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Do residual benefits induce Disability Support Pension leavers to return to income support?

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# Executive summary

This study looks at whether the residual benefits retained by former Disability Support Pension (DSP) recipients induce them to return to income support before the benefits expire.

DSP recipients who leave the payment to work retain access to pensioner concession cards, including bulk-billing for doctors’ appointments and concessionary treatment for other health services, along with pharmaceutical benefits and access to valuable state government concessions for 12 months after leaving the DSP. They also enjoy an administratively ‘smoother’ return to the payment, if required, since their payment is only suspended rather than cancelled, for up to 24 months after leaving the DSP.

This paper looks at whether former DSP recipients tend to return to the DSP just prior to the expiry of these benefits. It uses government administrative data on income support receipt, the Longitudinal Data Set (LDS), to assess whether there are any spikes in the rate of return to income support among DSP leavers just before the one and two-year anniversaries of their leaving the DSP.

There are really two issues to consider in analysing this issue: whether any observed spike in returns is statistically significant and whether any observed spike is economically significant. Such a spike may be the former but not the latter.

The economic significance of any such behaviour appears to be quite small. Administrative data suggest that about two-thirds of those who return to the DSP have done so within six months of leaving it, as do about half of those who return to another income support payment. If most people who return to income support do so well before the critical anniversaries of leaving the DSP, it seems unlikely that these thresholds can be economically important in inducing people to return to the DSP.

There is no evidence of a statistically significant spike either. An analysis of the time people spend off benefits before returning to income support does not point to any spikes in the return rates just prior to the 12 or 24–month mark.

Consequently, it seems unlikely that the existence of the residual benefits retained after DSP recipients leave the payment has a significant impact on whether people return to income support. Rather, real factors like the state of the labour market and the attachment of individuals to work, as evidenced by whether they were employed when initially on the DSP, are more influential in determining whether those who leave the DSP can remain off it.

Other factors that influence whether those who leave the DSP remain off this or other forms of income support are noted below:

* Individuals aged 55 to 64 when they originally commenced on the DSP were more likely to have returned to income support by June 2007, but to the age pension rather than the DSP.
* Individuals aged 35 to 44 years when they originally commenced on the DSP originally were no more likely to have returned to welfare than younger workers, but those who did returned to the DSP rather than other payments.
* Females, married people and those with non-labour income were more likely to return to income support other than the DSP.
* Those living in remote areas were more likely to return to the DSP.

# 1 Introduction

The growth in the number of recipients of the Disability Support Pension (DSP) in Australia has been documented in a number of other studies. Recipient numbers have grown from around 2 per cent of the working age population in the early 1970s to about 5 per cent now (Lattimore 2007). Reasons put forward for this growth include changed labour market conditions, possible changes in the incidence of chronic health conditions, relaxation of disability assessment procedures, unintentional changes in the eligibility conditions for the DSP, and the removal of alternative income support payments—see the discussion in Cai and Gregory (2004a & 2004b) and Lattimore (2007).

In Australia, policy responses to this growth have included steps to limit the inflow into the DSP, via the re-tightening of eligibility, and to encourage new income support applicants with disabilities to work, where they can. These changes are described in section 3 below.

This paper looks at the impact of ‘residual’ entitlement or benefits on individuals who leave the DSP for work. Specifically, DSP recipients who leave the payment to work retain access to pensioner concession cards, including bulk-billing for doctors’ appointments and concessionary treatment for other health services and pharmaceutical benefits, for 12 months after leaving the DSP and have their payment suspended, rather than cancelled, for up to 24 months. Suspension means payment leavers do not have to re-establish their disability status should they seek to return to the payment within that time period. These residual entitlements are designed to reduce the disincentives for DSP recipients to leave the payment. The concern, however, is that they may induce former recipients to return to the DSP just prior to their expiry. The obvious way to study this is to assess whether there is any marked ‘spike’ in return rates to the DSP just prior to the expiry of individuals’ residual benefits.

This paper uses government administrative data on income support receipt to assess whether there are any spikes in the return to income support among DSP leavers just prior to the one and two-year anniversaries of their leaving the DSP. The key result of the paper is that the data do not point to the existence of any such effects.

The next section summarises the existing Australian literature on factors associated with the receipt of the DSP and with successful transitions off it, while section 3 describes the DSP scheme in a little more detail. Thereafter, the methodology and data are described in section 4 and the results in section 5. Conclusions and policy implications are drawn in section 6.

# 2 Disability, work and the Disability Support Pension—previous Australian research

Many, but not all, people with disabilities find that their capacity to work is limited because of their disability. Studies confirm this negative effect of disability on the likelihood that individuals work and their hours if they do. However, it is typically difficult to disentangle the direction of the causality for a number of reasons. These reasons include: the likelihood that periods without a job may adversely affect health conditions, including mental health problems (Graetz 1992), the fact that people live in communities where high disability and low employment rates co-exist, and the way people interpret their experiences, such that people who lose their jobs may rationalise in response to later questioning that a condition they have impairs their ability to work, as discussed in Bound and Burkhauser (1999).

For Australia, Oguzoglu (2007a) studied the impact of self-reported work limitations on employment using the Household, Income and Labour Dynamics in Australia (HILDA) Survey data, taking account of the joint nature of the two outcomes—an individual’s employment status and possession of a work limitation—both in any period and over time. Oguzoglu (2007a, p. 25) found both a direct and indirect effect of self-reported work limitations on employment and summarised the results as follows:

. . . while being disabled in the current period decreases the probability of being employed in that period, past periods of disability do not directly affect current employment status. However, being unemployed in past periods does decrease the probability of being employed in the current period, and so since having been disabled in the past also means a higher likelihood of having been unemployed in the past due to that disability, disability in the past has an indirect effect on current employment status.

Oguzoglu (2007b) further found that differences in severity levels explain a significant portion of the variance in participation rates among disabled individuals; that severe work limitations have a more immediate impact on the labour force outcomes of individuals; and that disabilities have longer-lasting adverse effects on female participation. Thus, people with disabilities are less likely to work. They are also more likely to be on income support. In Kalb, Wilkins and Wooden (2005), Wilkins reports that two of his own studies looked at the relationship between disability status and labour market disadvantage using Australian Bureau of Statistics (ABS) disability surveys. He found that individuals who had a disability were much more likely to be in receipt of welfare than other groups (29 and 23 percentage points for males and females respectively).

Bound and Burkhauser (1999) also found that the incentives provided by disability support systems might have encouraged more people onto schemes than can be explained solely by trends in health conditions in the population. Australian studies of the growth in numbers on the DSP confirm the role of factors beyond changes in the health of the population (Cai & Gregory 2004a & 2005, Lattimore 2007), with labour market conditions specifically playing an important role.

There is a set of key questions surrounding the operation of the DSP scheme and the incentives it provides to recipients who may have it within their capacity to work to remain on the payment or to look for work. Some of these issues involve the parameters of the scheme compared to alternative payments with less ‘generous’ conditions and more onerous requirements for receipt (see Lattimore 2007, Table 8.4). Others involve the role of the DSP and the way its specified medical eligibility criteria have been interpreted in flexible ways to absorb those without jobs in difficult economic times (Cai & Gregory 2004b) or as a result of changes in the eligibility criteria for other payments that made them harder to access (Cai & Gregory 2004a). Another set of issues surrounds the level of support required by people previously on the DSP to make successful transitions back into employment.

Studies that have analysed the operation of the DSP payment have looked at a number of separate features of the scheme, some of which are related to these issues. These factors include: the characteristics of recipients and their welfare history; the duration of recipients’ receipt of the payment; their ‘destinations’ if they cease to receive the payment; patterns of recurrence in receipt of the DSP and other welfare programs; and what factors influence the aggregate number of DSP recipients—including the role played by relative incentives between the DSP and other welfare payment categories, and past reforms to the operation of the DSP. Since this paper focuses on those who leave the DSP, the emphasis in the review of the literature that follows is on studies that analyse the destinations of those who leave payments and patterns of recurrence in receipt of DSP, along with the way income support recipients have been found to respond to the specific incentives of their payments, whether the DSP or other income support payments. A summary of the Australian literature on other aspects of the operation of the DSP appears in Kalb, Wilkins and Wooden (2005).

Australian studies of receipt of income support have found substantial evidence of both ‘churning’, the process of income support recipients ending a spell on income support and subsequently commencing a new spell within some specified time span (Dawkins et al. 2000, Tseng et al. 2008), and ‘transferring’, where recipients move from one payment type to another within a spell on income support (Gregory & Klug 2003, Harris & Kalb 2002, Tseng et al. 2008). These studies have all involved analysis of administrative data, some using the FaHCSIA Longitudinal Data Set (LDS), a 1 per cent sample of the administrative data, while others have used larger samples of the DSP population drawn from the same administrative data. For example, Tseng et al. (2008) found that one-half of income support recipients ‘churn’ within five years of commencing a spell on income support and one-fifth transfer between payment types. Given the patterns of transfers between payments, with relatively few people moving into unemployment-related payments, transferring therefore more often represents a move away from involvement in the labour market. The authors also found that about 18 per cent of transfers were ‘disability related’—that is, involving moves into or out of the DSP.

Another study (Cai et al. 2007) focused specifically on outflows from the DSP, analysing the extent and nature of transitions off the DSP. It set out to identify the factors associated with successful transitions off the DSP and other forms of income support. Cai et al. (2007) also used the government administrative data and found that, while those who left the DSP for work were the largest group of DSP leavers who did not go onto other forms of benefits, they were also the group most prone to return to the DSP within two years. The study has a number of components of direct relevance to this study. The authors analysed the destination of individuals who left DSP payments. They separately identified: transfers to the age pension; transfers to other income support payments; those involving the death of recipients; those who left for employment; other ‘positive’ exits (voluntary departures, improved health or improved circumstances, meaning the recipient exceeded the allowable asset or income tests); and other reasons. The authors treated a spell on the DSP as ending if recipients were off payments for seven fortnights. They adopted an ‘exit’ cohort approach, whereby they followed individuals who left the DSP between July 1998 and June 1999, analysing their experiences over the next three years. The exit success of individuals was measured as the proportion of time over the next three years they spent off income support. The groups least likely to make a successful exit from the DSP in terms of this measure of the proportion of time off benefits included:

* males aged over 55 years
* females with a partner on income support
* Indigenous people
* those with no earnings while on the DSP
* those whose main medical condition was an intellectual or learning disability
* females with a dependent child aged under 12 years
* those whose exit was not employment related or for another ‘positive’ reason.

Individuals with more than one of these characterstics faced a low probability of making a sustained exit from the DSP. Cai et al. (2007) also found that males with a partner on income support were less likely to exit the DSP for work but, if they did, their chance of making a sustained exit was better. They also found that those with a history of income support receipt were more likely to exit the DSP than those with no history prior to DSP receipt. However, those with a long duration of receipt did not necessarily sustain their exit from the DSP so well.

Studies have consistently found that individuals who are employed while in receipt of income support generally, and the DSP more specifically, are more likely to leave welfare or the DSP and remain off it (Tseng et al. 2008; Cai et al. 2007, for example) but that this is a relatively infrequent event in the DSP case. Lattimore (2007) makes this case most starkly: few recipients leave the DSP to take a job and even fewer do so to search actively for a job. Lattimore (2007) argues that leaving the DSP due to death is more likely than leaving it through re-engagement with the labour force, in part because age-standardised mortality rates among DSP beneficiaries are about four times those of the general population, underlining their seriously disadvantaged status.

Clearly, complex factors underlie the reasons why those who do manage to leave the DSP for employment find it difficult to stay off income support. Those employed prior to exit from the DSP have demonstrated an ability to manage employment and their disability status, which may explain part of their relative success compared with those not previously employed. At the same time, individuals who leave the DSP for employment may take some time while actually employed to assess properly how much their employment income differs from their welfare income and how many hours they need to work to be substantially better off. This number of hours may prove difficult for them, given their disability status. These factors are in addition to any effects of moving from a reliance on income support, including the loss of use of concession cards—a matter Kalb, Wilkins and Wooden (2005) identified as a potentially important ‘lock-in’ effect of income support receipt.

As stated earlier, DSP recipients who leave welfare for employment retain access to health care concessions for 12 months after exit from the DSP and can have a less administratively burdensome return to the payment for up to two years after exit. While there is little comparable international literature, one study related to this one is Campolieti and Riddell (2012). They analysed the introduction of automatic benefit re-instatement for disability scheme leavers in one Canadian province compared with the outcomes for individuals in an adjoining area of another province that did not introduce such automatic re-instatement. They found the introduction of automatic re-instatement had no impact on employment or disability program re-entry rates.

In relation to time-limited benefits, however, there is substantial evidence that individuals are responsive to the timing of the exhaustion of benefits. There is a well-known and oft-studied spike in exit rates from unemployment-related benefits where these are of limited duration. Studies of this phenomenon from a variety of countries include Moffitt (1985), Dolton and O’Neill (1996), Card et al. (2007), Lalive et al. (2006) and van Ours and Vodopivec (2006). Further, there is evidence that notifying or requiring individuals to undertake specific counselling and job search or mutual obligation activities in the future may result in them leaving unemployment benefits slightly earlier than they otherwise might—see Black et al. (2003), Black et al. (2007) and Richardson (2002), for example.

There is also evidence that time-limited in-work benefits, such as tax credits or payments made to newly employed workers after a spell without work, may affect the timing of re-employment, even if the eventual employment rates are not affected. For example, the Canadian self-sufficiency program (SSP) was a policy innovation that made work pay better than welfare for a randomly selected group of welfare recipients. The SSP offered a time-limited earnings supplement to single parents—largely single mothers—who were either long-term welfare recipients or recent welfare applicants. The supplement was a monthly cash payment to individuals who had been on welfare for at least one year. However, the payments did not commence until the individual was working in a full-time job (30 hours a week or more). The supplement was paid on top of earnings from employment for up to three years, as long as the person continued to work full-time and remained off the conventional welfare program.

The key findings of studies that have evaluated the impact of the SSP include that it increased employment, earnings and income, and reduced welfare use and poverty. However, these effects did not persist beyond the life of the project: the effects of SSP on employment, welfare use and income were small after the supplement stopped, when the outcomes of the intervention group were compared with the control group—see Michalopoulos et al. (2005), Card and Hyslop (2005) and Bitler et al. (2006), for example. The SSP influenced the timing of individuals finding work—but not whether or not they eventually did. Meyer (1995) reviewed four in-work bonus experiments from the United States. These experiments made payments to unemployment insurance recipients who found jobs quickly and kept them for a particular period of time. Overall, Meyer (1995) found that the experiments showed that bonuses did increase the speed with which people returned to work. A recent review that is more positive about the longer term impacts on employment of in-work benefit schemes is contained in Brewer et al. (2009).

# 3 Description of the Disability Support Pension

The Disability Support Pension (DSP) is a payment for people of working age who have a prolonged illness or injury that prevents them from undertaking work. To be eligible for the Disability Support Pension, individuals must be aged 16 or over, be under the minimum age pension age and:

* because of an illness, injury or disability, not be able to work for 15 hours or more per week at or above the relevant minimum wage or be reskilled for such work for at least the next two years; or
* be working under the Supported Wage System; or
* be permanently blind.

Individuals typically require a report from their medical practitioner about their disability, injury or illness and a Job Capacity Assessment to assess their work capacity, the potential hours they might work and what sort of assistance they might require to find and keep a job.

Those eligible for the DSP have traditionally enjoyed some advantages over those who rely on unemployment-related income support payments in Australia: the payment is higher; historically, they are not subject to an activity test involving job search or other mutual obligations in return for payment; they are subject to more favourable benefit withdrawal rates if they have other income, including earned income; and they enjoy access to pensioner concession cards, including bulk-billing for doctors’ appointments and concessionary treatment for other health services, and specific pharmaceutical benefits and access to valuable state government concessions (see Lattimore 2007, Table 8.4 on p. 167, for a more complete list of the relative advantages of receipt of the DSP over Newstart Allowance at that time).

Changes were made to the eligibility criteria of the DSP payment in 2006. New applicants capable of working more than 15 hours now receive an ‘enhanced’ Newstart payment, subject to an obligation to seek part-time work, but in conjunction with a pensioner concession card. These changes were part of a reform package designed to keep disabled people with some capacity to work engaged in the labour market. The retention of pensioner concession cards for 12 months and the ‘suspension’, rather than cancellation, of the payment for 24 months for those who leave the DSP to work are other factors designed to reduce the disincentives of DSP recipients to leave the payment. However, it is possible that the expiry of the periods of residual entitlement may result in changes in behaviour, inducing former recipients to return to the DSP just prior to expiry so that these valuable benefits are not lost. The way to study this is to look for any spikes in return rates to the DSP just prior to the expiry of these residual benefits.

There are two main factors to consider in analysing this issue: whether any observed spike is statistically significant and whether any observed spike is economically significant. As noted above, such a spike may be the former but not the latter. Much of the rest of the paper is concerned with whether any change in return to benefit rates is statistically significant, but at the outset it is worth presenting some evidence that suggests any such effect is unlikely to be economically significant. This is done with the aid of Figures 1 and 2.

These figures contain three sets of lines, all for groups who left the DSP payment and moved off income support at any time between January 1995 and June 2007—the data are described in more detail in the next section. In Figure 1, the dashed line shows how long those who eventually returned to the DSP remained off it. The dotted line shows how long those who eventually returned to some other welfare payment were off income support after leaving the DSP, while the solid line shows how long those who left the DSP and never returned to it had been off welfare when the data window closed in June 2007. It is clear from Figure 1 that most people who return to welfare do so well before they approach their 12-month anniversary of leaving the DSP.

|  |
| --- |
| Figure 1: Duration of time spent off benefits in years for all individuals who left the DSP (and moved off income support) any time between January 1995 and June 2007—LDS data |
| Y axis shows 'Distribution of duration off benefits'. X axis shows 'Time off benefits' (0 to 5 years). A dashed line shows how long those who eventually returned to the DSP remained off it - in most cases this was less than one year. A dotted line shows how long those who eventually returned to some other welfare payment were off income support after leaving the DSP. This also tended to be less than a year.The length of time that people who left the DSP and stayed off it remained fairly steady over the five-year period (rising slightly during the first two years, and then falling again).  |

This is made even clearer in Figure 2, which shows the cumulative probability of returning to welfare by a certain time after leaving the DSP for those who return to either the DSP or other income support payments. About two-thirds of those who return to the DSP have done so within six months of leaving it, and about half of those return to another welfare payment. Further, almost 80 per cent of those who return to the DSP payment do so within 12 months and just over 90 per cent return within 24 months. If most people who return to welfare do so well before the critical anniversaries of leaving the DSP, it seems unlikely that these thresholds can be economically very important in inducing people to return to the DSP.[[1]](#endnote-1) As it turns out, there is no great statistical support for this type of inducement found in the remainder of this paper either.

|  |
| --- |
| Figure 2: Cumulative distributions of time off benefits in years for all individuals who left the DSP (and moved off income support) any time between January 1995 and June 2007—LDS data |
| Y axis: Cumulative probability. X axis: Time off benefits - Years (0-5) Shows the cumulative probability of returning to welfare over the five years after leaving the DSP. About two-thirds of those who return to income support have done so within six months of leaving it - about half to the DSP and half to another welfare payment. Almost 80 per cent of those who return to the DSP payment do so within 12 months and just over 90 per cent return within 24 months. |

# 4 Data and methodology

## 4.1 Data

The data used in this paper come from the Longitudinal Data Set (LDS), a 1 per cent random sample of records extracted from the Centrelink mainframe containing detailed longitudinal information on individuals who received any income support payments from January 1995 to June 2007 (the ‘data window’). For each individual in the sample, a payment record is generated for every fortnight in which that individual received an income support payment in this period. In addition to information about the income support payment made and the amount (payment type, payment entitlement and, depending on the payment type, potentially other information related to it), the data predominantly consist of records of factors that might affect eligibility and the calculation of how much individuals should be paid (partner status and partner income support status, number of dependent children, age of youngest dependent child, earned income and unearned income). There is a small amount of demographic information used to determine the identity of individuals—sex, date of birth and postcode of residence. Over time, additions and improvements have been made to the data collected and retained in the file so that, for example, from May 1998 the main medical condition for those receiving the DSP is also reported.

The structure of the data allows detailed patterns of income support receipt and its duration, along with transitions across payments, to be identified and quantified, but it is limited in other respects. Important information about the characteristics of individuals, such as their education, is not collected for all individuals and, by their nature, the data do not contain information about the activities individuals engage in when they are not in receipt of income support. People who leave welfare for a job are not always reliably distinguished from those who leave it for other reasons (other than those who die). Further, information on individuals’ labour market activities while on welfare is also quite limited, once more recorded only for its impact on calculating eligibility for payment. Hence, earned income is reported, but not the hours individuals must work to earn that income. These gaps limit the use that can be made of the data in important ways.

Further, there are a number of data quality issues surrounding analysis of the data that are collected and stored in the LDS. First, fortnightly records of payments for some individuals are missing. The evidence for this is that, in some cases, the recorded ‘duration on current benefit/payment’ information for the specific payment category does not necessarily return to zero after a missing fortnightly record in the data. Second, the first record from the data window from January 1995 for some individuals is missing, even though it appears likely they were on welfare in that fortnight. This is evidenced by reports of the ‘duration on current benefit/payment’ information for the second possible fortnight that exceeds 14 days for these records. Third, cancellation or suspension incidence and the reasons for this are imperfectly recorded in the data. ‘Duration on current benefit/payment’ information is sometimes reset to zero for the same payment without any record of a cancellation or suspension. Fourth, individuals who received more than one payment in any fortnight have multiple records for that fortnight.

For the analysis presented here, these issues were dealt with in the following manner. First, in calculations of transitions off payments in the LDS, individuals were only treated as leaving a payment if they did not receive that payment for two successive fortnights.[[2]](#endnote-2) Individuals who were cancelled or suspended for just one fortnightly payment were not treated as making a transition off the DSP. Second, individuals whose first observation was for the second fortnight of the data window and whose ‘duration on current payment’ record exceeded 14 days were treated as having initially been on that payment. Third, the only cancellation reason relied on in the main analysis undertaken in this paper was for those whose cancellation was because they were identified as having died, although, in the results section, results where other reasons were also used are described. Fourth, where individuals received more than one payment, the benefit priority indicator was used to assign the highest-ranked payment as the relevant payment for that period. Over 90 per cent of fortnightly payments shown in the LDS data were made to individuals who received just one payment in the relevant fortnight.

Table 1: ‘Source’ of those in LDS who ever received DSP payments

|  |  |  |
| --- | --- | --- |
|  | Number | Percentage |
| Left censored |  |  |  |
|  on DSP in 1995 |  | 4,377 | 33.7 |
|  on NSA in 1995 |  | 863 | 6.6 |
|  on another payment in 1995 |  | 1,678 | 12.9 |
| Commenced a spell on income support after January 1995 |
|  started on DSP |  | 2,145 | 16.5 |
|  started on NSA |  | 1,401 | 10.8 |
|  started on another payment |  | 2,495 | 19.2 |
| Not allocated |  | 33 | 0.3 |
| Total |  | 12,992 | 100.0 |

Note: NSA: Newstart Allowance.

Source: Estimated from LDS data from January 1995 to June 2007.

A summary of the number of individuals in the LDS who ever received the DSP and their ‘experience’ of receipt of the DSP and other forms of benefits is contained in Tables 1 to 3. These show respectively where people who ever received the DSP over the LDS window came from, in terms of their observed entry into the income support system over that period, where or whether they exited the system, and how the exit patterns differed according to how individuals entered the welfare system. In aggregate, 12,992 individuals received the DSP at some stage during the period represented in the data. This represented 17 per cent of total fortnightly payments to individuals in the LDS over the period. From Table 1, more than half of these individuals were on income support at the start of the data window, with one-third of all recipients on the DSP at that time. Others moved from other payments to the DSP. The remaining DSP recipients moved to receipt of income support after January 1995, and most people commenced on another type of payment before moving eventually onto the DSP.

Of the individuals who ever received the DSP between January 1995 and June 2007, almost one-half remained in the LDS in June 2007 (see Table 2), almost one-quarter had moved onto the age pension and nearly 15 per cent had died.[[3]](#endnote-3) Of the balance, 668 had left the DSP and benefits and not returned by June 2007, 682 had left the DSP but returned to it by June 2007, and 319 had left the DSP but returned to some other payment by June 2007. Hence, the LDS provides information about the experiences of some 1669 individuals who left the DSP payment within the window covered by the data and who might be analysed to assess the role of special circumstances surrounding receipt of benefits other than the DSP.

Table 2: ‘Outcomes’ to June 2007 of those in LDS who ever received DSP payments

|  | Number | Percentage |
| --- | --- | --- |
| Right censored |  |  |
|  stayed on DSP to end (June 2007) | 6,252 | 48.1 |
|  moved to age pension, still on it at end | 2,860 | 22.0 |
|  moved to another payment, still on it at end | 152 | 1.2 |
|  left DSP and benefits but returned by end | 682 | 5.3 |
|  left DSP and benefits but returned to another payment by end | 319 | 2.5 |
| Left DSP and benefits and not on them at end | 668 | 5.1 |
| Left DSP for another payment but left payments by end | 74 | 0.6 |
| Died | 1,900 | 14.6 |
| Not allocated | 85 | 0.7 |
| Total | 12,992 | 100.0 |

Source: Estimated from LDS data from January 1995 to June 2007.

Table 3 combines this information on where DSP recipients came from (or the ‘sources’) with what their income support receipt status was by June 2007 (their ‘outcomes’). People on the DSP at the start of the data window or who commenced receipt of welfare were more likely to have moved onto the age pension by June 2007 than other groups. People in these groups were also much more likely to have died by June 2007 than other groups of DSP recipients. Those who managed to leave the DSP and remain off it to the end of the data window were more likely to have come from new starters on welfare than those who were on welfare at the commencement of the data window.

Table 3: Distribution of DSP ‘source’ categories across ‘outcomes’ to June 2007 for those in LDS who ever received DSP payments (Percentage share of ‘source’ category)

|  | Right censored |  | ‘Outcome’ left DSP |
| --- | --- | --- | --- |
| Receiving at end |  | Receiving at end |
| DSP | AGE | Other IS |  | DSP | Other IS | Off DSP & IS | Left IS | Died |
| *‘*Source’ category |  |  |  |  |  |  |  |  |  |
| Left censored: |  |  |  |  |  |  |  |  |  |
|  | DSP at start  | 34.6 | 32.9 | 0.8 |  | 3.7 | 2.2 | 2.7 | 0.5 | 21.9 |
|  | NSA at start  | 65.5 | 10.8 | 0.6 |  | 6.5 | 1.6 | 4.3 | 0.6 | 9.6 |
|  | another payment | 62.8 | 12.0 | 1.7 |  | 6.3 | 1.7 | 4.9 | 0.5 | 9.5 |
| Commenced: |  |  |  |  |  |  |  |  |  |
|  | DSP | 40.2 | 24.9 | 1.2 |  | 5.4 | 4.1 | 6.4 | 0.4 | 16.5 |
|  | NSA | 60.0 | 16.5 | 1.3 |  | 5.7 | 2.2 | 6.1 | 0.5 | 7.4 |
|  | another payment | 56.1 | 14.2 | 1.5 |  | 6.3 | 2.5 | 8.3 | 0.9 | 9.4 |
| **Total** | **48.1** | **22.0** | **1.2** |  | **5.2** | **2.5** | **5.1** | **0.6** | **14.6** |

Note: NSA: Newstart Allowance; IS: income support.

Source: Estimated from LDS data from January 1995 to June 2007.

The descriptive statistics for all of the variables used in the analysis that follows are presented in Appendix Table A. The means and standard deviations are shown separately for all DSP recipients and for those who ever left the DSP and income support. The data vary in terms of when they were measured. For example, variables such as age and residential and regional status were measured when individuals were first observed in the data. Other characteristics, such as their employment status or receipt of unearned income prior to leaving welfare, were measured based on their last observation on income support. Variables such as the proportion of time that they worked while on welfare are obviously based on their entire spell on income support. The average age of DSP recipients when first observed in the data is about 45 years, and about two-thirds over this period are male. Nearly 10 per cent of them had jobs while on the DSP and a substantial proportion had non-wage income at some time while on the DSP. The group who left the DSP tended to be younger, to have spent more time working while on the DSP and not to be home owners or government housing occupants.

## 4.2 Methodology

In the remainder of this paper, three issues about transitions out of receipt of the DSP are considered: what are the characteristics of those who leave; how do those who leave and stay off income support differ from those who return to it; and how long did those who returned to income support manage to stay off it?

The first two questions involve comparisons of the characteristics of individuals and can be handled by regression analysis that looks at the outcomes of individuals as though they are discrete ‘choices’. In this paper, this is conducted by estimating two sets of multinomial logit regression equations. The first equation compares the characteristics of those who received the DSP at some time in the data window and were not known to be dead by June 2007 and: (i) had not left income support; (ii) had left the DSP but returned to income support; or (iii) had left the DSP and not returned to income support.[[4]](#endnote-4) This equation is estimated over all people who received the DSP at some time in the data window and were not known to be dead in June 2007.

The second equation compares the characteristics of those who left the DSP payment at some time in the data window and were alive in June 2007 and: (i) returned to the DSP; (ii) returned to some other income support payment; or (iii) had left the DSP and not returned to income support. This equation is estimated over all people who stopped receiving the DSP at some time in the data window and were not known to be dead in June 2007.

The multinomial logit regression approach allows estimation of the characteristics of individuals that were associated with a greater likelihood of their being in one of these outcome categories than another. For example, it might well be expected that, among those who commenced a spell of receipt of DSP, older individuals would be less likely to leave it. Age would be estimated to increase the likelihood of remaining on income support and decrease the likelihood of individuals being observed in other outcome categories.

The third research question listed above, about how long individuals stay off welfare, requires a different form of analysis, this time focused on ‘spell’ durations—here on the pattern of duration off income support of those who leave the DSP. In fact, analysis in this paper looks at whether there is any unusual ‘bunching’ of DSP recipients returning to welfare just prior to 12 and 24 months after leaving it, both in the multinomial logit regression analysis and in more formal duration analysis involving estimation of survival functions for staying off welfare. The multinomial logit regression analysis addresses the question of whether individuals had specific characteristics that made them more likely to be in one category than another. Hence, it is possible to assess whether there is any evidence of higher return rates to welfare among individuals with observed spells off the DSP of just less than 12 or 24 months than among those with observed spells of just beyond those thresholds. Differences in these return rates can be checked through the use of spline functions, which allow tests of whether the logit parameters are different for those with durations off the DSP of just less than the thresholds from those with durations just above them.

In the more formal duration analysis, the survival function is an estimate of the probability of surviving to, or remaining off benefits to, time *t* or beyond for those who left the DSP.[[5]](#endnote-5) In this paper, both ‘empirical’ survival functions—those apparent in the data, ignoring any other characteristics of individuals—and functions that take account of the other characteristics of individuals that might affect whether they remain off income support are shown.[[6]](#endnote-6)

It is common in the duration literature to limit attention to specific cohorts of individuals—for example, to analyse the duration on benefits experience of a cohort who entered income support receipt in a given year or to analyse what the repeat welfare experience is of a group who left in some common period. This can have analytical advantages in some circumstances: recipients or leavers face the same payment eligibility criteria and incentive structure or external aggregate labour market conditions if that approach is taken. If we compare the characteristics of individuals whose outcomes are measured at a common point, it seems less clear there are those analytical advantages, although it may be for the duration analysis of time remaining off benefits that labour market conditions are important. Here, labour market conditions are dealt with by including state aggregate unemployment rates for the period when individuals first left welfare in the relevant regression equation.

# 5 Results

## 5.1 Who leaves the DSP and income support?

The analysis presented in this subsection looks at the entire group of individuals in the LDS who ever received the DSP to assess how or whether the observed characteristics of those who left the DSP differed from those who never left income support. That is, it involves the comparison of the characteristics of those who received the DSP at some time in the data window and were alive in June 2007 and: (i) had not left income support; (ii) had left the DSP but returned to income support; or (iii) had left the DSP and not returned to income support.

The full set of multinomial logit regression equation results appears in Appendix Table B. These results show how the characteristics of individuals affect their likelihood of either still being on income support or having returned to it relative to the characteristics of individuals who left income support and remained off it. The parameters show the effects, holding constant all other factors also taken account of in the regression equation. These parameters can be difficult to interpret, so it is common to transform them into ‘marginal effects’, which show how the probability of an individual being in any of the three categories would change if their characteristics were different. The marginal effects of these characteristics on the outcome categories are summarised in Table 4, which shows the direction of the marginal effects that were estimated to be significant at the 5 per cent level. For example, the first two rows indicate that older individuals in the data were indeed less likely to ever leave welfare than were younger individuals. Females were also less likely to ever leave welfare.

The impact of other factors is more complicated. For example, the results indicate that those with longer durations on income support are more likely to be off welfare at the end of the period, while those with shorter durations are more likely to have never left income support. There are two things to say about this. First, this is an estimate of the association between benefit receipt and duration conditioning on age, so it ignores any association between duration of receipt and age. Second, since the outcome is measured at a specific date, in June 2007, it is those who most recently commenced on income support who are most likely to still be on it at that time, all other things considered. This is just a variant of the result shown later, that survival functions are downward sloping, so those most likely to be on income support are those who commenced their spell most recently.

Working at the time of exit from the DSP is not associated with remaining off benefits, but the amount of time an individual or their partner spent working while on the DSP is. The proportion of time individuals or their partners had non-work income is positively associated with remaining off benefits. DSP recipients who are residents of government housing are more likely to remain on income support and less likely to be in the group that leaves and stays off than are those with other living arrangements.

Table 4: Direction of marginal effects significant at the 5 per cent level on DSP recipients’ end-period outcome(a)

|  | Never left welfare | Returned to welfare | Off welfare |
| --- | --- | --- | --- |
| Aged 45 to 54 years | > 0 | < 0 | < 0 |
| Aged 55 to 64 years | > 0 | < 0 | < 0 |
| Female | > 0 | < 0 | < 0 |
| Born overseas |  |  |  |
| English–speaking country | < 0 |  | > 0 |
| Non–English speaking country |  | > 0 |  |
| Employed |  |  | < 0 |
| Duration on income support | < 0 | > 0 | > 0 |
| Proportion of time on DSP individual worked | < 0 |  | > 0 |
| Proportion of time partner worked | < 0 |  | > 0 |
| Proportion of time had non-work income | > 0 |  |  |
| Proportion of time partner had other income | > 0 |  |  |
| Government renter | > 0 |  | < 0 |
| Paid board |  |  | < 0 |
| Inner regional | > 0 | < 0 |  |

(a) There were also some state and regional variables that were significant in the regression equation.
Source: Estimated from LDS data from January 1995 to June 2007.

## 5.2 Who stays off the DSP?

The analysis presented in this subsection looks at the group of individuals who left the DSP to assess how or whether the observed characteristics of those who remained off it differed from those who returned to income support. It involves the comparison of the characteristics of those who received the DSP at some time in the data window, who left the DSP and income support, who were alive in June 2007 and who: (i) returned to the DSP; (ii) returned to some other income support payment; or (iii) had not returned to income support.

The multinomial logit regression equation also includes information on how long people were off income support. In the case of those who returned to income support, this duration is of a completed spell off income support. In the case of those who remained off income support in June 2007, this represents an incomplete or ‘right censored’ spell—it is not known how much longer individuals would have remained or did remain off income support. Duration analysis deals with this censoring most appropriately, but it is possible to use the regression analysis to see informally whether there appear to be any ‘spikes’ in the return to income support just prior to 12 and 24 months off welfare.

Once more, the full set of multinomial logit regression equation results appear in the Appendix (Table C), while the summary of the direction of the marginal effects of this regression equation appears in Table 5. Among those who ever left DSP payments, individuals aged 55 to 64 when they originally commenced on the DSP are likely to have returned to income support, but to another payment, most notably the age pension, by June 2007. Individuals aged 35 to 44 years when they originally commenced on the DSP are no more likely to have returned to welfare than younger workers, but those who do tend to return to the DSP rather than other payments. Females and married people are more likely to return to income support other than the DSP. Those with non-labour income tend to return to other forms of welfare but not the DSP. Those who spent a higher proportion of their time while on welfare working tend to stay off welfare. Finally, those living in remote areas are more likely to return to the DSP.

Table 5: Direction of marginal effects significant at the 5 per cent level on DSP leavers’ end-period outcome(a)

|  | Returned to DSP | Returned to IS | Remained off IS |
| --- | --- | --- | --- |
| Aged 35 to 44 years | > 0 | < 0 |  |
| Aged 55 to 64 years | < 0 | > 0 |  |
| Female |  | > 0 |  |
| Married |  | > 0 |  |
| Partner is Indigenous |  | > 0 | < 0 |
| Born overseas |  |  |  |
| Non–English speaking country | < 0 | > 0 |  |
| Has non-work income | < 0 | > 0 |  |
| Proportion of time on DSP individual worked | < 0 |  |  |
| State unemployment rate | > 0 | > 0 | < 0 |
| Remote | > 0 |  |  |

(a) There were also some state and regional variables that were significant in the regression equation.

Note: IS: income support.

Source: Estimated from LDS data from January 1995 to June 2007.

The main variable that affects the return rates, however, is not a personal characteristic. The state of the labour market, here measured by the unemployment rate in the state where the individual lived in the year in which they left the DSP, has a substantial impact on their return to income support. A one percentage point increase in the unemployment rate is associated with a 13 percentage point increase in the likelihood individuals will return to the DSP and a 7 percentage point increase in the likelihood individuals will return to another payment type. This effect dominates all others in the regression equation. Further, since state dummy variables are included in the equation, this effect is identified by variation over time within states, making the effect strictly a business cycle one.

## 5.3 How long do leavers stay off the DSP and other forms of income support?

The multinomial logit equation discussed in the last subsection also contained information on the duration individuals had been off the DSP when either they returned to benefits or the data window closed. This information was included in the equation in the form of a flexible spline function, with the duration parameters allowed to change at six, 10, 12, 22 and 24 months.[[7]](#endnote-7) The relationship between the time off benefits and how likely an individual is to be in the group still off income support is presented in Figure 3. It has a positive slope because individuals whose spell off benefits is observed to be the longest are the most likely to still be off benefits. By the time an individual is observed to have been off income support for close to five years, the probability is almost one that they are still off income support. If the 12 and 20-month thresholds were important, an accelerated return to welfare (a flatter curve) just prior to the 12 and 24-month thresholds would be apparent, followed by a steeper curve just beyond them. The spline functional form would allow such a pattern to be captured if it were in the data and, visually, the curve appears somewhat flatter before 24 months than after it, but there are no apparent changes at around 12 months.

|  |
| --- |
| Figure 3: Effect of time since leaving benefits on remaining off them—regression estimates |
| Y axis: Probability - Not on income support. X axis: Time off benefits - Years (0-5) Graph showing relationship between time off benefits and how likely an individual is to be still off income support. Individuals whose spell off benefits is the longest are the most likely to still be off benefits. By the time an individual has been off income support for close to five years, the probability is almost one that they are still off income support. |

The spline ‘knot’ points also allow tests of whether the effect of duration on the return to welfare is different in the 10 to 12-month period, for example, as well as just after 12 months. Hence, it is possible to test whether there are any ‘spikes’ in the return to welfare just prior to 12 and 24 months off welfare. The outcomes of these tests appear in Table 6. The outcome of the tests indicates that the linear and quadratic time of benefits terms are significant, so time off benefits is important in identifying which outcome group individuals are in, and the spline function terms are jointly significant, so the curves indeed change shape as the time off benefits changes. However, none of the joint tests of the significance of spline terms around the benefit exhaustion thresholds are significant, so there is no evidence that the relationship between time off benefits and the category in which people fall is different just before the thresholds from the relationship just beyond the time off benefits thresholds. Hence, the thresholds do not seem to induce any statistically different behaviour from those off the DSP, at least from the multinomial logit regression analysis.

Table 6: Tests of changes in probability of remaining off income support as time since leaving DSP increases

|  | p-value of tests |
| --- | --- |
|  | Returned to DSP | Returned to DSP or other IS |
| Linear and quadratic terms equal zero |  | 0.000 |
| Spline terms all equal zero |  | 0.001 |
| Spline effects for remaining off IS do not change at: |  |  |
|  10 months | 0.532 | 0.211 |
|  12 months | 0.749 | 0.515 |
|  22 months | 0.881 | 0.937 |
|  24 months | 0.490 | 0.724 |

Note: IS: income support. The first column is of the variables’ significance in the return to DSP; the second is a joint test of return to either DSP or other payments.

Source: Estimated from LDS data from January 1995 to June 2007.

The duration analysis tells the same story. The empirical survival function, which shows the probability of surviving to, or remaining off benefits to, time *t* or beyond for those who left the DSP, is presented in Figure 4. This would show substantial drops in the survival function just prior to 12 and 24 months off welfare and little change just after those thresholds if the thresholds were influencing behaviour. Instead, both the empirical survival function and the survival function estimated after taking account of other factors that might have an effect, via a Cox hazard function regression, are smooth functions around the 12 or 24-month thresholds, though there is nothing in the estimation procedure that imposes this smoothness. Further, when the baseline hazard was estimated using a flexible piece-wise linear function, there was no evidence of significant returns to income support in the baseline hazard just prior to the thresholds compared to just after them and, for the 12-month threshold, the change went in the wrong direction.

|  |
| --- |
| Figure 4: Survivor function for those who left benefits in years—empirical function and regression estimate |
| X axis - time off benefits 1 to 5 years. Y axis 'Baseline survivor function'. Duration analysis, with results described in paragraph above. |

Hence, neither the multinomial logit analysis nor the duration analysis provides any evidence that the 12 and 24-month thresholds induce any kind of different behaviour to return to welfare among those who had managed to leave the DSP in the LDS data.

One potential factor mentioned in an earlier section that may cast some doubt on these results is that we do not know if those who left the DSP and never returned to income support were actually alive in June 2007, since a consequence of them leaving the data set is that their death cannot be recorded there. In the empirical analysis reported to date, such individuals are treated as having a spell off benefits that was continuing in June 2007. The potential sensitivity of the results to this issue was assessed in the following way. First, an equation that aimed to identify the factors associated with death among the entire group was estimated (close to 15 per cent of DSP recipients were recorded as having died during the data window). Death was positively associated with age, being male, being married and not having sources of non-labour income and was negatively associated with having young children. This equation was used to predict the likelihood of death among all DSP recipients. The average likelihood for each outcome group was estimated. Among those who actually died, the average likelihood was in excess of 20 per cent. Among the group who left the DSP and were never recorded as returning to income support, the average likelihood of death was estimated at just under 11 per cent (the smallest average of any group). Those DSP leavers whose likelihood of death exceeded the average for the group who actually died (45 cases, or 7 per cent of cases) were deleted from the sample and the analysis reported above repeated for the reduced sample. The deletion of these observations had no qualitative impact on the estimated results.

## 5.4 Effects among those with positive exits or those whose payments were only suspended

The analysis to date has not made use of information about why recipients may have left the DSP. This information has been available in the LDS data since May 1998. It was used in Cai et al. (2007) to distinguish between returns to work, other ‘positive’ exits and other exits from the DSP. Positive exits were those where an exit was voluntary or where the health or other circumstances of DSP recipients improved such that the recipient exceeded allowable asset or income tests. Those who left the DSP for such a positive reason were more likely to make successful longer-term transitions from welfare than those whose exit was to return to work, who in turn had more positive outcomes than those who left for another reason.

Because the most reliable information in administrative data is always that which is collected to determine the eligibility of individuals for payment or for some other administrative purpose, and the reasons why people might leave income support in the LDS are not required for such purposes, it seems appropriate to treat these ‘reasons for leaving’ data with care. Further, the multiple categories in the ‘reasons for leaving’ code associated with leaving to take up a job do not promote so much confidence in the data quality. Where we use this information to assign people as leaving for either ‘positive’ reasons, in this case combining the return to work, and other reasons, as in Cai et al. (2007), we find little that is qualitatively different in the results. People who leave the DSP for positive reasons (about 30 per cent of those who leave) also tend to return to welfare well before they approach 12 months off welfare. This is shown with the addition of a new ‘dashed’ line showing the cumulative distribution of returns among those with ‘positive’ exits to Figure 2, now revised in Figure 5.

The status of those who leave benefits has also been available in the LDS data since May 1998. Those whose payments are ‘cancelled’ for some payment breach are distinguished from those whose payments are ‘suspended’. In the case of the DSP, this information does have an administrative purpose, since those whose payments are suspended can avoid having to re-establish their disability status for the purpose of returning to the payment. This information, at least the suspension status of individuals, is therefore likely to be more reliable than the reasons for leaving recorded in the data. Further, it is retention of this ‘suspension’ status for two years that is considered one of the main residual benefits among the group who manage to leave the payment. Almost 60 per cent of those who left the payment in the LDS data had their payments ‘suspended’ rather than terminated or cancelled (among those with valid responses—responses were missing even for this variable in almost 20 per cent of cases). Once more, however, when this information is used to analyse people whose payments were suspended, we find they also tended to return to income support well before they approached 12 months off welfare, let alone two years. This is shown with the addition of another ‘dotted’ line showing the cumulative distribution of returns among those whose payments were suspended, again shown in Figure 5.

|  |
| --- |
| Figure 5: Cumulative distributions of time off benefits in years for all individuals who left DSP (and moved off income support) any time between January 1995 and June 2007—‘positive’ exit and suspension distributions |
| X axis - Time off benefits, 1 to 5 years. Y axis 'Cumulative probability'. Shows cumulative probability for five types of outcome: Left DSP; Returned to DSP; Returned to [other] Income Support; Positive exit [eg health improved, or exceeded asset or income tests]; Suspended [ie can return to DSP without having to re-establish disability status]. In each case, cumulative probability increases over time. See analysis in text. |

The inclusion of information about ‘positive’ exits or suspension status, in the form of interactions with the time off benefits variable (and spline function) or restriction of the sample to these groups, did not have any qualitative or statistically significant impact on the results already reported. The results already reported appear to be robust in taking this additional information into account.

# 6 Conclusion

The main conclusion of this paper is that the expiry of the residual health and pharmaceutical benefits after 12 months and suspension status after 24 months of being off the DSP are not really the ‘main game’ in terms of policies to address how to get people to remain off DSP payments. Most people who return to the DSP do so well before they approach their 12-month anniversary of having left it. Hence, any effects from residual entitlements can have influenced the timing of only a minority of those who ever returned to the DSP, let alone have affected the aggregate return rate very much. Moreover, tests of how the return to income support payments changes with duration off benefits do not show any evidence of ‘spikes’ just prior to the 12 and 24-month thresholds. Hence, it appears that the ‘failure’ of the return to work among those who leave the DSP takes place early. While this does not point to exactly what goes wrong or suggest policies that might redress the causes of these failures, it does point to when the interventions need to occur—soon after people leave the DSP.

Rather than administrative features of the scheme, the main determinants of whether people remain off DSP payments appear to be the state of the labour market and their prior attachment to the labour market, as measured by the proportion of time they worked while they were in their previous spell on the DSP. Other individual characteristics associated with a return to the DSP or income support include the age of individuals, with older people more likely to have returned to the age pension by June 2007, while females, married people and those with non-labour income were more likely to return to income support payments other than the DSP. Those living in remote areas, other things being equal, were more likely to return to the DSP.

Clearly there are complex factors at work that determine why only some of those who manage to leave the DSP for employment remain off income support. Those people with work experience while on the DSP have already exhibited an ability to manage the various demands of work in conjunction with their disabilities. It seems likely that the failure of others to remain off income support reflects, in part, an inability to manage these various demands, along with other obstacles they may face such as the state of the labour market and their support environment. This research cannot point to what services might be necessary or useful in aiding this adjustment process for people returning to work, but it obviously points to the need to understand this better.

#  Appendix A: Detailed tables

Table A: Summary statistics

|  | DSP recipients |  | Group left DSP |
| --- | --- | --- | --- |
|  | Mean | Std dev. |  | Mean | Std dev. |
| Age (in years) | 44.9 | 13.9 |  | 39.3 | 13.8 |
| Aged 25 to 34 years | 0.133 | 0.339 |  | 0.183 | 0.387 |
| Aged 35 to 44 years | 0.203 | 0.402 |  | 0.249 | 0.433 |
| Aged 45 to 54 years | 0.305 | 0.461 |  | 0.286 | 0.452 |
| Aged 55 to 64 years | 0.307 | 0.461 |  | 0.148 | 0.356 |
| Aged 65 or more years | 0.003 | 0.059 |  | 0.002 | 0.044 |
| Female | 0.366 | 0.482 |  | 0.345 | 0.475 |
| Married | 0.464 | 0.499 |  | 0.391 | 0.488 |
| Child aged 0 to 4 years | 0.046 | 0.210 |  | 0.058 | 0.234 |
| Child aged 5 to 9 years | 0.049 | 0.215 |  | 0.055 | 0.228 |
| Child aged 10 to 14 years | 0.057 | 0.231 |  | 0.064 | 0.245 |
| Child aged 15 or more years | 0.015 | 0.120 |  | 0.015 | 0.120 |
| Indigenous | 0.030 | 0.170 |  | 0.041 | 0.198 |
| Partner is Indigenous | 0.009 | 0.092 |  | 0.010 | 0.101 |
| Born overseas—English speaking country | 0.084 | 0.277 |  | 0.095 | 0.293 |
| Born overseas—Non–English speaking country | 0.214 | 0.410 |  | 0.201 | 0.401 |
| Employed | 0.082 | 0.274 |  | 0.098 | 0.297 |
| Partner employed | 0.059 | 0.236 |  | 0.067 | 0.250 |
| Has non-work income | 0.345 | 0.475 |  | 0.266 | 0.442 |
| Partner has non-work income | 0.200 | 0.400 |  | 0.123 | 0.329 |
| Duration on income support | 5.6 | 6.9 |  | 7.0 | 7.0 |
| Proportion of time on DSP individual worked | 0.082 | 0.194 |  | 0.123 | 0.224 |
| Proportion of time partner worked | 0.075 | 0.205 |  | 0.097 | 0.225 |
| Proportion of time had non-work income | 0.432 | 0.430 |  | 0.342 | 0.399 |
| Proportion of time partner had other income | 0.246 | 0.384 |  | 0.164 | 0.316 |
| Home owner | 0.378 | 0.485 |  | 0.285 | 0.451 |
| Home purchaser | 0.027 | 0.163 |  | 0.038 | 0.191 |
| Home owner other | 0.015 | 0.120 |  | 0.013 | 0.112 |
| Private renter | 0.206 | 0.405 |  | 0.256 | 0.437 |
| Government renter | 0.086 | 0.280 |  | 0.051 | 0.220 |
| Paid board | 0.083 | 0.275 |  | 0.086 | 0.280 |
| Other rental | 0.181 | 0.385 |  | 0.246 | 0.431 |
| Major city | 0.631 | 0.483 |  | 0.650 | 0.477 |
| Inner regional | 0.224 | 0.417 |  | 0.194 | 0.395 |
| Outer regional | 0.111 | 0.314 |  | 0.114 | 0.318 |
| Remote | 0.014 | 0.117 |  | 0.017 | 0.130 |
| Very remote | 0.007 | 0.085 |  | 0.010 | 0.098 |
| New South Wales | 0.339 | 0.473 |  | 0.342 | 0.474 |
| Victoria | 0.235 | 0.424 |  | 0.219 | 0.414 |
| Queensland | 0.182 | 0.386 |  | 0.198 | 0.398 |
| South Australia | 0.091 | 0.287 |  | 0.077 | 0.266 |
| Western Australia | 0.088 | 0.283 |  | 0.100 | 0.300 |
| Tasmania | 0.031 | 0.172 |  | 0.020 | 0.142 |
| Northern Territory | 0.008 | 0.091 |  | 0.011 | 0.104 |
| ACT | 0.011 | 0.106 |  | 0.015 | 0.123 |
| Time off benefits (years) |  |  |  | 2.1 | 2.7 |

Source: Estimated from LDS data from January 1995 to June 2007.

Table B: Multinomial logit results: outcomes of all DSP recipients

|  | Remained on IS |  | Returned to IS |
| --- | --- | --- | --- |
|  | Parameter | Std error |  | Parameter | Std error |
| Aged 35 to 44 years | 0.182\* | 0.109 |  | 0.130 | 0.135 |
| Aged 45 to 54 years | 0.453\*\*\* | 0.116 |  | 0.214 | 0.141 |
| Aged 55 to 64 years | 1.811\*\*\* | 0.186 |  | 1.217\*\*\* | 0.213 |
| Aged 65 or more years | –0.892 | 0.772 |  | –1.735 | 1.244 |
| Female | 0.536\*\*\* | 0.090 |  | 0.282\*\* | 0.110 |
| Married | 0.130 | 0.134 |  | 0.142 | 0.162 |
| Child aged 0 to 4 years | –0.154 | 0.188 |  | –0.373 | 0.242 |
| Child aged 5 to 9 years | –0.093 | 0.189 |  | –0.244 | 0.238 |
| Child aged 10 to 14 years | –0.135 | 0.188 |  | –0.083 | 0.229 |
| Child aged 15 or more years | –0.607\* | 0.311 |  | –0.559 | 0.402 |
| Indigenous | –0.059 | 0.245 |  | 0.202 | 0.290 |
| Partner is Indigenous | 0.662 | 0.625 |  | 1.014 | 0.679 |
| Born overseas—English–speaking country | –0.591\*\*\* | 0.136 |  | –0.335\* | 0.172 |
| Born overseas—Non–English speaking country | 0.010 | 0.125 |  | 0.202 | 0.148 |
| Employed | 0.336\*\* | 0.160 |  | 0.346\* | 0.197 |
| Partner employed | –0.047 | 0.195 |  | 0.037 | 0.243 |
| Has non-work income | –0.135 | 0.145 |  | –0.055 | 0.178 |
| Partner has non-work income | –0.065 | 0.208 |  | –0.305 | 0.252 |
| Duration on income support | –0.050\*\*\* | 0.006 |  | –0.029\*\*\* | 0.008 |
| Proportion of time on DSP individual worked | –1.212\*\*\* | 0.188 |  | –0.856\*\*\* | 0.243 |
| Proportion of time partner worked | –1.075\*\*\* | 0.214 |  | –0.725\*\*\* | 0.273 |
| Proportion of time had non-work income | 0.267 | 0.174 |  | 0.054 | 0.213 |
| Proportion of time partner had other income | 0.491\* | 0.251 |  | 0.271 | 0.303 |
| Home owner | 0.387\* | 0.226 |  | 0.501\* | 0.295 |
| Home purchaser | 0.224 | 0.304 |  | 0.703\* | 0.383 |
| Home owner other | –0.105 | 0.384 |  | –0.081 | 0.498 |
| Private renter | 0.255 | 0.219 |  | 0.540\* | 0.288 |
| Government renter | 0.884\*\*\* | 0.281 |  | 0.596\* | 0.358 |
| Paid board | 0.652\*\* | 0.254 |  | 0.775\*\* | 0.328 |
| Other rental | 0.349 | 0.224 |  | 0.577\*\* | 0.294 |
| Inner regional | –0.015 | 0.107 |  | –0.263\* | 0.136 |
| Outer regional | –0.001 | 0.142 |  | 0.042 | 0.173 |
| Remote | –0.130 | 0.358 |  | 0.314 | 0.415 |
| Very remote | 0.332 | 0.570 |  | 0.550 | 0.642 |
| Victoria | 0.071 | 0.115 |  | –0.202 | 0.140 |
| Queensland | –0.169 | 0.116 |  | –0.340\*\* | 0.144 |
| South Australia | 0.317\* | 0.172 |  | –0.004 | 0.207 |
| Western Australia | –0.315\*\* | 0.146 |  | –0.420\*\* | 0.181 |
| Tasmania | 0.662\*\* | 0.314 |  | 0.327 | 0.375 |
| Northern Territory | –0.030 | 0.475 |  | –0.282 | 0.564 |
| ACT | –0.298 | 0.327 |  | –0.347 | 0.409 |
| Constant | 2.046\*\*\* | 0.238 |  | 0.048 | 0.310 |

Note: IS: income support. \**,* \*\* and \*\*\*indicate significant at the 10, 5 and 1 per cent levels respectively.

Source: Estimated from LDS data from January 1995 to June 2007.

Table C: Multinomial logit results: outcomes of all DSP leavers

|  | Returned to DSP |  | Returned to IS |
| --- | --- | --- | --- |
|  | Parameter | Std error |  | Parameter | Std error |
| Aged 35 to 44 years | –0.059 | 0.260 |  | –1.274\*\*\* | 0.353 |
| Aged 45 to 54 years | –0.101 | 0.275 |  | 0.147 | 0.309 |
| Aged 55 to 64 years | –1.588\*\*\* | 0.461 |  | 1.831\*\*\* | 0.413 |
| Female | 0.307 | 0.216 |  | 1.076\*\*\* | 0.247 |
| Married | 0.045 | 0.322 |  | 0.766\*\* | 0.367 |
| Child aged 0 to 4 years | –0.739 | 0.472 |  | –0.417 | 0.566 |
| Child aged 5 to 9 years | –0.284 | 0.452 |  | –0.014 | 0.526 |
| Child aged 10 to 14 years | 0.026 | 0.430 |  | –0.199 | 0.529 |
| Child aged 15 or more years | –1.641\* | 0.879 |  | –0.848 | 0.901 |
| Indigenous | –0.623 | 0.497 |  | –0.775 | 0.636 |
| Partner is Indigenous | 2.247\* | 1.280 |  | 3.848\*\*\* | 1.266 |
| Born overseas—English–speaking country | –0.246 | 0.348 |  | 0.075 | 0.398 |
| Born overseas—Non–English speaking country | –0.353 | 0.283 |  | 0.216 | 0.310 |
| Employed | 0.083 | 0.359 |  | 0.105 | 0.419 |
| Partner employed | 0.473 | 0.481 |  | 0.455 | 0.532 |
| Has non-work income | –0.421 | 0.359 |  | 0.450 | 0.391 |
| Partner has non-work income | 0.961\* | 0.532 |  | 0.526 | 0.557 |
| Duration on income support | –0.019 | 0.015 |  | –0.036\*\* | 0.018 |
| Proportion of time on DSP individual worked | –0.881\* | 0.486 |  | –0.177 | 0.547 |
| Proportion of time partner worked | –0.732 | 0.569 |  | –1.433\*\* | 0.652 |
| Proportion of time had non-work income | 0.366 | 0.399 |  | –0.085 | 0.467 |
| Proportion of time partner had other income | –0.855 | 0.628 |  | –0.726 | 0.673 |
| State unemployment rate in year left DSP | 2.698\*\*\* | 0.194 |  | 2.904\*\*\* | 0.205 |
| Home owner | 0.999\* | 0.574 |  | 0.958 | 0.721 |
| Home purchaser | 0.865 | 0.663 |  | 0.186 | 0.895 |
| Home owner other | –0.946 | 1.020 |  | –0.169 | 1.226 |
| Private renter | 0.729 | 0.551 |  | 0.787 | 0.713 |
| Government renter | 0.924 | 0.708 |  | 0.768 | 0.877 |
| Paid board | 0.990 | 0.626 |  | 1.220 | 0.812 |
| Other rental | 0.602 | 0.562 |  | 1.011 | 0.724 |
| Inner regional | –0.278 | 0.266 |  | –0.228 | 0.314 |
| Outer regional | 0.368 | 0.320 |  | 0.426 | 0.392 |
| Remote | 0.630 | 0.735 |  | –0.976 | 0.958 |
| Very remote | 0.831 | 0.960 |  | 0.849 | 1.086 |
| Victoria | –0.368 | 0.277 |  | –0.761\*\* | 0.320 |
| Queensland | –0.178 | 0.286 |  | –0.782\*\* | 0.349 |
| South Australia | –1.200\*\*\* | 0.412 |  | –2.044\*\*\* | 0.508 |
| Western Australia | 1.806\*\*\* | 0.409 |  | 1.587\*\*\* | 0.448 |
| Tasmania | –3.948\*\*\* | 0.749 |  | –5.505\*\*\* | 1.010 |
| Northern Territory | –5.477\*\*\* | 0.912 |  | –5.299\*\*\* | 1.143 |
| ACT | 4.328\*\*\* | 0.951 |  | 4.195\*\*\* | 1.107 |
| Time off benefits (years) | –1.502 | 4.847 |  | –5.260 | 5.893 |
| Time off benefits squared/100 | –4.794 | 7.199 |  | 4.675 | 8.669 |
| Spline from half year duration | 14.806 | 14.648 |  | –8.551 | 17.510 |
| Spline from 10 months duration | –16.822 | 21.404 |  | 6.489 | 26.270 |
| Spline from 12 months duration | 7.296 | 15.520 |  | –0.977 | 19.414 |
| Spline from 22 months duration | –2.980 | 6.883 |  | –7.630 | 8.638 |
| Spline from 24 months duration | 2.567 | 5.029 |  | 6.023 | 6.258 |
| Constant | –11.231\*\*\* | 1.275 |  | –14.740\*\*\* | 1.475 |

Note: IS: income support. \**,* \*\* and \*\*\*indicate significant at the 10, 5 and 1 per cent levels respectively.

Source: Estimated from LDS data from January 1995 to June 2007.

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# Endnotes

1. There is a right censoring problem in that some of those not observed to have returned to the DSP or other income support payments by June 2007 will eventually do so, especially among the group who left the DSP closer to June 2007. To assess the impact of this issue on the figures, they were recalculated removing all individuals who left the DSP after December 2004. This had very little impact on the cumulative probabilities of returning to the DSP or other income support payments. Some 74 per cent of those who returned to the DSP payment did so within 12 months and 88 per cent returned within 24 months. [↑](#endnote-ref-1)
2. Cai et al. (2007) treat transitions off DSP as occurring only if no payment is made for seven fortnights. [↑](#endnote-ref-2)
3. There is a good argument that those who move onto the age pension should be excluded from the analysis that follows, since our interest in the employment of those on the DSP should focus only on the working age population. However, the age pension is such an important ’destination’ for DSP recipients that their exclusion might have provided a misleading picture of the path through welfare many DSP recipients follow. [↑](#endnote-ref-3)
4. In fact, it is not known whether those who left the DSP and never returned to welfare were alive in June 2007. In the results section, estimation strategies that aim to assess how robust the results are to this problem are described, along with their impact on the estimated results. [↑](#endnote-ref-4)
5. The survival function is related to the hazard function, which in this case is an estimate of the likelihood that individuals return to welfare at time *t* conditional on them having remained off benefits to time t. These are related functions (see, for example, Wooldridge 2002 or Cameron & Trivedi 2005). [↑](#endnote-ref-5)
6. Technically, Cox proportional hazard models and hazard models that allow the baseline hazard to be ‘piece-wise constant’—that is, to vary with duration off income support but to be constant within a set of pre-determined duration ranges—are estimated (see Wooldridge 2002 for a discussion of estimation of ‘piece-wise linear’ baseline hazards). [↑](#endnote-ref-6)
7. The pre-benefit exhaustion threshold points were allowed to vary in estimation, but this had no substantive impact on the results, so they are presented for knots at 10 and 22 months. See Greene (1997), for example, for a discussion of spline functions. Those implemented here were constructed so that the first derivatives of the function were continuous through the spline knots. [↑](#endnote-ref-7)