

## **Does ‘Work for the Dole’ work: An Australian perspective on work experience programs?\***

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### **Abstract**

This study examines the effect of Work for the Dole (WfD), a community-based work experience program, on transitions out of unemployment in Australia. To evaluate the WfD program a quasi-experimental exact matching approach is applied. Participation in the WfD program is found to be associated with a large and significant adverse effect on the likelihood of exiting unemployment payments. The main potential explanation is existence of a ‘lock-in’ effect whereby program participants reduce job search activity.

Keywords: unemployment; work experience programs; quasi-experimental evaluation.

JEL codes: J60, J68, I38

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## 1. Introduction

This study examines how participation in ‘Work for the Dole’ (WfD), a community-based work experience program, has affected time spent on welfare payments by young unemployed in Australia. In the WfD program eligible unemployment payment recipients must contribute to specified projects of benefit to the community such as environmental work, construction projects, maintenance of community facilities, and work in hospitals and the aged care sector (Commonwealth Department of Employment, Workplace Relations and Small Business, 1999, pp.2, 33).<sup>1</sup> Requiring mandatory participation in a community-based work experience program for young unemployed whose payment spell duration reaches a threshold length mirrors policy responses that have been adopted in many other industrialized countries – for example, the ‘New Deal for Young Unemployed’ in the United Kingdom (Van Reenen, 2001; Blundell et al., 2004); the ‘UVG’ program in Sweden (Carling and Larsson, 2005); and ‘Active Social Policy’ in Denmark (Bolvig et al., 2003). Hence this analysis of the Work for the Dole program, as well as being the only detailed empirical study of an active labour market program that has assumed considerable importance in Australia, is also relevant to policy-making in other countries.<sup>2</sup>

As in most industrialised nations, a high rate of unemployment of younger persons was a significant problem in Australia in the late 1990s and early 2000s (and remains so today). As an example, in November 1997, at the time the WfD program was implemented, the rate of unemployment for persons aged 15 to 24 years was 15.0 per cent compared to the national average of 8.0 per cent (ABS, Labour Force Australia, catalogue no.6203.0, November 1997). Evidence that a history of unemployment makes it more likely that an individual will also be out of employment in the future suggests that high levels of youth

unemployment have particularly troubling consequences for potential labour supply and output (for example, for the Australian case see Le and Miller, 2001; and Knights et al., 2002). High rates of unemployment amongst the young have meant that a major concern for policy makers has been to develop strategies to reduce unemployment for this population group. Requiring or providing the opportunity for unemployed persons to participate in active labour market programs has been a common approach to seeking to improve their labour market outcomes.

International studies of the effect of active labour market programs for youth however generally suggest an absence of positive effects on outcomes. Reviewing evidence for the United States, Heckman et al. (1999, p.2053) state that: "...studies consistently report that these programs have no impact (or sometimes even a negative impact) on youth's earnings". For Europe, Kluve and Schmidt (2002, p.440) argue "...youth programmes have usually displayed negative effects. Recent evaluation studies indeed conclude that in Europe, like in the US, it is also true that youths are especially difficult to assist". Nevertheless, it is also the case that review articles note a high degree of heterogeneity in estimates of the impact of any type of labour market program (for example, Heckman et al., 1999, p.2053). So it is not surprising that there are also recent studies which find positive effects on youth labour market outcomes from active labour market programs – for example, the 'New Deal for the Young Unemployed' program in the United Kingdom (Blundell et al., 2004, and De Giorgi, 2005). The existence of heterogeneity in program impacts suggests that: first, it is of considerable importance to evaluate program impacts on a case-by-case basis; and second, it is likely to be through detailed comparison of these studies that it will be possible to discover

the circumstances in which programs will have positive or negative effects for young unemployed.

The objectives of the WfD program are stated as being to provide opportunities for the unemployed to gain work experience, build networks; improve their self esteem, communication skills and motivation; and contribute to projects that are of value to the community (Commonwealth Department of Family and Community Services, 2002a, section 3.2.8.80). The initial target population for the WfD scheme was recipients of Newstart Allowance (NSA) aged 18 to 24 years on full rate of income support who had been in receipt of income support for at least six months. Participation in WfD was required for a maximum of six months, and involved working for six hours per day for two days if aged 18 to 20 years, and working for six hours per day for two and a half days if aged 21 to 24 years.

The focus of this study is on the pilot phase of the WfD program that occurred between November 1997 and June 1998. There are two main reasons. First, after 1 July 1998 WfD became part of the Mutual Obligation (MO) program, after which time unemployment payment recipients had some discretion over whether to undertake WfD, so that it is not likely that WfD participants would constitute a random sample of payment recipients. Second, due to a change in payment eligibility criteria, it is likely that the eligible population for WfD differed before and after 1 July 1998.<sup>3</sup>

Our study of the WfD program adopts a quasi-experimental exact matching methodology using an administrative database on unemployment payment recipients. Outcomes for a 'treatment' group of payment recipients who participated in WfD during the 'pilot' phase

of the program are compared with outcomes for a matched control group of payment recipients who did not participate. The policy effect that is identified is the average effect of participation in WfD for payment recipients aged 18 to 24 years who commence participation during the pilot phase compared to matched payment recipients who never commence participation in WfD in that phase. To justify application of a matching approach we argue that limits on funding of WfD during its pilot phase constituted a ‘natural experiment’ by introducing geographic randomness into assignment to WfD participation. Evidence on the geographic pattern of WfD participation, and on the absence of correlation between participation in WfD and local labour market conditions, is presented to support this argument.

The empirical analysis of the effects of the WfD program that we undertake has several distinctive features. First, the large sample of payment recipients that is available from the administrative database provides sufficient control observations for us to be able to apply an exact matching method using a very detailed classification of combinations of characteristics of treatment and control observations. Second, as the database provides fortnightly records of payment receipt over an extended period, an analysis of the evolution of program effects across time can be made. Third, we are able to conduct a wide range of sensitivity tests.

Section 2 describes the data source and information on the sample of unemployment payment recipients. Section 3 discusses the predicted effects of the WfD program, and describes the empirical methodology. Results and analysis are presented in section 4. Concluding remarks are in section 5.

## 2. Data source and sample

The database for this study is the Commonwealth Department of Family and Community Services Longitudinal Administrative Data Set (LDS). The LDS is created from administrative records of social security payment receipt in Australia. It includes information on the date on which any social security payment was made; type and amount of payment; assets, income, and demographic characteristics of payment recipients (for example, date of birth, country of birth, and family characteristics) (Commonwealth Department of Family and Community Services, 2002b). Payments are made at fortnightly intervals, and hence that is the periodicity of the database. In this study a special LDS 20% random sample of unemployment payment recipients is used.

The LDS has several strengths for evaluating the impact of WfD. First, data on WfD participants (treatment group) and WfD non-participants (control group) can be drawn from the same database. Second, data on the region of residence is available in the LDS at a highly disaggregated (postcode) level. Third, the LDS allows variables to be constructed that provide a detailed representation of unemployment payment history.<sup>4</sup>

There are 888 payment spells during the pilot phase from November 1997 to June 1998 where a payment recipient is observed to participate in WfD.<sup>5</sup> Excluding Indigenous population reduces the sample of WfD participants to 860. The size of the potential control group of payment recipients aged 18 to 24 years who do not participate in WfD during the sample period is very large – about 55,000. Characteristics of WfD participants and non-participants seem in general very similar so, at least from the perspective of observable characteristics, the study should have external validity.<sup>6</sup>

To measure payment spell duration, it is necessary to have a procedure for defining the starting date for a payment spell. A new spell on NSA is defined to begin if a payment recipient has been off any social security payment for at least four consecutive fortnights where that payment spell duration is less than or equal to 23 fortnights; or off all payments for at least seven consecutive fortnights where that payment spell duration is more than 23 fortnights. Exit from a spell is defined to occur where a payment recipient is off unemployment-related payments (NSA) for at least three consecutive fortnights. A payment recipient is defined to be 'on payments' in any fortnight in which they lodge a claim form (SU19) regardless of payment entitlement.

### **3. Methodology**

This section describes the empirical methodology. Section 3.1 discusses how WfD might be expected to affect exit from unemployment. A general characterization of the empirical methodology is presented in 3.2. Validity of the methodology is discussed in 3.3. Details of how the methodology is implemented are described in 3.4.

#### **3.1 Effects of WfD - Theory**

Participation in WfD may potentially have two types of effects on exit from payments and time on payments. First, the effect of being 'referred' to WfD may cause some individuals to exit payments at the time at which participation in WfD would be required to begin.

This is generally known as a 'threat effect'. Second, there may be an effect on exit from payments due to participation in WfD. In this study the focus is on estimating the effect of participation in WfD.<sup>7</sup> The standard approach to predicting the effect of participation in a

program such as WfD on exit from unemployment would be to use a search theoretic labour market model (Pissarides, 2000). An objective of WfD is to ‘improve work habits’ of the unemployed. In the search theoretic framework this can be represented as an increase in a job-seeker’s skills or job-readiness. Hence the predicted effect of WfD would be to increase the rate at which new job offers are received, and therefore the rate of outflow from unemployment.

### **3.2 Empirical method - Introduction**

Our basic approach is to define: (a) Treatment group – NSA recipients who commence WfD participation during the sample period; and (b) Potential control group - NSA recipients who never commence WfD during the sample period.<sup>8</sup> Control group payment recipients would need to comply with the regular activity test that involves a requirement to undertake job search and to nominate two job search contacts made each fortnight.

Using this approach estimates of the effect of WfD participation are the average effect of participation in WfD for payment recipients aged 18 to 24 years who commence participation during the ‘pilot’ phase compared to matched payment recipients who do not commence participation in WfD in that phase. Therefore, the estimated effect of WfD participation is the average effect of ‘treatment on the treated’.

### **3.3 Motivation**

For the quasi-experimental matching method to be a valid estimator of the WfD treatment effect, it is sufficient that (Rubin, 1979):

(a) Conditional Independence Assumption (CIA) - Conditional on a set of observable variables ( $X$ ) the expected outcome in the absence of treatment is independent of assignment to treatment; and

(b) Common support assumption - For each possible combination of observable variables there is a non-zero probability of non-participation.

Almost certainly the most important issue in undertaking a matching analysis is to justify why – for the particular study being undertaken – the CIA is likely to hold. In this study we take two approaches to making that justification. First, it is argued that a feature of implementation of the pilot phase of WfD is likely to have introduced randomness into the assignment of eligible unemployment payment recipients to WfD participation between geographic regions. Second, that matching between WfD participants and non-participants can be undertaken using a rich set of covariates, is used to justify randomness in assignment to WfD between individuals within any geographic region.

In the pilot phase of WfD the Commonwealth Department of Employment, Workplace Relations and Small Business assigned funding to a set of projects which not-for-profit and business organizations had tendered to undertake. During this phase of WfD, limits to total funding for the scheme meant that only a small subset of applications for projects were funded (see for example, Ewin Hannan, 'Plan to expand work for the dole', The Age, January 14, 1998, p.1). In the absence of the funding limitations it would be expected that assignment to WfD should have been uniform across geographic regions (that is, involved the same proportion of unemployment payment recipients in each region). There appears however to be quite a high degree of geographic concentration of participation in WfD between ABS Labour Force regions. For example, about 10% of the population of

individuals aged 18 to 24 years with unemployment payment spells that commenced during the pilot phase are in regions where there is zero participation in WfD; by contrast, 53.2% of participants in WfD were in regions where only 21.2% of those with payment spells reside.<sup>9</sup> Application of the ‘dartboard’ test statistic (Ellison and Glaeser, 1997) provides further evidence that WfD participation was not uniformly distributed. The Ellison-Glaeser test statistic measures the deviation of actual geographic concentration from predicted concentration under an assumption of random distribution. For two alternative geographic classifications – into 35 or 67 regions – the difference between the actual and the predicted random degree of concentration appears highly significant.<sup>10</sup>

Importantly, it can also be demonstrated that the pattern of assignment to WfD participation is not related to local labour market conditions. A range of measures of local labour market conditions – rate of unemployment, rate of inflow to unemployment, rate of outflow from unemployment, and first-differences of these measures - were regressed on the rate of participation in WfD in October 1997 to June 1998 by ABS LFR.<sup>11</sup> This was done using labour market measures from the matching time periods in 1997-98, 1996-97 and 1995-96. For none of the measures of local labour market measures is there evidence of a consistent significant relation with WfD participation.

This analysis demonstrates that funding limits in the pilot phase of WfD appear to have affected the assignment of projects and participation between geographic regions, in a way that is not correlated with local labour market conditions. Note, however, that this does not guarantee randomness in assignment between treatment and control groups within geographic regions. This depends on which payment recipients were assigned to participate in WfD within geographic regions where WfD projects were allocated. To

justify randomness in assignment between participants within regions, we rely on being able to match treatment and control group observations using a relatively rich set of covariates. Most significantly, it is possible to match on the basis of local labour market conditions, and unemployment payment history of each payment recipient. These two factors have been identified as of particular importance in evaluations of matching estimators (for example, Card and Sullivan, 1988, Heckman et al., 1999, and Kluve et al., 2001). Recent studies for Australia have also established the importance of labour force history in explaining labour market status. Le and Miller (2001) and Knights et al. (2002) have shown that once labour market history is controlled for, other standard covariates have very little explanatory power for whether a labour force participant is unemployed or employed.

### **3.4 Implementation**

The type of quasi-experimental matching method used in this study is exact matching. Participants in WfD are matched with control group observations with the same: Payment spell duration (for example, a payment recipient who begins WfD participation in the  $j$ th fortnight is matched with payment recipients who have on-going spells in the  $j$ th fortnight, whose activity type in that fortnight is job search, and who never participate in WfD) (65 categories); Quarter participation in WfD commences (3); Age (18-20 or 21-24 years) (2); Gender (2); Country of birth (Australian-born or Immigrant) (2); Marital status (Single or With partner) (2); Activity type in previous fortnight (6); Rate of unemployment in ABS LFR (4); and Unemployment payment history over the previous 12 months (No history; Total time on payments more than 50%; Total time on payments less than 50%) (3).

With this approach each treatment observation can potentially be classified in one of 224,640 cells. For each cell in which there is a treatment group observation and at least one control group observation, the difference in the average outcome is calculated for control and treatment observations. The overall average effect of WfD participation is then taken as a weighted average of these cell differences using the proportion of treatment group observations in each cell as weights. Payment recipients are only used as a matching control group observation if they have zero earnings from labour market activity in the fortnight of payment spell duration at which their treatment observation commences participation in WfD. This restriction is imposed since payment recipients were exempt from WfD if they had positive earnings from labour market activity.<sup>12</sup>

This exact matching estimator can be expressed formally as (Smith, 2002):

$$\Delta = \sum_k [n_{1k} / \sum_k n_{1k}] [ \sum_{i \in k \cap \{D_i=1\}} (Y_{i1} / n_{1k}) - \sum_{j \in k \cap \{D_j=0\}} (Y_{j0} / n_{0k}) ] \quad (1)$$

where:  $n_{1k}$  and  $n_{0k}$  are respectively the number of treatment and control observations in cell  $k$ ,  $Y_{i1}$  and  $Y_{j0}$  are respectively outcomes for treatment group observation  $i$ , and control group observation  $j$ , and  $D$  is an indicator variable for participation in treatment.

Effects of WfD on a variety of outcome measures related to receipt of unemployment payments are examined. Assignment to WfD involves a maximum of six months participation in the program. Outcome measures have therefore been chosen to attempt to capture short-run effects at the end of participation in WfD, and longer-run effects some time after participation. Specifically, we examine the effect of WfD on the incidence of

exit from payments at 6 months and 12 months after commencement in the program, on receipt of payments 9 and 15 months after commencement of program participation, and on the number of fortnights on payments during 6 and 12 months after program commencement.

Testing for differences between treatment and control group outcomes using the type of standard errors commonly generated in statistical packages involves an assumption that only ‘normal’ sampling variation exists. However, the process of matching between treatment and control observations introduces an extra source of variation that needs to be taken into account. Therefore, we report bootstrapped standard errors. The bootstrap procedure involves several stages – first, a bootstrap sample (sample with replacement) is drawn from the original sample; second, the model is implemented to obtain an estimate of the WfD effect; and third, stages one and two are repeated 1,000 times. The output is a distribution of estimated WfD effects for each outcome measure. Ninety-five per cent confidence intervals from the bootstrapped estimates of WfD effects are reported. (These are generated as the 2.5 and 97.5 percentiles of the distribution of estimated WfD effects for each outcome measure.)

#### **4. Effects of WfD**

This section reports results of the empirical analysis. Preliminary information on matching quality is presented in 4.1. Basic results, and findings from sensitivity analysis using a bounds method, are in 4.2 and 4.3. Different approaches to testing for robustness are presented in section 4.4. In section 4.5 possible explanations for the main findings are discussed.

#### **4.1 Preliminary information on matching**

Using the exact matching method it is possible to match 802 of the 860 WfD participants in our sample to control group observations. The WfD participants and control observations are matched into 723 cells. The median number of WfD participants in each cell is one, and the median number of control observations in each cell is 23.<sup>13</sup> Since not all WfD participants can be matched to control group observations, therefore the estimated effects of WfD are for a subset of WfD participants. In this circumstance, where there is heterogeneity in the impact of WfD between participants, the estimated treatment effect should be interpreted to represent the average effect for WfD participants with the same characteristics as those participants who can be matched with control group observations.

#### **4.2 Basic results**

Table 1 reports findings from the exact matching analysis. The main conclusion is that there appears to be a quite large significant negative effect of participation in WfD. For example, for the group of matched WfD participants, it is found that there is a difference in exit from NSA payments between WfD participants and non-participants at 6 months after WfD commencement equal to minus 12.3 percentage points (28.6 per cent for WfD participants compared to 40.9 per cent for non-participants). And the difference in fortnights on NSA payments between WfD participants and non-participants in the first 12 months after start of spell on WfD is 2.2 fortnights (19.8 fortnights on average for WfD participants compared to 17.6 fortnights on average for non-participants). From the confidence intervals reported each of these differences is statistically significant at the 5% level.

Figures 1a and 1b show the proportions of WfD participants and the matched control group who exit NSA payments in each month after the commencement of WfD participation. Over the first 6 months after commencement there is a steadily widening gap between outcomes for WfD participants and the matched control group; however after that time there is some reversal over the next 12 months. The difference after 6 months is 12.3 percentage points, and after 18 months is 8.9 percentage points – and over the final few months the gap appears largely to have stabilized. It is notable that the ‘break-point’ in the evolution of the difference in outcomes for WfD participants and the matched control group is at 6 months, which is the duration of participation in the WfD program. It suggests that there is an adverse effect of WfD on exit from payments associated directly with the period of participation in WfD, but that there is partial catch-up by WfD participants after the conclusion of WfD.

### 4.3 Bounds analysis

In the basic model 802 out of 860 WfD participants can be matched with control observations. It has been noted earlier that – in the case of heterogeneity in WfD effects – our estimates of the aggregate WfD effect will be biased. As one way to address this potential problem we estimate upper and lower bounds for the aggregate WfD effects (Lechner, 2000):

$$UB = \beta(\Delta_{TT}) + (1-\beta)(\bar{\Delta}); \text{ and}$$

$$LB = \beta(\Delta_{TT}) + (1-\beta)(\underline{\Delta})$$

where  $\beta$  = proportion of WfD participants matched with control observations;

$\Delta_{TT}$  = estimated average treatment on treated WfD effect from basic model; and  $\bar{\Delta}$  and  $\underline{\Delta}$  are respectively the maximum and minimum possible values of the WfD effect – for example, for the outcome ‘exit from payments by 3 months after WfD commencement’ the maximum possible WfD effect is +1, and minimum possible effect is –1. This method calculates lower and upper bound WfD estimates by assuming that the estimated WfD effect applies to WfD participants who can be matched to control observations, and that the effect for the non-matched WfD participants is (respectively) as adverse and as positive as is possible.

Results from application of bounds analysis are reported in Table 2. It shows that for each outcome measure the distribution of possible outcomes is consistently towards adverse effects of WfD. Not even in the scenario where it is assumed that the effect of WfD is positive for all the missing treatment observations is any effect of WfD estimated to be positive.

#### **4.4 Robustness checks**

In this sub-section five types of robustness checks on the findings on the effects of WfD are presented. The first check is motivated by a concern that a referral effect of WfD may cause bias in estimates of the effect of participation in WfD. The second check seeks to control for potential differences between WfD participants and control group observations that have not been taken into account in the basic model. The third check is to examine the effect of an alternative definition of exit from payments. A fourth check is to examine sensitivity to changing the control group to include unemployment payment recipients who participate in WfD. This modification makes the approach identical to that in Sianesi (2004) where the control group for a group of treatment observations who commence

treatment in a specific fortnight, may include individuals who will commence treatment in a subsequent fortnight. The final check is to consider robustness to alternative approaches to implementing exact matching.

#### **4.4.e Alternative approaches to matching**

##### **4.4.a Referral effects**

From the group of unemployment payment recipients referred to WfD some may exit payments prior to commencing participation. Where the number of pre-program ‘drop-outs’ is large this has two potential implications for quasi-experimental matching analysis:

- (i) Individual payment recipients observed to be in the control group may exit payments due to the threat of participation in WfD; and
- (ii) Individual payment recipients in the treatment group – those referred to WfD who have decided to participate rather than exit payments - may differ from other payment recipients.

Of these two effects, the first would tend to cause a downward bias in the estimated program effect since part of the referral effect of treatment is being manifested in a higher rate of exit from payments for the control group; and it is probably most reasonable to characterize the second as having an ambiguous impact on the estimated program effect (on the one hand, participation in WfD may reveal higher motivation; on the other hand, participation may reveal an absence of work opportunities).

In order to investigate any referral effect on our findings, we examine the change in outflow rates from payments by ABS Labour Force regions for unemployment payment recipients aged 18 to 24 years between the periods prior to the beginning of the WfD ‘pilot’

phase and during the pilot phase. Evidence of a significant ‘referral effect’ of participation in WfD would be a larger increase (or smaller decrease) in the rate of outflow from unemployment payments in regions with higher rates of participation in WfD. However, there is found to be no significant relation between these variables (at the 10% level of significance).<sup>14</sup>

Another possibility is that estimates of the effect of WfD may be biased by exit from payments due to cancellation of payments for WfD related breaches. Payment recipients whose payments are cancelled due to a WfD breach could potentially appear as control group observations who exit payments. This would increase the rate of exit from payments of the control group; but since the explanation for their exit is failure to participate in WfD, this should be considered as a source of downward bias in the estimated effect of WfD. To investigate this possible source of bias we excluded control group observations with WfD-related breaches. The results are reported in Table 2, and it is apparent that the estimated effects are almost identical to the basic model.

#### **4.4.b Extra matching variables**

For the matching estimator to provide valid estimates of the effect of the WfD program, it must be that any treatment and control group observations matched on the basis of the observable characteristics used in the exact matching, are otherwise identical. To investigate the robustness of the basic model another matching variable, education attainment, that is likely to be an important predictor of labour market outcomes and possibly WfD participation, is introduced. Education attainment is included in four categories – Not completed high school; completed high school; trade qualification/diploma; and degree and above. (It is not included as a matching variable in

the basic model as missing data for some treatment and control observations would cause a significant reduction in sample size.) Findings from this exercise are reported in Table 2.

The estimated adverse effects of WfD are found to be very similar to the basic model. This result adds to the degree of confidence that can be attached to our belief that the matching covariates in the basic model control satisfactorily for differences in labour market outcomes and the likelihood of WfD participation between WfD participants and the control group.

#### **4.4.c Alternative exit definition**

In this exercise, exit from payments is defined to occur only where a NSA recipient exits from all income support payments. This represents a stricter definition of exit – since exit will not now be defined to occur where a NSA recipient exits from the unemployment-related allowance but commences a spell on some other income support payment (such as Disability Support Pension (DSP)). Results in Table 2 show that using this alternative definition does reduce somewhat the estimated adverse effect of WfD participation. However, there is still an adverse effect on receipt of payments that is statistically significant. The findings suggest that WfD participants who exit NSA are slightly less likely to exit to other payment types than the matched control group.

#### **4.4.d Control group includes WfD participants**

The effect of including in the potential control group individuals who subsequently participate in WfD is shown in Table 2 to cause a small increase the number of matched treatment observations, and to decrease the negative estimated effect of WfD. All estimates however still show statistically significant negative effects of participation in WfD.

The effect of adding WfD participants to the control group is consistent with those new extra control observations – WfD participants who commence in the program at a later fortnight than the treatment observations to which they are being matched - having a lower incidence of exit from payments than the original control group who never participate in WfD. This is confirmed in Figure 2 which presents effects of participation in WfD on the incidence of exit from NSA, disaggregated by fortnight of commencement in WfD.

Participation in WfD is shown to have similar negative effects in the first 6 months after commencing in the program both for those who commence before and who commence after their spell length reaches 12 months. However, beyond the first 6 months, this effect reverses for those who commence WfD prior to their spell length reaching 12 months; whereas there is no reversal for those who commence WfD later than 12 months into their payment spell.

#### **4.4.e Alternative approaches to matching**

As a final check on robustness we investigated the effects of making a variety of changes to the matching approach – specifically, matching using 6 age year levels rather than 2 age groups; matching using 67 geographic regions rather than the 4 sets of regions classified by the rate of unemployment; and only matching WfD participants to non-participants in regions with no or less than 5 WfD participants. The findings using these alternative approaches are very similar to those presented in Table 1. However, in each case the percent of matched WfD participants is reduced. Hence we did not incorporate any of these alternative matching approaches into our basic approach.<sup>15</sup>

#### **4.5 How to explain the findings?**

The main potential explanation for the negative effect of WfD participation on job search activity is that participation may cause or allow participants to reduce their job search activity, or may adversely affect the type of job search activity undertaken. There is a growing international literature which suggests that a 'lock-in' or 'attachment' factor may be an important source of adverse program effects. For example, a recent evaluation of the Community Work Program in New Zealand found that many participants viewed their work experience placements as 'work' and therefore did not engage in job search activity (de Boer, 2000, p.6). Evidence of 'lock-in' effects has also been found for a job search counselling program in the Netherlands, wage subsidy schemes and public job creation in the Slovak Republic and Germany, for training programs in Denmark, and a 'mutual obligation' type program in Sweden (see Van den Berg and van der Klaauw, 2001, van Ours, 2002, Hujer et al., 2003, Bolvig et al., 2003; and Carling and Larsson, 2005).

Evidence from this study does appear consistent with the existence of a 'lock-in' effect of WfD participation due to a 'chilling' effect on job search activity. That the WfD effect on exit from unemployment payments becomes progressively more negative throughout the duration of the WfD program, but that after the six-month duration point there is a partial reversal of the negative effect of WfD, suggests that WfD participants may reduce job search activity relative to non-participants during the period of WfD participation.

## **5. Conclusion**

This study has examined the effect of the introduction of the Work for the Dole (WfD) program on exit from and time spent on unemployment payments by young unemployed in

Australia. The focus of the analysis is on a pilot phase of the WfD scheme between November 1997 and June 1998.

The main conclusion from the study is that there appear to be quite large significant adverse effects of participation in WfD. For example, for the group of matched WfD participants it is found that the difference in fortnights on NSA payments between WfD participants and non-participants in the first 6 months after start of spell on WfD is one fortnight. Of potential explanations for the negative effect of participation in WfD, the potential 'chilling' effect of WfD on job search activity, seems to be most supported by international evidence, and to be consistent with the time-series pattern of WfD effects (that is, increasingly adverse effect during the six-month phase of participation in WfD, but then reversing to some extent after that time).

The study provides several important general lessons on the effect of youth labour market programs. Most significantly, it adds further weight to the predominant body of evidence from the United States and Europe that finds little beneficial effect from participation on exit from unemployment or labour market outcomes, and supports other studies that have found a major problem with participation in labour market programs to be the reduction in job search effort that results.

## Endnotes

\* We have benefited from comments made by two referees. We are grateful for assistance from the LDS group at the Commonwealth Department of Family and Community Services (FaCS), particularly Shaun Burnham and Gerry Carey, and to Tony Hedditch from Centrelink for providing data on the 'pilot' phase WfD projects. We are also grateful for the opportunity to present this research at a seminar at FaCs and at the DEWR Evaluation Workshop, for data provided to us by the Commonwealth Department of Employment and Workplace Relations, and for helpful discussions with Robert Lipp and Linda Richardson. The contents of the paper solely reflect the work and opinions of the authors, and cannot be in any manner attributed to the Commonwealth Departments of Family and Community Services or Employment and Workplace Relations.

1. The obligation to participate in WfD derives from Australian social security legislation on eligibility conditions for receipt of unemployment benefit payments. The Social Security Act 1991 requires that (unless exempted) unemployment payment recipients must meet an 'activity test' – to be actively looking for work, or undertaking activities to improve their employment prospects, and be willing to accept offers of suitable employment (Section 601). Subject to meeting the activity test requirement, there is no time limit on the duration for which unemployment payments can be claimed.

2. Two other studies of the effects of participation in WfD on exit from unemployment payments have been previously undertaken. Commonwealth Department of Employment, Workplace Relations and Small Business (DEWRSB) (2000) used a matching method to compare outcomes for WfD participants who exited from WfD in August 1999 with a control group of unemployment payment recipients who had not participated in WfD in the previous six months. Richardson (2003) examines the effects of WfD participation as part of a more general evaluation of the Mutual Obligation (MO) program for a sample of payment recipients aged 23-24 years who participated in WfD in July to December 1998. Significant criticisms of the methodology applied in the DEWRSB study have been raised (Productivity Commission, 2002, Appendix E, and OECD, 2001, p.220). One major problem is that a group of program participants, some of whom have already left unemployment payments, are being matched with a control group of non-participants, all of whom are on unemployment payments in August 1999. Hence there is a bias towards finding a positive effect of WfD participation. The Richardson study examines the effects of WfD participation as one part of the broader MO program. With this approach, for the matching methodology to provide valid estimates of the effect of WfD participation requires that, after controlling for observable characteristics, WfD participants should be identical to payment recipients who do not participate in MO (Gerfin and Lechner, 2002). This random assignment requirement seems problematic in the time period in which WfD is a component of the MO program because the type of activity to which a payment recipient is assigned is likely to be related to characteristics that cannot be controlled for such as motivation or ability.

3. The sample of unemployment payment recipients for this study is Newstart Allowance recipients aged 18 to 24 years. On 1 July 1998 Youth Allowance (other) (YA(o)) replaced NSA for payment recipients aged 18 to 20 years. The YA(o) differed from the NSA in that eligibility and payment amount depend on a parental means test; hence it is likely that the eligible population for WfD is different before and after 1 July 1998.

4. Heckman et al. (1998) suggest that the quality of any quasi-experimental evaluation study using a matching method is likely to be significantly affected by three key features – whether data for treatment and control groups is collected using the same survey instrument; whether it is possible to control at a detailed level for local labour market conditions; and whether it is possible to match treatment and control observations using labour market history.

5. WfD participation is identified from the ‘WfD – Compulsory’ and ‘WfD – Voluntary’ activity type variables in the LDS. A payment recipient is classified as being a participant in the pilot phase of WfD if their activity type in some fortnight during the period between 1 October 1997 and 30 June 1998 is one of the WfD categories. Advice from FaCS and DEWR is that both categories should be treated as identifying compulsory participants.

6. See Appendix Table 1. These results are available on request from the authors.

7. Of course, if WfD does cause the former ‘referral’ effect, this may cause a selection effect on the composition of WfD participants and non-participants that would bias estimates of the ‘participation’ effect. Hence, we do test for referral effects as part of the robustness analysis of estimated effects of participation in WfD later in the paper.

8. Later we investigate the robustness of our findings to including payment recipients who subsequently participate in WfD in the control group. Having only payment recipients who never participate in WfD may mean that short payment spells are over-sampled in the control group (that is, payment recipients who exit payments prior to participating in WfD). On the other hand, including in the control group payment recipients who subsequently participate in WfD may bias estimates of the treatment effect where WfD participation affects time on payments of those control group observations.

9. See Appendix Table 2. These results are available on request from the authors.

10. Formally, for each case the difference between actual and predicted random concentration is at least four times greater than the standard deviation of the mean of concentration under the null hypothesis of randomness. Actual geographic dispersion is measured as  $G = \sum_i (s_i - x_i)^2$  where  $s_i$  and  $x_i$  are respectively the share of WfD participants in ABS Labour Force Region (LFR)  $i$  and the share of payment recipients in LFR  $i$ . The benchmark geographic dispersion for random assignment is  $E(G) = (1 - \sum_i (x_i)^2)H$  where  $H = \sum_j (z_j)^2$ , and  $z_j$  = the proportion of WfD participants in the  $j$ th project. Data on the number of participants in the ‘pilot’ phase WfD projects was obtained from Centrelink. For the variance formula see Ellison and Glaeser (1997, p.907). Findings from the test are presented in Appendix Table 3. These results are available on request from the authors.

11. See Appendix Table 4. These results are available on request from the authors.

12. Information provided by Robert Lipp of DEWR.

13. Further information on the distribution of treatment and control observations by cell is in Appendix Table 5. These results are available on request from the authors.

14. Individual-level data on referrals to WfD are not available for the pilot phase of WfD. This is why it is necessary to adopt an aggregate-level approach to testing for referral effects.

Findings from this regression analysis are presented in Appendix Table 6. These results are available on request from the authors.

15. These results are reported in Appendix Table 7. These results are available on request from the authors.

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**Table 1: Effect of WfD on exit from unemployment payments and time on payments – Exact matching method - NSA recipients aged 18 to 24 years, November 1997 to June 1998**

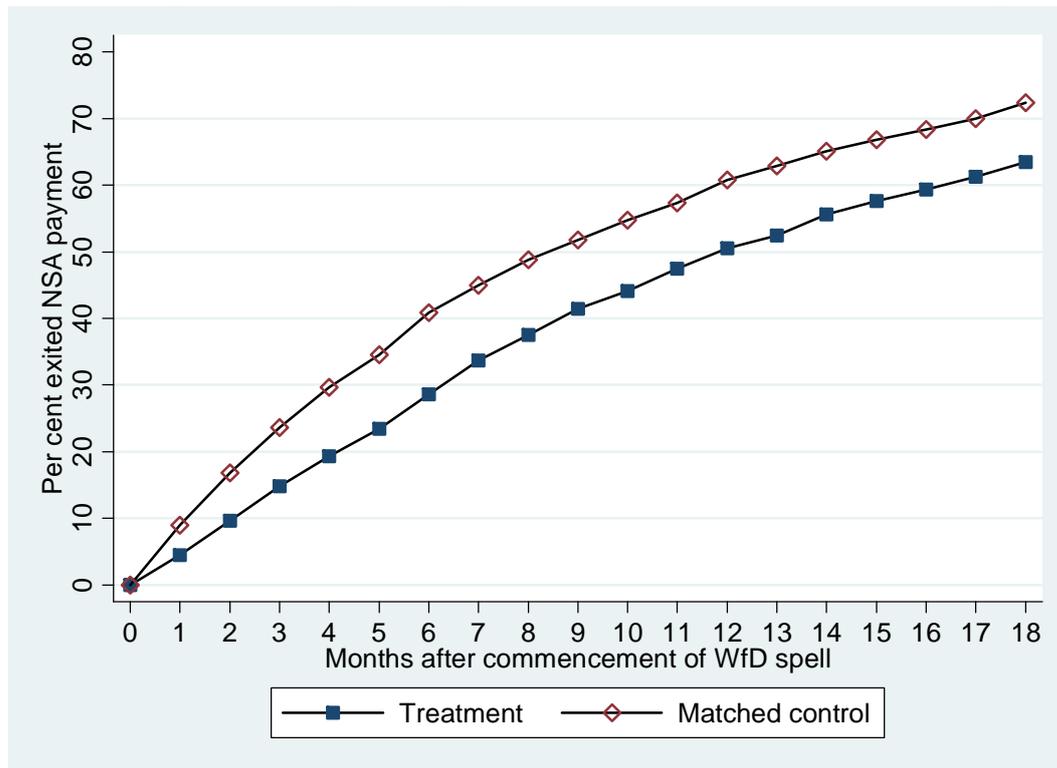
	<b>Treatment</b>	<b>Control</b>	<b>Difference</b>	<b>95% confidence interval</b>
<b>% Off payments</b>				
By 6 months	28.6	40.9	12.3	(-15.9 ~ -8.9)
By 12 months	50.5	60.8	10.3	(-14.7 ~ -6.8)
<b>% On payments</b>				
At 9 months	67.3	58.9	8.4	(4.8 ~ 12.5)
At 15 months	58.1	49.6	8.5	(5.1 ~ 12.7)
<b>Time on payments</b>				
First 6 months	11.1	10.2	1.0	(0.73 ~ 1.24)
First 12 months	19.8	17.6	2.2	(1.65 ~ 2.84)
<b>Number of observations</b>				
Observations matched	802			
Total no. of observations	860			

**Table 2: Effect of WfD on exit from unemployment payments and time on payments – Exact matching method – Robustness analysis - NSA recipients aged 18 to 24 years, November 1997 to June 1998**

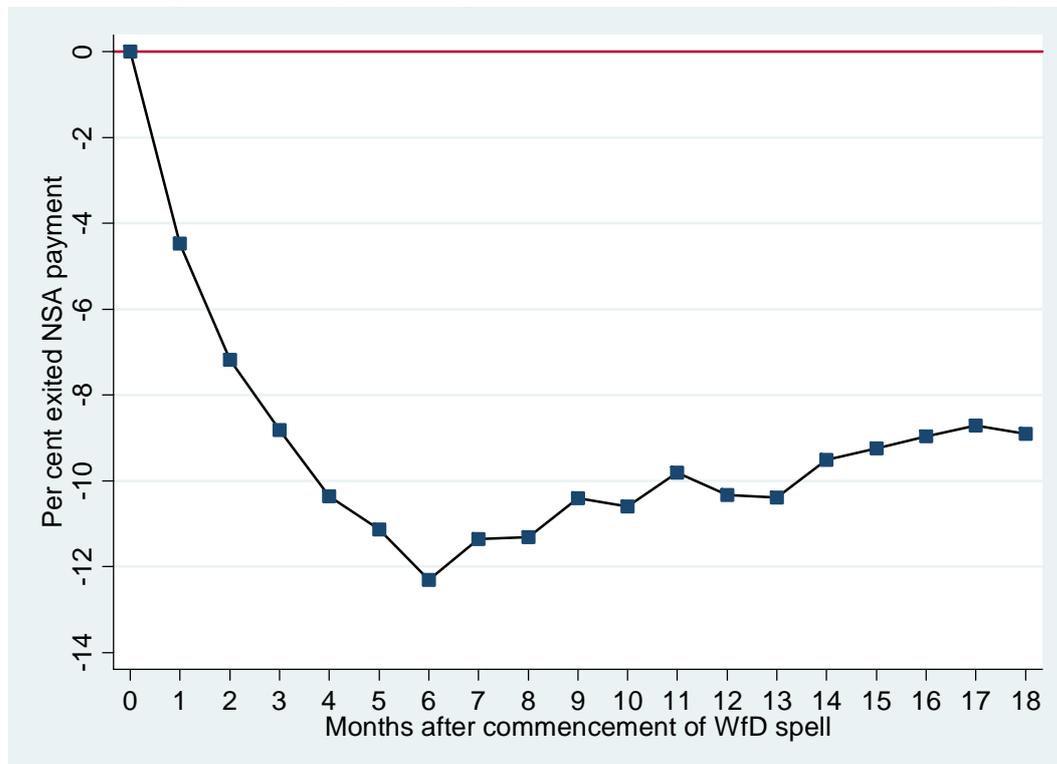
	Off payment		On payments		Time on payments (fortnights)		no. of obs.	
	6 months	12 months	9 months	15 months	6 months	12 months	total	matched
<b>Basic model</b>	-12.3 (-15.9 ~ -8.9)	-10.3 (-14.7 ~ -6.8)	8.4 (4.8 ~ 12.5)	8.5 (5.1 ~ 12.6)	0.98 (0.73 ~ 1.24)	2.19 (1.65 ~ 2.84)	860	802
<b>Bounds analysis</b>								
Lower bound	-18.2	-16.4	14.6	14.7	0.85	1.97		
Upper bound	-4.7	-2.9	1.1	1.2	0.98	2.11		
<b>Basic model – Excluding individuals with WfD breaches</b>	-12.0 (-15.8 ~ -8.4)	-9.8 (-14.7 ~ -6.3)	8.3 (4.4 ~ 12.4)	8.1 (4.6 ~ 12.4)	0.97 (0.72 ~ 1.25)	2.17 (1.57 ~ 2.84)	801	748
<b>Basic model - Plus education attainment</b>	-11.6 (-16.7 ~ -7.8)	-10.0 (-16.2 ~ -6.1)	7.5 (3.9 ~ 12.8)	6.8 (2.6 ~ 12.9)	0.98 (0.67 ~ 1.31)	2.13 (1.47 ~ 2.97)	860	679
<b>Basic model – Exit all payment</b>	-10.6 (-14.3 ~ -7.2)	-9.2 (-13.6 ~ -5.7)	6.6 (3.2 ~ 10.7)	7.1 (3.6 ~ 11.1)	0.86 (0.62 ~ 1.12)	1.86 (1.33 ~ 2.51)	860	802
<b>Basic model – Control group includes WfD participants</b>	-8.5 (-11.9 ~ -5.1)	-5.0 (-9.1 ~ -1.6)	4.7 (1.0 ~ 8.4)	4.4 (0.9 ~ 8.3)	0.73 (0.48 ~ 0.98)	1.45 (0.88 ~ 2.04)	860	804

Note: 95% confidence intervals are in parentheses.

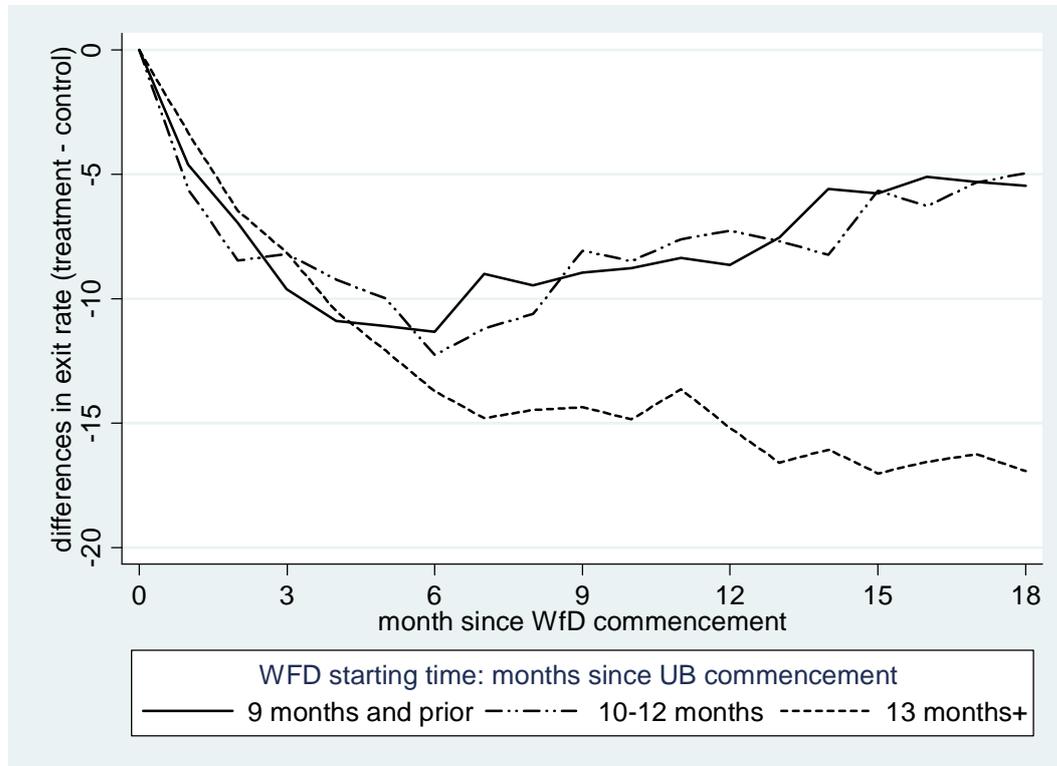
**Figure 1a: Proportion of NSA recipients exited NSA payments –  
Aged 18 to 24 years -By month after commencement of WfD spell**



**Figure 1b: Proportion of NSA payment recipients exiting NSA payments –  
Difference between WfD participants and matched control group –  
Aged 18 to 24 years - By month after commencement of WfD spell**



**Figure 2: Proportion of NSA payment recipients exiting NSA payments – Difference between WfD participants and matched control group – Aged 18 to 24 years - By month after commencement of WfD spell - By time in payment spell commenced WfD**



**Appendix Table 1: Characteristics of WfD participants and all payment recipients - NSA recipients aged 18 to 24 years with at least one fortnight on payments, November 1997 to June 1998**

	<b>Treatment</b>	<b>Matched Treatment</b>	<b>Control (Characteristic at 1 Oct)</b>
<b>No. of Observations</b>	860	802	54,744
<b>Gender</b>			
Female	35.0	35.0	57.8
Male	65.0	65.0	42.3
<b>Age</b>			
18-20	45.7	46.8	45.7
21-24	54.3	53.2	54.3
<b>Marital Status</b>			
Single	90.0	93.0	92.1
Married	10.0	7.0	7.9
<b>Children</b>			
Have no child	95.7	96.5	97.7
Have child	4.3	3.5	2.3
<b>Country of Birth</b>			
Australia non ATSI	90.0	91.5	85.1
Immigrant	10.0	8.5	14.9
<b>Payment History</b>			
No payment history	56.5	57.9	61.9
TTO <=50%	23.5	22.7	23.2
TTO >50%	20.0	19.5	14.9
<b>State of Residence</b>			
ACT	0.2	0.3	1.8
NSW	37.6	37.4	29.3
VIC	23.5	23.8	25.4
QLD	20.9	20.3	21.9
SA	5.9	6.1	8.3
WA	7.3	7.6	9.5
TAS	4.2	4.1	3.0
NT	0.4	0.4	0.9

**Appendix Table 2: Participation in WfD by ABS Labour Force region - NSA recipients aged 18 to 24 years with at least one fortnight on payments, November 1997 to June 1998**

Labour Force Region	Participate in WfD	All Payment Spells	Percent participating in WfD	Labour Force Region	Participate in WfD	All Payment Spells	Percent participating in WfD
2	0	1253	0.00	41	2	972	0.20
4	0	624	0.00	42	63	869	7.24
5	22	917	2.39	44	15	1805	0.83
6	14	916	1.52	45	16	1939	0.82
7	45	1436	3.13	46	7	1399	0.50
8	11	892	1.23	47	34	1585	2.14
9	3	813	0.36	48	0	70	0.00
10	4	879	0.45	49	9	1350	0.66
11	0	356	0.00	50	41	928	4.41
12	1	224	0.44	51	21	1414	1.48
13	0	340	0.00	52	8	779	1.02
14	24	1046	2.29	53	13	1039	1.25
15	0	178	0.00	54	7	1110	0.63
17	33	1049	3.14	55	11	2051	2.77
18	2	496	0.40	56	7	252	0.36
19	31	2025	1.53	58	13	1540	2.88
20	13	624	2.08	59	1	953	0.10
21	31	421	7.36	60	4	899	0.44
22	0	1173	0.00	61	6	1228	0.48
23	61	2237	2.72	62	23	768	2.99
24	25	1784	1.40	63	5	523	0.95
25	14	959	1.45	66	2	452	0.27
28	2	1237	0.16	67	2	730	1.04
29	9	2526	0.35	68	9	1623	0.55
30	0	1209	0.00	69	18	1033	1.74
31	0	1566	0.00	70	19	1165	1.63
32	6	1347	0.44	71	4	796	0.50
33	17	917	1.85	72	14	907	1.54
34	11	1195	0.92	75	24	1060	2.26
35	18	1461	1.23	76	5	590	0.84
37	4	1317	0.30	77	8	474	1.68
38	31	830	3.73	79	3	932	0.32
39	22	834	2.63	80	2	1185	0.16
40	18	985	1.82				

Note: Sample includes all WfD participants, including Indigenous population (Aboriginal and Torres Strait Islander).

**Appendix Table 3: Dartboard test for geographic randomness in distribution of WfD participants, November 1997 to June 1998**

	<b>Index</b>	<b>E(G)</b>	<b>Index-E(G)</b>	<b>SD(G)</b>
	(Actual)	(Random)	(Diff.)	
35 regions	0.01377	0.00701	0.00676	0.00177
67 regions	0.01483	0.00710	0.00773	0.00123

**Appendix Table 4: Regression results – Relation between rate of unemployment and WfD participation by ABS Labour Force Region (OLS)**

Dependent variable: Proportion of payment recipients participating in WfD, October 1997 to June 98

<b>Labour market measure</b>	<b>Coefficient</b>
Rue(t)	0.0022 (0.0012)
Rue(t-1)	0.0019 (0.0012)
Rue(t) - Rue(t-1)	-0.0009 (0.0031)
Rue(t-1) - Rue(t-2)	0.0033 (0.0026)
Inflow(t) - Outflow (t)	0.0001 (0.0002)
Inflow(t-1) – Outflow(t-1)	0.0000 (0.0002)
Inflow(t-2) – Outflow(t-2)	0.0000 (0.0002)
Rinflow(t) – Rinflow(t-1)	0.0084 (0.4930)
Rinflow(t-1) – Rinflow(t-2)	0.5799 (0.3437)
Routflow(t) – Routflow(t-1)	0.6805 (0.5847)
Routflow(t-1) – Routflow(t-2)	0.8776 (0.5044)

Notes: a) Rue(t) = Rate of unemployment in year t; Inflow(t) = Inflows to unemployment payments in year t; Outflow(t) = Exit from unemployment payments in year t; Rinflow(t) = Inflow to unemployment payments/Stock of unemployment payment recipients; and Routflow(t) = Exit from unemployment payments/Stock of unemployment payment recipients. (Rate of inflow measure is calculated by: 1. Calculating number of inflows to unemployment payments in a month; 2. Calculating stock of unemployment payment recipients at end of preceding month; 3. Take ratio of 1 and 2; and 4. Repeat steps 1 to 3 across all months in the period from November to June, and calculate annual average. Rate of outflow is calculated in similar way.); b) Year t = 1997-98; Year(t-1) = 1996-97; and Year(t-2) = 1995-96; c) Number of observations = 67; and d) Robust standard errors are in parentheses.

**Appendix Table 5: Number of treatment and control observations by cell**

<b>Percentile</b>	<b>Treatment observations</b>	<b>Control observations</b>
1	1	1
5	1	1
10	1	2
25	1	5
50	1	21
75	1	49
90	1	76
95	1	93
99	2	244

**Appendix Table 6: Regression results – Relation between first-difference in rate of exit from unemployment payments and WfD participation – By ABS Labour Force Region (OLS – Robust standard errors)**

Dependent variable: Difference in rate of exit from NSA payments 1997/98 minus 1996/97

<b>Proportion of payment recipients in WfD</b>		<b>Constant</b>		<b>Observations</b>
<b>Coefficient</b>	<b>p-value</b>	<b>Coefficient</b>	<b>p-value</b>	
0.2841	0.419	-0.3185	0.000	67

**Appendix Table 7: Effect of WfD on exit from unemployment payments and time on payments – Exact matching method – Robustness analysis - NSA recipients aged 18 to 24 years, November 1997 to June 1998**

	<b>Base case</b>	<b>Base case + Include Indigenous population</b>	<b>Base case + 6 age year groups</b>	<b>Base case + 67 statistical regions (instead of ue by region)</b>	<b>Base case + Match to regions with no WfD participants</b>	<b>Base case + Match to regions with less than 5 WfD participants</b>
Total observations	860	888	860	860	860	860
Number of matched observations	802	817	739	540	345	553
Percent of matched observations	93.3%	92.0%	85.9%	62.8%	40.1%	64.3%
<b>% Off payments</b>						
By 6 months	-12.3	-11.8	-12.7	-11.1	-18.4	-15.4
By 12 months	-10.3	-10.4	-11.2	-12.7	-14.7	-11.6
<b>% On payments</b>						
At 9 months	8.4	8.3	9.7	7.7	11.2	8.7
At 15 months	8.5	8.9	8.7	8.5	8.9	9.5
<b>Time on payments</b>						
First 6 months	0.98	0.96	0.96	0.87	1.32	1.06
First 12 months	2.19	2.15	2.15	2.06	2.84	2.37
First 18 months	3.29	3.29	3.29	3.30	3.96	3.51