.672**	214.291**	163.547*	165.887*
	SE	24.304	60.312	93.958	97.130	91.728	88.353
Female UB	Estimate	30.659**	101.302**	-61.930*	-19.858	-43.990	-47.863
	SE	11.639	20.775	32.093	26.847	36.344	30.977
Female UB 25-44	Estimate	95.385**	135.650**	-143.617*	88.904	-30.630	119.738
	SE	34.784	47.007	73.996	76.731	77.591	86.422
Female PPS	Estimate	31.168**	70.151**	100.734**	132.310**	104.047**	169.021**
	SE	4.315	5.385	19.324	15.347	22.734	17.847
Female PPP	Estimate	35.891**	91.511**	114.662**	128.880**	110.405**	121.112**
	SE	11.064	17.479	41.843	38.795	47.229	42.458

Estimates obtained from Tobit models of reported fortnightly earnings. *Transitional* – Fortnight was in the period 3rd October 2003 to 25h June 2004; *Full* – Fortnight was in the period after 25th June 2004. (1) Treatment group comprises fortnights in the 14-20 fortnight spell duration interval. (2) Treatment group comprises fortnights in the 21-26 fortnight spell duration interval.

Spell as the unit of analysis

Table 25: Before-after estimates of the effects of WC on one-year TTO

	Estimate	SE
Male UB	-0.001	0.0024
Male UB 25-44	0.003	0.0035
Female UB	0.013**	0.0036
Female UB 25-44	0.011*	0.0060
Females PPS	0.063**	0.0049
Females PPP	0.067**	0.0060

Outcome: Proportion of time on income support in the year subsequent to spell commencement.

Table 26: Effects of Working Credit on the hazard rate (conditional probability of exit) – Relative risk ratio estimates

		Before-after		Difference-in-difference (1)		(2)	
		Transitional	Full	Transitional	Full	Transitional	Full
Male UB	Estimate	0.953**	0.926**	0.988	1.033	1.027	1.041
	SE	0.0111	0.0097	0.0350	0.0313	0.0463	0.0420
Male UB 25-44	Estimate	0.959**	0.912**	1.033	1.119**	0.068	1.068
	SE	0.0160	0.0138	0.0524	0.0490	1.0495	0.0630
Female UB	Estimate	0.917**	0.908**	1.074	1.092*	0.971	0.905*
	SE	0.0158	0.0142	0.0567	0.0490	0.0662	0.0550
Female UB 25-44	Estimate	0.938**	0.917**	1.091	1.129	1.034	0.922
	SE	0.0271	0.0243	0.0987	0.0883	0.1155	0.0985
Female PPS	Estimate	0.648**	0.688**	1.375**	1.665**	1.810**	2.005**
	SE	0.0243	0.0235	0.1671	0.1780	0.2348	0.2349
Female PPP	Estimate	0.673**	0.741**	1.322**	1.619**	1.434**	1.740**
	SE	0.0215	0.0210	0.1305	0.1338	0.1662	0.1704

Notes: Estimates are effects of Working Credit on hazard ratios, obtained from a proportional hazards model of exit from income support. An estimate greater than one denotes a positive impact on exit probability. *Transitional* – Fortnight was in the period 3rd October 2003 to 25h June 2004; *Full* – Fortnight was in the period after 25th June 2004. (1) Treatment group comprises fortnights in the 14-20 fortnight spell duration interval. (2) Treatment group comprises fortnights in the 21-26 fortnight spell duration interval. All samples were halved in size to enable estimation (half the spells were randomly dropped). Models which incorporate Gamma-distributed unobserved heterogeneity were also estimated on smaller sub-samples, but are not reported because they produced almost identical estimates.

Matching approaches

Person-fortnight analysis – Before-after estimates

Table 27: Probability report earnings

	Spell Duration	Treated	Control	Difference	Diff SE
Male UB	All	0.1782	0.1710	0.007**	0.0010
	1-6	0.1418	0.1347	0.007**	0.0019
	7-13	0.1933	0.1713	0.022**	0.0024
	14-20	0.2070	0.1889	0.018**	0.0029
	21-26	0.2053	0.1880	0.017**	0.0036
	27-39	0.1968	0.1804	0.016**	0.0029
	40+	0.1759	0.1709	0.005**	0.0018
Male UB 25-44	All	0.1878	0.1794	0.008**	0.0016
	1-6	0.1439	0.1382	0.006**	0.0027
	7-13	0.2013	0.1775	0.024**	0.0035
	14-20	0.2167	0.1935	0.023**	0.0044
	21-26	0.2142	0.1973	0.017**	0.0053
	27-39	0.2037	0.2011	0.003	0.0048
	40+	0.1899	0.1922	-0.002	0.0029
Female UB	All	0.2475	0.2407	0.007**	0.0017
	1-6	0.2090	0.1989	0.010**	0.0032
	7-13	0.2599	0.2409	0.019**	0.0039
	14-20	0.2622	0.2662	-0.004	0.0048
	21-26	0.2618	0.2485	0.013**	0.0057
	27-39	0.2585	0.2306	0.028**	0.0046
	40+	0.2512	0.2426	0.009**	0.0029
Female UB 25-44	All	0.2490	0.2471	0.002	0.0033
	1-6	0.2134	0.2070	0.006	0.0052
	7-13	0.2826	0.2605	0.022**	0.0070
	14-20	0.2884	0.2764	0.012	0.0086
	21-26	0.2883	0.2649	0.023**	0.0100
	27-39	0.2641	0.2573	0.007	0.0094
	40+	0.2407	0.2372	0.003	0.0047
Female PPS	All	0.3098	0.3255	-0.016**	0.0025
	1-6	0.3487	0.3805	-0.032**	0.0057
	7-13	0.3605	0.3651	-0.005	0.0053
	14-20	0.3609	0.3373	0.024**	0.0057
	21-26	0.3671	0.3326	0.034**	0.0056
	27-39	0.3682	0.3363	0.032**	0.0049
	40+	0.2960	0.3008	-0.005	0.0031
Female PPP	All	0.1145	0.1077	0.007**	0.0016
	1-6	0.1165	0.1159	0.001	0.0040
	7-13	0.1240	0.1038	0.020**	0.0040
	14-20	0.1287	0.1008	0.028**	0.0045
	21-26	0.1271	0.1047	0.022**	0.0050
	27-39	0.1241	0.0967	0.027**	0.0043
	40+	0.1099	0.1056	0.004**	0.0021

Table 28: Mean reported fortnightly earnings

	Spell Duration	Treated	Control	Difference	Diff SE
Male UB	All	92.85	85.48	7.376**	1.14
	1-6	81.95	75.03	6.922**	1.77
	7-13	124.03	99.38	24.648**	6.20
	14-20	117.86	107.34	10.522**	2.50
	21-26	111.11	101.56	9.552**	3.88
	27-39	102.88	85.49	17.391**	2.29
	40+	80.55	74.25	6.302**	1.51
Male UB 25-44	All	99.19	93.25	5.943**	1.30
	1-6	88.21	81.34	6.868**	2.91
	7-13	125.76	106.55	19.204**	3.20
	14-20	120.01	106.67	13.339**	3.76
	21-26	111.51	104.36	7.150	6.78
	27-39	108.27	98.55	9.721**	3.54
	40+	88.34	88.56	-0.223	1.94
Female UB	All	114.33	103.48	10.846**	1.62
	1-6	98.01	88.84	9.167**	2.07
	7-13	139.53	114.44	25.083**	8.10
	14-20	128.17	120.94	7.233**	3.12
	21-26	121.19	103.01	18.176**	3.42
	27-39	117.68	98.11	19.569**	2.77
	40+	109.52	95.73	13.787**	2.46
Female UB 25-44	All	121.34	116.24	5.102**	2.18
	1-6	112.44	105.54	6.899*	3.70
	7-13	159.46	135.60	23.868**	5.30
	14-20	152.51	163.66	-11.150	77.70
	21-26	145.65	123.20	22.447**	6.82
	27-39	129.31	112.84	16.469**	5.89
	40+	107.08	101.08	6.000**	2.75
Female PPS	All	212.73	212.95	-0.211	1.95
	1-6	280.18	289.00	-8.822*	5.13
	7-13	287.98	264.75	23.230**	4.83
	14-20	280.22	232.63	47.593**	4.83
	21-26	285.60	228.00	57.600**	4.81
	27-39	280.80	223.45	57.354**	4.01
	40+	194.34	186.77	7.570**	2.35
Female PPP	All	50.55	36.21	14.339**	0.74
	1-6	59.10	42.52	16.582**	2.12
	7-13	67.95	38.13	29.823**	2.37
	14-20	65.75	35.54	30.210**	2.39
	21-26	64.13	37.43	26.701**	2.69
	27-39	57.42	35.19	22.233**	2.25
	40+	44.66	33.31	11.348**	0.93

Table 29: Probability of exiting income support

	Spell Duration	Treated	Control	Difference	Diff SE
Male UB	All	0.0356	0.0423	-0.007**	0.0006
	1-6	0.0602	0.0702	-0.010**	0.0014
	7-13	0.0647	0.0618	0.003*	0.0015
	14-20	0.0512	0.0524	-0.001	0.0016
	21-26	0.0392	0.0422	-0.003*	0.0018
	27-39	0.0318	0.0345	-0.003*	0.0014
	40+	0.0170	0.0212	-0.004**	0.0007
Male UB 25-44	All	0.0390	0.0480	-0.009**	0.0009
	1-6	0.0609	0.0708	-0.010**	0.0020
	7-13	0.0679	0.0678	0.000	0.0023
	14-20	0.0549	0.0569	-0.002	0.0025
	21-26	0.0389	0.0418	-0.003	0.0026
	27-39	0.0337	0.0390	-0.005**	0.0023
	40+	0.0192	0.0233	-0.004**	0.0011
Female UB	All	0.0343	0.0414	-0.007**	0.0008
	1-6	0.0542	0.0605	-0.006**	0.0019
	7-13	0.0590	0.0619	-0.003	0.0021
	14-20	0.0435	0.0502	-0.007**	0.0023
	21-26	0.0347	0.0384	-0.004	0.0025
	27-39	0.0301	0.0312	-0.001	0.0018
	40+	0.0201	0.0239	-0.004**	0.0010
Female UB 25-44	All	0.0352	0.0436	-0.008**	0.0015
	1-6	0.0595	0.0678	-0.008**	0.0032
	7-13	0.0683	0.0604	0.008**	0.0039
	14-20	0.0497	0.0547	-0.005	0.0043
	21-26	0.0401	0.0328	0.007*	0.0043
	27-39	0.0346	0.0497	-0.015**	0.0042
	40+	0.0171	0.0225	-0.005**	0.0016
Female PPS	All	0.0055	0.0106	-0.005**	0.0005
	1-6	0.0115	0.0215	-0.010**	0.0017
	7-13	0.0126	0.0182	-0.006**	0.0014
	14-20	0.0118	0.0152	-0.003**	0.0014
	21-26	0.0110	0.0118	-0.001	0.0013
	27-39	0.0085	0.0112	-0.003**	0.0010
	40+	0.0041	0.0076	-0.003**	0.0006
Female PPP	All	0.0164	0.0235	-0.007**	0.0008
	1-6	0.0294	0.0508	-0.021**	0.0026
	7-13	0.0385	0.0395	-0.001	0.0025
	14-20	0.0318	0.0334	-0.002	0.0025
	21-26	0.0271	0.0267	0.000	0.0026
	27-39	0.0189	0.0187	0.000	0.0019
	40+	0.0102	0.0137	-0.004**	0.0008

Person-fortnight analysis – Difference-in-difference estimates

Table 30: Difference-in-difference estimates

	Probability report earnings		Amount of earnings		Probability of exit	
	Estimate	SE	Estimate	SE	Estimate	SE
Male UB	-0.009	0.0130	-9.137	23.112	0.019**	0.0086
Male UB – 25-44	-0.034*	0.0198	-23.398	18.067	-0.018	0.0129
Female UB	0.030*	0.0177	-1.432	10.954	-0.005	0.0102
Female UB – 25-44	0.059**	0.0272	48.425**	18.004	0.027	0.0163
Female PPS	0.045**	0.0173	62.863**	14.980	-0.002	0.0059
Female PPP	0.008	0.0121	3.611	5.756	0.013	0.0090

Spell analysis – Before-after estimates

Table 31: Before-after impact estimates – Nearest neighbour matching – Spell-based analysis

	Treated	Control	Difference	Diff SE
Probability report income at any stage of spell				
Male UB	0.4154	0.3702	0.045**	0.0040
Male UB 25-44	0.4323	0.3885	0.044**	0.0057
Female UB	0.4911	0.4430	0.048**	0.0061
Female UB 25-44	0.5189	0.4570	0.062**	0.0099
Female PPS	0.5512	0.5201	0.031**	0.0092
Female PPP	0.2710	0.2102	0.061**	0.0081
Probability report income in any given fortnight of the spell				
Male UB	0.1632	0.1460	0.017**	0.0021
Male UB 25-44	0.1677	0.1508	0.017**	0.0030
Female UB	0.2291	0.2056	0.024**	0.0038
Female UB 25-44	0.2382	0.2119	0.026**	0.0060
Female PPS	0.3863	0.3948	-0.009	0.0081
Female PPP	0.1394	0.1279	0.012**	0.0057
Mean fortnightly earnings				
Male UB	100.63	85.26	15.372**	1.99
Male UB 25-44	106.79	98.53	8.260	16.68
Female UB	115.91	95.05	20.860**	2.86
Female UB 25-44	133.86	106.62	27.232**	4.04
Female PPS	318.72	298.01	20.710**	7.58
Female PPP	78.91	52.30	26.613**	3.22
One-year TTO				
Male UB	0.5533	0.5623	-0.009**	0.0037
Male UB 25-44	0.5377	0.5446	-0.007	0.0052
Female UB	0.5934	0.5905	0.003	0.0058
Female UB 25-44	0.5521	0.5574	-0.005	0.0092
Female PPS	0.8586	0.7929	0.066**	0.0069
Female PPP	0.7069	0.6456	0.061**	0.0086
Completed spell duration less than 14 fortnights				
Male UB	0.6499	0.6542	-0.004	0.0045
Male UB 25-44	0.6631	0.6704	-0.007	0.0063
Female UB	0.6045	0.6292	-0.025**	0.0066
Female UB 25-44	0.6477	0.6461	0.002	0.0108
Female PPS	0.2167	0.3504	-0.134**	0.0105
Female PPP	0.4453	0.5326	-0.087**	0.0112
Completed spell duration 14 to 26 fortnights				
Male UB	0.1512	0.1420	0.009**	0.0033
Male UB 25-44	0.1560	0.1443	0.012**	0.0048
Female UB	0.1363	0.1270	0.009**	0.0046
Female UB 25-44	0.1418	0.1284	0.013*	0.0077
Female PPS	0.1406	0.1159	0.025**	0.0075
Female PPP	0.1768	0.1450	0.032**	0.0081
Completed spell duration more than 26 fortnights				
Male UB	0.1989	0.2038	-0.005	0.0038
Male UB 25-44	0.1809	0.1853	-0.004	0.0052
Female UB	0.2591	0.2439	0.015**	0.0059
Female UB 25-44	0.2105	0.2255	-0.015	0.0093
Female PPS	0.6427	0.5337	0.109**	0.0113
Female PPP	0.3779	0.3224	0.056**	0.0105

Figure 13: Unemployment Rate and the Share of Unemployed Who are LTU

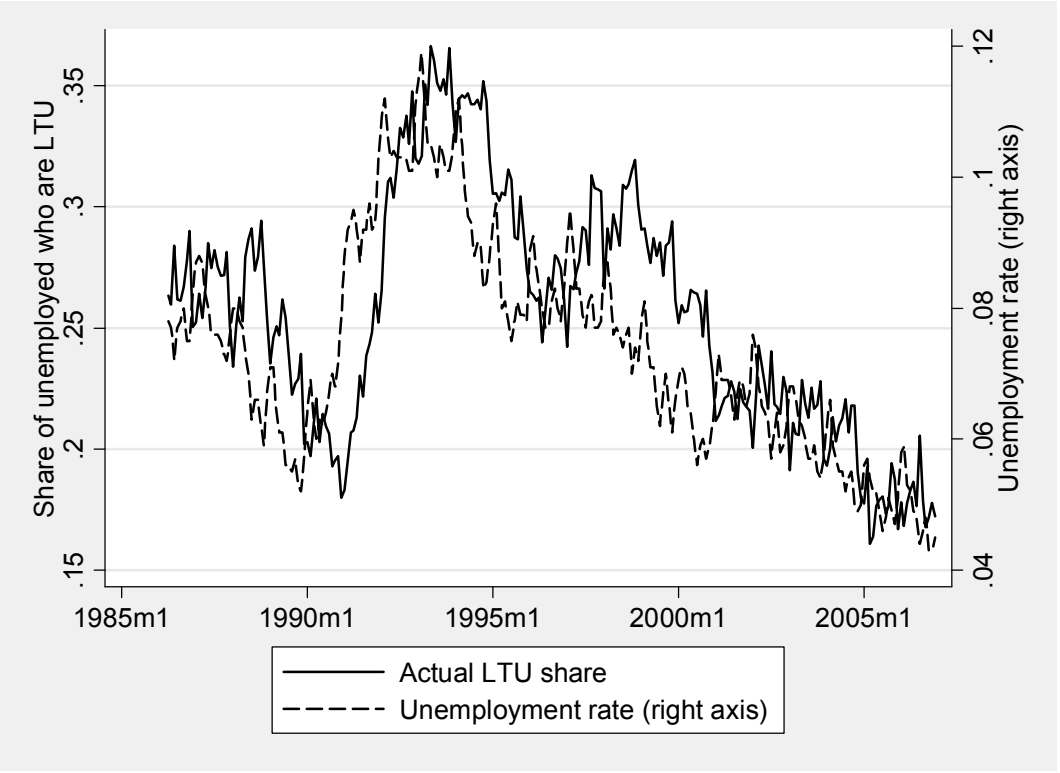
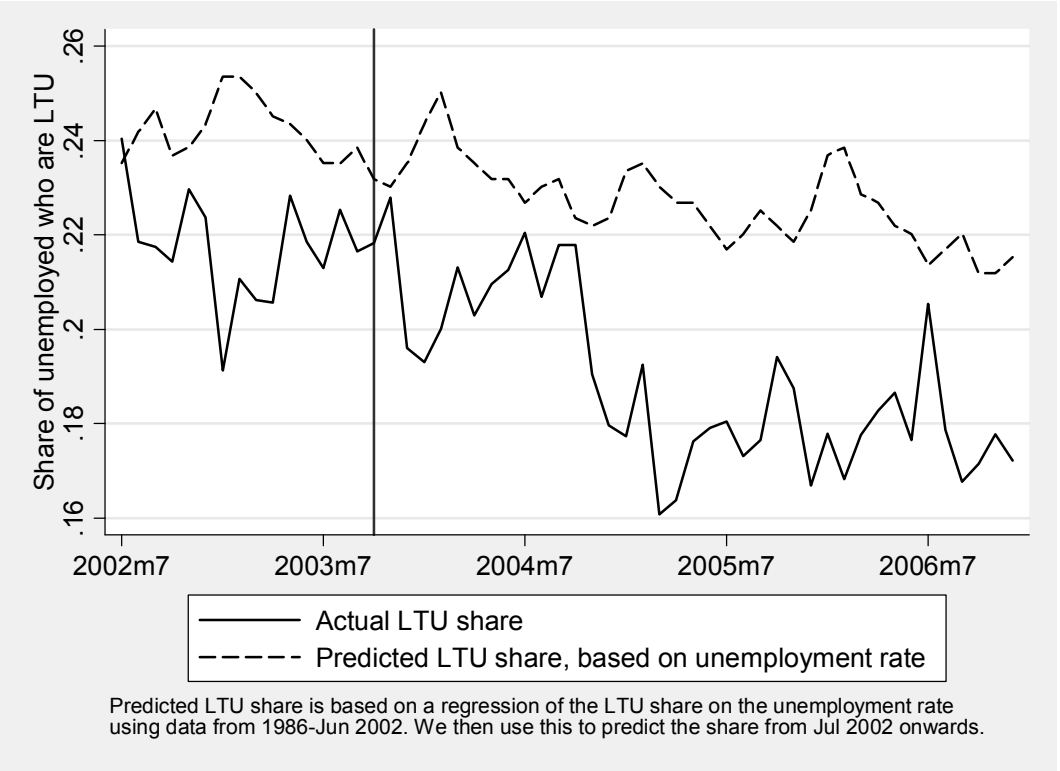


Figure 14: Predicted and Actual Share of Unemployed Who are LTU



Predicted LTU share is based on a regression of the LTU share on the unemployment rate using data from 1986-Jun 2002. We then use this to predict the share from Jul 2002 onwards.

Table 32: Estimates of cost to government of each 'job placement' produced by Working Credit

	(1) Share depleting	(2) Mean depletion amount among depleters	(3) Mean depletion amount (col1*col2)	(4) Employment impact	(5) Cost per employment impact (col3/col4)
Males					
UB	0.088	$183.17	$16.12	0.010**	$1,611.90
UB – 25-44	0.088	$183.17	$16.12	0.012**	$1,343.25
DSP	0.020	$166.73	$3.33	-0.001	Negative (ns)
OA	0.027	$167.92	$4.53	-0.008	Negative (ns)
OP	0.021	$194.71	$4.09	0.003	$1,362.97 (ns)
Females					
UB	0.076	$172.11	$13.08	0.006**	$2,180.06
UB – 25-44	0.076	$172.11	$13.08	0.012**	$1,090.03
PPS	0.032	$153.36	$4.91	0.010**	$490.75
PPP	0.073	$235.70	$17.21	0.021**	$819.34
DSP	0.021	$162.88	$3.42	0.001	$3,420.48 (ns)
OA	0.034	$159.40	$5.42	-0.029**	Negative
OP	0.024	$145.85	$3.50	0.007**	$500.06

Notes: Mean depletion amount is the share depleting (from Table 5) multiplied by the mean fortnightly depletion amount among depleters (from Table 6). In the case of UB 25-44, we assume that these figures are the same as for all UB recipients. All estimates are averages from 2003-05. Employment impacts are the differences-in-differences estimates in Table 18. *ns* – not statistically significant.

14. Appendix

Variable name	Description
Payment type categories	
UB	Unemployment benefits
UB – 25-44	On unemployment benefits and aged 25-44 years
PPS	Parenting Payment Single
PPP	Parenting Payment Partnered
DSP	Disability Support Pension
OA	Other Allowance
OP	Other Pension
Age (Exact age in years ((date – date of birth) / 365.25))	
Estimating equations contains dummies for the following categories:	
(15-24)	15-24 years of age
25-34	25-34 years of age
35-44	35-44 years of age
45-54	45-54 years of age
55-64	55-64 years of age
Place of birth & Indigenous status	
(Non-Indigenous Aus-born)	Non-Indigenous Australian-born
ESB immigrant	Immigrant born in one of the main English speaking countries
NESB immigrant	Immigrant born in a non-English speaking country
Indigenous	Aboriginal, Torres Straight Islander or South Sea Islander
Partner status	
Single	Do not have a partner
Partner not on IS	Have a partner and that partner is not in receipt of income support
Partner on IS	Have a partner and that partner is in receipt of income support
Dependent children	
Dep. children	Recorded in data as having dependent children (dummy variable)
No. of dep. children	Number of dependent children recorded in data
Dummy variables for age of youngest child:	
Youngest ≤ 5	Youngest dependent child aged 0-5 years
Youngest 6-12	Youngest dependent child aged 6-12 years
Youngest ≥13	Youngest dependent child aged 13 years or over. A dependent child over 15 years of age must be in full-time education and under 25 years of age.
Housing circumstances	
Home-owner	Home-owner outright or with mortgage
Renting privately	Renter with private landlord
(Other)	Renter in public housing or do not own home and do not pay rent or board
Location	
Major city	Indicator that the individual lives in Sydney, Melbourne, Brisbane, Perth, Adelaide, Newcastle or Canberra (all cities with more than 300,000 inhabitants)

Variable name	Description
Income support history	
TTO – 1 year	Proportion of time on income support payments in the year immediately preceding the current date.
TTO – 3 years	Proportion of time on income support payments in the three years immediately preceding the current date.
TTO – 5 years	Proportion of time on income support payments in the five years immediately preceding the current date.
Notes: (1) To enable inclusion of persons under 21 years of age, periods when a person is below the minimum age of eligibility for income support payments are treated as periods off income support payments. (For example, a person who enters income support receipt on his 15th birthday will at that point have a zero value for all three of these variables.) (2) For spell-based regression analysis and the matching analysis, these variables refer to TTO at commencement of the current income support spell.	
Earned income	
Have earned income	Indicator equal to 1 if earned income reported in that fortnight; equal to 0 otherwise
Earned income amount	Amount of earned income in the fortnight (June quarter 2005 prices)
Payment types	
Unemployment benefits (UB)	On unemployment benefits: Newstart Allowance, Youth Allowance(other), Newstart Mature Age Allowance and Mature Age Allowance
DSP	Disability Support Pension
PPS	Parenting Payment Single
PPP	Parenting Payment Partnered
Other allowances (OA)	Allowances other than unemployment benefits. Includes Partner Allowance and Widow Allowance. For analysis of males, also includes Parenting Payment Partnered.
Other pensions (OP)	Pension other than DSP. Includes Carer Payment, Widow B Pension and Other Pension Payment. For analysis of males, also includes Parenting Payment Single.
Job search requirements	On unemployment benefits and has a reported activity type that requires significant job search or involves significant contact with the labour market through either part-time work, self-employment or other forms of employment
Local unemployment rate	Unemployment rate (%) in the person's labour force statistical region. Quarterly series. See ABS (2002) for details on the regions. Specifications also include the square (divided by 10) and cube (divided by 100) of the local unemployment rate.
Spell duration	Number of consecutive fortnights up to and include the current fortnight in which the maximum payment break is 3 fortnights
Completed spell duration 1-13 fortnights 14-26 fortnights 27 or more fortnights	Dummy variables for total number of fortnights in the spell. Dummies are set equal to missing for spells right-censored before a duration of 27 fortnights.
Quarter of year	Dummies for quarter of year of current fortnight