Final Report

Transitions of income support recipients with Incapacity Exemptions

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Summary

There are circumstances when a job seeker can be exempt from the Activity Test for a specified period of time. The use of Temporary Incapacity Exemptions (TIEs) by unemployment benefit (UB) recipients is the focus of this report, but we also look at the use of TIEs among individuals on Parenting Payments that are subjected to activity tests. UB recipients in this report consist of NewStart Allowance (NSA) and Youth Allowance –other (YAO) recipients.

We find that the main driving force for the time trends of TIE prevalence are the time trends for NSA recipients with TIEs, as the number of NSA recipients is much larger than the number of YAO recipients.

The number of UB recipients with TIEs is, overall, declining over time. Four distinct periods are identified:

July 2002 to July 2003	: number of UB recipients with TIEs is declining
July 2003 to May 2006	: number of UB recipients with TIEs is stable
May 2006 to May 2008	: number of UB recipients with TIEs declines again
May 2008 – onwards	: number of UB recipients with TIEs is increasing

The upward trend from May 2008 reflects the impact of the Global Financial Crisis (GFC) and the subsequent global economic slowdown.

The *proportion* of UB recipients with a TIE follows the same pattern as the number of UB recipients with a TIE, with one important exception: the proportion of UB recipients with a TIE keeps declining uninterrupted from May 2006 onwards. That is, there is no increase in the proportion of UB recipients with a TIE despite the increase in the number of UB recipients with a TIE from May 2008 onwards.

The official rule set by Centrelink is that the maximum duration of a TIE is 13 weeks. To investigate the incidence of consecutively granted TIEs ("extensions"), we combine such consecutive spells and treat them as a single TIE spell.

The distribution of TIE spells is dominated by short spells. More than 80% of all spells last 6 months or less. About 12% of spells last between 6 months and one year with a further 5% lasting more than one year. The proportion of TIEs lasting one year or more peaked in 2003 and has since declined. TIE spells with durations of 6 months or more, too, declined after peaking in 2005.

As for timing of TIEs, a high proportion of the TIE spells starts at the beginning of the UB spell (around 25-30%) with another 10% of spells starting fairly close to the commencement of the UB spell. There is also a large portion of TIE spells (around 30%) that start after the recipient has been on UB for a year or more.

As for the TIE incidence, on average, around 20% of the UB spells are observed to have received at least one TIE at some point. Furthermore, the greater the number of UB spells an individual has the more likely the individual is observed to have received a TIE.

A comparison of characteristics between UB recipients with and without a TIE showed there are no major differences between the two groups, except for gender, age and partner status.

- A higher proportion of men have had multiple TIE spells, relative to women

- UB recipients without TIEs are overrepresented by individuals 25 years of age or younger, compared to UB recipients with at least one TIE

- Among those with multiple TIE spells, singles are overrepresented.

We track UB customers' benefit receipt status at 6 months, 12 months, and then every year up to 4 years and distinguish those outcomes by the number of TIE spells customers have within the first 6 months of their UB spell. The main insights that we find are:

- Customers with no TIE experience leave income support at a higher rate than those with a TIE experience. For example, at the 6-month follow-up point, 36% of the former group have left income support, compared to the equivalent figure of 27% for the latter group.

- The lower rate of leaving income support for the latter group is not translated into their rate of remaining on UB: the rates of staying on UB for both groups are fairly similar. Rather, the difference is observed in the rate of transferring

to other payments, especially to the DSP program. Those who had received a TIE were much more likely to have transferred to DSP, compared to those who did not.

Economic modelling described the probability, at the one-year follow-up mark, to be observed on UB, on DSP, on any other income support payment, or off income support. It showed:

- Experiencing a TIE in the first 6 months of an UB spell is associated with a reduction of 10 percentage points in the probability of having left income support one year later.

- Having one TIE spell (relative to none) in the first 6 months of an UB spell increases the probability of being observed on DSP at the 12 month follow-up by 3 percentage points. Having multiple TIE spells increases the probability of remaining on UB by 7.3%.

- When we restrict our sample for the analysis to UB spells that lasted 12 months or more, having a TIE spell during the initial 12 month since UB spell commencement reduced the probability of being off income support at the one-year follow-up by about 6 percentage points. This is significantly smaller than the comparable effects for the case of the initial UB spell period of 6 months.

1. Introduction

Income support recipients on activities-tested payments are able to obtain an exemption from Centrelink if they are unable to meet their participation (i.e. activity test) requirements. While each income support payment may have specific types of exemptions, the research presented in this report is restricted to temporary incapacity exemptions (TIEs) granted to income support customers on the following payment types: Unemployment Benefit (UB) and Parenting Payments (PP) that are subject to activity tests. UB includes Newstart Allowance (NSA) and Youth Allowance Other (YAO) and Parenting Payments (PP) that are subject to activity tests include Parenting Payment Single (PPS) and Parenting Payment Partnered (PPP).

Specifically, this report answers the following three questions:

[1] What are the characteristics of recipients that are granted TIEs?

[2] What is the likelihood of recipients granted a TIE ending up more isolated because of transfers to income support payment with no participation requirements?

[3] What are the time trends in relation to TIE prevalence?

The report proceeds as follows. Section 2 outlines the background information on activity agreements and temporary incapacity exemptions, and discusses the welfare to work changes for parents in relation to participation requirements. In section 3, we provide a brief description on how the RED data is used in the research and our approach to sample selection. Section 4 present descriptive results and Section 5 outlines our modelling approach and presents findings from the estimations. Section 6 concludes.

2. Background

2.1. *Activity Agreements*

Up until 1 July 2009, certain customers were required to enter into an Activity Agreement (AA) with an employment service provider in order to continue to receive their payments.[1]

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[1]   The AA has since been replaced by the Employment Pathway Plan (EPP). Since our time span of the data in this report is pre-1 July 2009 we will limit our discussion to the role of the AA.

Customers were expected to undertake the compulsory activities included in their AA. If they failed to undertake the activities as outlined in the agreement, a participation failure or serious failure may have been committed.

The AA contained both compulsory activities that the job seeker had to complete as well as voluntary activities that the job seeker chose to undertake. When the AA was negotiated, all activities were considered to ensure that the final agreement was appropriate for the customer. All activities selected for inclusion in the AA were presented to the customer in a consistent format, which clearly identifies compulsory and voluntary requirements. The AA was printed, signed and given to the customer each time it was negotiated or updated. The key features of an AA were:

- o Centrelink added activities that a job seeker must complete to satisfy the Activity Test or their participation requirements

- o Job Network Members (JNMs) added activities to assist the job seeker in finding work

- o Community Work Coordinators (CWCs) added Work for the Dole (WFD) and Community Work requirements

- o Disability Employment Network (DEN) providers added activities relating to disability

- o Providers of other programs such as Personal Support Programme (PSP), Vocational Rehabilitation Services (VRS) and Job Placement, Employment and Training (JPET)

2.2. *Activity Test Exemptions*

Job seekers in receipt of NSA, Youth Allowance (YA) or Parenting Payment (PP) with a participation requirement are required to participate in the Activity Test to remain qualified for payments. There are circumstances when a job seeker can be exempt from the Activity Test for a specified period of time. The full details of different customers being exempt based on specific circumstances will not be discussed here[2], with one exception (as it is the focus of this report): Temporary Incapacity.

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[2]   The Social Security Guide, section 3.2.12, provides specific details on the various types of activity test exemptions, but the exemptions are granted for: Temporary Incapacity; Pregnancy; Remote Areas; Special

2.3. *Temporary Incapacity – Activity Test Exemptions*

A job seeker claiming or receiving NSA, YA, PP, or in some cases Special Benefit (SpB), may request an exemption from the Activity Test/participation requirements by lodging an 'approved' medical certificate. For the purposes of an exemption from the Activity Test, a person has a temporary incapacity for work or study if they have an illness, injury or disability that is, or is likely to be, of a temporary[3] nature and which prevents them from:

- undertaking work of eight hours or more in a week at or above the relevant minimum wage, which the person could reasonably be expected to do if they were not incapacitated, or

- unable to continue the course of study they were doing before they became incapacitated

And:

- they are unable to undertake another activity deemed suitable by the Secretary, and

- they provide a medical certificate that states

    - the medical practitioner's diagnosis,

    - the medical practitioner's prognosis that they are incapacitated for work or study, and

    - the period of the incapacity

And:

- The incapacity was not brought about with the view to obtaining an exemption from the activity test.

Circumstances; Principal Carer Parents with Special Family Circumstances (Automatic and Case-by-Case); and Partial Capacity to Work

[3]   An incapacity for work or study is considered to be temporary if it is likely that the customer will be able to return to work or study within the next two years. However, it is generally expected that a customer will be able to return to work, or look for work, in a shorter period of time.

Where the customer meets the eligibility criteria for a temporary incapacity exemption, the incapacity exemption period will be for the duration stated on the medical certificate or 13 weeks from the start date of the medical certificate (whichever is shorter).

Note that lodgement of a medical certificate does not automatically result in an exemption being granted. If the customer's capacity to work is eight hours or more per week, but less than 30 hours per week, an incapacity exemption is not granted. This is because they can satisfy Activity Test/participation requirements, but may have required a modified AA that takes into account their current circumstances. Similarly, a customer may be unable to work at least 8 hours, yet not qualify for an incapacity exemption because they are still able to participate in a suitable activity, i.e. take part in services or other activities to help them prepare for a job. Where an exemption is not granted (despite the medical certificate lodgement) the customer will be subject to Activity Test/participation requirements, taking the customer's current work capacity into consideration.

2.4. *Exemption greater than 26 weeks or medical condition exceeds 13 weeks*

If a customer is about to reach more than 26 weeks on an incapacity exemption or their medical condition will exceed 13 weeks, and they are:

- o undergoing or recovering from radiotherapy or chemotherapy

- o about to undergo major surgery such as joint replacement, organ transplant or heart surgery

- o recovering from major surgery such as joint replacement, organ transplant or heart surgery,

the conversation had with the customer will be documented as to the expected date for surgery or the date when the surgery took place; anticipated recovery time frame and dates for follow-up as necessary.

2.5. *Continuation of exemption from Activity Test/participation requirements*

The period of exemption from Activity Test/participation requirements can be extended if there are no changes to the customer's circumstances on which the initial period of exemption was granted. That is:

o the new medical certificate must show that the job seeker is temporarily incapacitated for all work (8 hours per week or more), and

o The job seeker is still unable to undertake any suitable activity that will increase their level of participation.

Customers who lodge a medical certificate will not automatically have an exemption from Activity Test/participation requirements approved; rather their capacity to work or participate in a suitable activity is re-assessed. An assessment of the customer's work capacity is required to inform appropriate intervention and support necessary to address the person's barriers to participation if a further exemption based on the new medical certificate would mean that the job seeker will have a total of more than 26 weeks incapacity exemption in a 12-month period (including future periods). If available, a current and valid JCA should be used for this. If there is no current and valid assessment, a referral for a JCA must be made.

2.6. *Welfare to Work changes for parents*

Building on the previous policy changes introduced as part of Australians Working Together and information gathered from consultations and pilot programs, the Australian Government in July 2006 introduced comprehensive changes to the welfare system for working age Australians, to bring it more in line with community norms and the changed economic conditions. Parenting Payment remained available to eligible parents with children aged up to 6 years of age. Parents with a youngest child aged less than 6 years of age did not have any job search requirements. However, once their youngest child was school-aged parents were generally considered to have capacity to engage with the labour market on a part-time basis. Under Welfare to Work, principal carer parents who claimed PP on or after 1 July 2006 received this payment until their youngest child turned 6 (if partnered) or 8 (if single). After this time, they needed to apply for another income support payment (typically NSA or Austudy) and meet part-time participation requirements. Both single and partnered parents had part-time participation requirements once their youngest child turned 6.

Parents who were receiving PP before 1 July 2006 continued to receive their payment until their youngest child turned 16, as long as they remained eligible. From 1 July 2007, parents from this 'grandfathered' group with a youngest child 7 and over were required to meet part-time participation requirements.[4]

Parents with participation requirements did not have to accept jobs that were unsuitable. For a job to be considered suitable, parents required access to appropriate care and supervision for their children at the times when they would be required to undertake the work. Further, they were not required to accept or continue in a job if the principal carer parent was not at least $50 a fortnight better off after the costs of employment such as child care were taken into account (compared to not working), or if travel time to work was more than 60 minutes each way (including the time to drop a child at child care or school) or was too expensive.

To summarise, principle carers whose child is less than 6 years of age never have a participation requirement. Customers who came onto PP on or after 1 July 2006 had a participation requirement as soon as their youngest child turned 6 years of age. Furthermore, single customers would transfer to another income support payment (typically NSA or Austudy) once their youngest child turned 8 years of age. Partnered customers would transfer to another income support payment (typically NSA or Austudy) once their youngest child turned 6 (in effect their participation requirement when their youngest child turns 6 coincides with their ineligibility for PP).

Customers who were receiving PP before 1 July 2006 could stay on PP until their youngest child turned 16 years of age. However, from 1 July 2007 (a year after the changes) this grandfathered group had a part time requirement once their youngest child turned 7 years of age.

3. Data and definitions

The data used in this report come from the Research and Evaluation Dataset (RED), extracted in August 2009. The data period ends in 30 June 2009 and in this paper, we focus our analysis on the period from 1 July 2002 to 30 June 2009 for the UB sample and 1 July 2006 to 30 June

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[4] Protections were in place for parents in certain groups who did not have the capacity to engage with the labour market. Exemptions were available for registered and active foster carers, relatives caring for a child under the family law order, those undertaking home schooling, distance education or those with a large family (four or more children aged under 16). All single parents on NSA who were exempt from participation requirements due to the above reasons received a maximum allowance rate equivalent to the Parenting Payment single rate.

2009 for the PP sample. We will first discuss the UB sample before discussing the construction of the PP sample.

The main tables used are the BENHIST and MEDICAL_DETAILS tables. As a first step, and in order to focus on the first main research question outlined in Section 1, we took a 1% random sample of the pool of customers who, at some point during the time span from July 2002 to June 2009, were in receipt of UB. This resulted in a sample of 28,934 individuals denoted as the '1% UB Sample'. Next, using the table MEDICAL_DETAILS, we constructed episodes of TIEs using the start and end dates of the medical certificates denoted by 'smedc_cert_start_date' and 'smedc_cert_end_date', respectively. Both the UB episodes and TIE episodes were merged into a single file so that for each fortnight that a customer was in receipt of UB, it would be known if he/she was also granted a TIE or not. In a final step some personal characteristics from the CUSTOMER, PARTNER, ISS CHILDREN, and POSTCODE tables were merged into this file for the descriptive and multivariate analyses. All tables, figures and results from economic modelling are based on this 1% UB Sample.

For our PP sample we use data from the post Welfare to Work (WtW) period 1 July 2006 to 30 June 2009. Information on whether individuals on parenting payments are subject to activity tests or not is derived from the TARGPCAR table using the variable pc_subcat_code. This variable identifies, for each spell of parenting payment, the two aspects that determine whether the individual has an activity test requirement or not: whether the individual was a new entrant on this type of welfare after the implementation of the WtW policy and the age group that their youngest belong to.

Similar to the procedure used for UB recipients, but catering for the fact that a much lower number of individuals would have been on activity tested Parenting Payments (ATPP) relative to UB, we took a 10% random sample of primary care applicants who had been on either Parenting Payment Single (PPS) or Parenting Payment Partnered (PPP) at some point during the period 1 July 2006 to 30 June 2009. This resulted in a sample of 83,884 individuals, among which 32,237 individuals had been subjected to activity tests at some point during the observation window. The rest of the data construction procedure proceeded in an identical manner to that already discussed for the UB section. That is, details from the BENHIST, MEDICAL_DETAILS, CUSTOMER, PARTNER, ISS CHILDREN, and POSTCODE tables were merged into the file containing PP episodes to create a dataset containing fortnightly information on individuals' characteristics, income support and TIE status.

4. Descriptive Results

4.1. *Time trend in use of TIEs*

Figure1 1 below shows how the number of UB recipients in our sample who were observed to use TIEs changes over time. Naturally, because we look at absolute numbers, the time trend is greatly influenced by the business cycle. There are two key features associated with the figure. First, the number of recipients with TIEs is declining over time. Specifically, there appear to be four distinct periods; an initial period from July 2002 to July 2003 where the incidence of TIE is declining; a second period between July 2003 to May 06 where the numbers have remained quite stable; a third period from May 2006 to May 2008 where the downward trend starts again, but at a slower rate relative to the period from July 2002 to July 2003; a fourth and final period from May 2008 onwards that shows an upward trend. The upward trend from May 2008 most likely reflects the impact of the Global Financial Crisis (GFC) and the subsequent global economic slowdown.

Second, the vast majority of UB recipients with TIEs are those who were receiving NSA. Furthermore, the numbers of YAO recipients with TIEs are relatively stable across time and thus the observed fluctuations in the overall number of UB recipients with TIEs are driven mostly by the time trends for NSA recipients with TIEs.

As noted, the number of UB recipients with TIEs depends on the general state of the economy. We therefore also create a relative measure of TIE use among the existing UB customers. Figure 2 reports the proportion of UB recipients who, in any given fortnight that they are on UB, also have a TIE. This proportion is also on the decline. At the beginning of our observation period (July 2002), the proportion is close to 15% whereas the corresponding figure at the end of the observation period is around 8%. The trend can be broken up in the same manner as for Figure 1 with one exception: although from May 2008 the number of UB recipients with TIEs increases, the *proportion* of UB recipients with a TIE keeps declining uninterrupted. Figure 2 also shows that the proportion of recipients receiving TIEs among NSA customers is much higher, compared to the proportion for YAO customers.

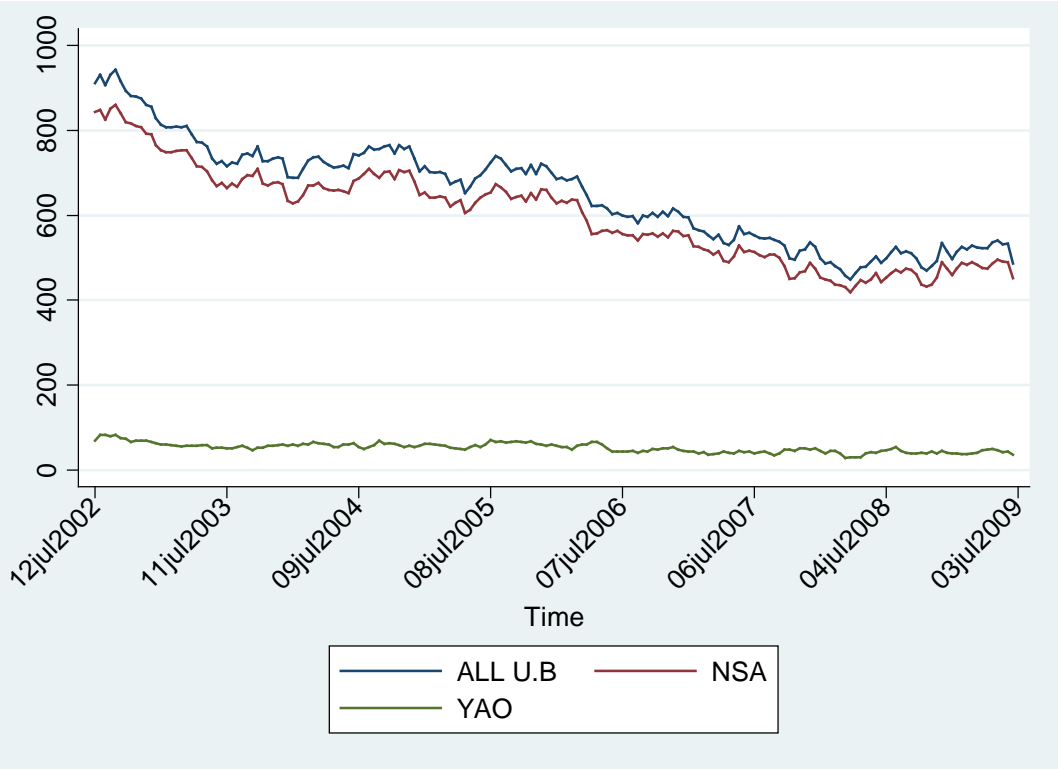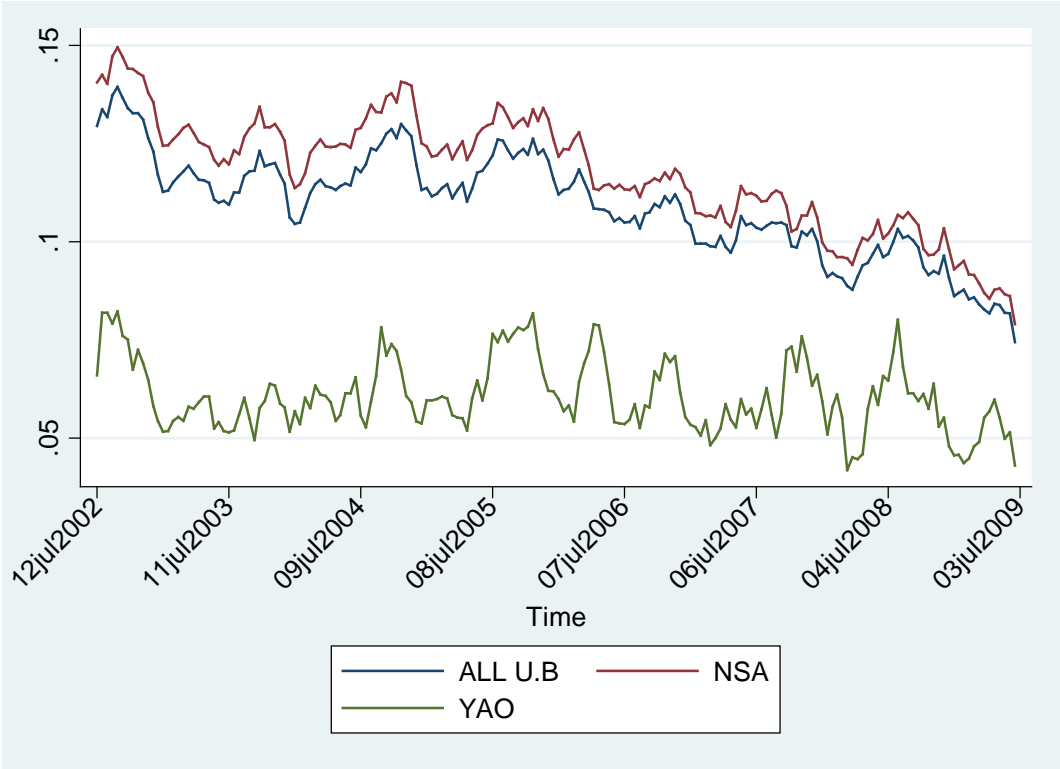Figure 1: Number of UB recipients who are with TIEs over time (UB sample)

Figure 2: Proportion of all existing UB recipients with TIEs over time (UB sample)

Figures 3 and 4 show the time trends of the use of TIEs among activity tested PP recipients. They correspond directly to Figures 1 and 2 for the UB sample. Figure 3 suggests three distinct time periods: an initial period between July 2006 and July 2007 characterised by a very low incidence of TIE; a short period between July 2007 and Jan 2008 where the number of activity tested PP recipients with TIEs is rising sharply; and a final period from January 2008 onwards that shows that the incidence of TIE is stabilising and in fact has a slightly downwards trend.

The low incidence of TIE between July 2006 and July 2007 stems from the fact that very few PP recipients would have been subject to activity tests. In fact, the only group that were subject to participation requirements were those who came onto PPS on or after 1 July 2006 with their youngest child aged 6 years or older, but less than 8 years of age. Others were either ineligible for PP or grandfathered and hence only subject to a participation requirement from 1 July 2007 at the earliest.[5] This also explains the steep increase in the number of

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[5] Those on PP before 1 July 2006 were grandfathered and not subject to participation requirements until 1 July 2007 at the earliest. For those coming onto income support on or after 1 July 2006, single mothers with a youngest child 8 years or over were not be eligible for PP, and neither were partnered mothers with a youngest child 6 years or over. Principle carers with a youngest child under 6 years of age are always be eligible for PP when coming onto income support on or after 1 July 2006, but not subject to a participation requirement. This

recipients with TIEs from 1 July 2007 onwards as those PP recipients with children aged 6 or over that were grandfathered now become subject to participation requirements. However, the overall pattern of TIE incidences over time is very much driven by PPS.

Figure 4 shows the proportion of TIE use among all ATPP recipients. Because the ATPP is dominated by PPS the lines for all PP and PPS are very close. Note that they do (and should) overlap for the period 1 July 2006 and 1 July 2007 because no PPP recipient could be subject to participation requirements during that time frame as explained when discussing Figure 3 (specifically in footnote 5). However, one has to keep in mind that during this period there are only very few PPS recipients that are subject to activity tests and that as a result the proportion with a TIE can be quite volatile.

Figure 3: Number of activity tested PP recipients who are with TIEs over time (ATPP sample)

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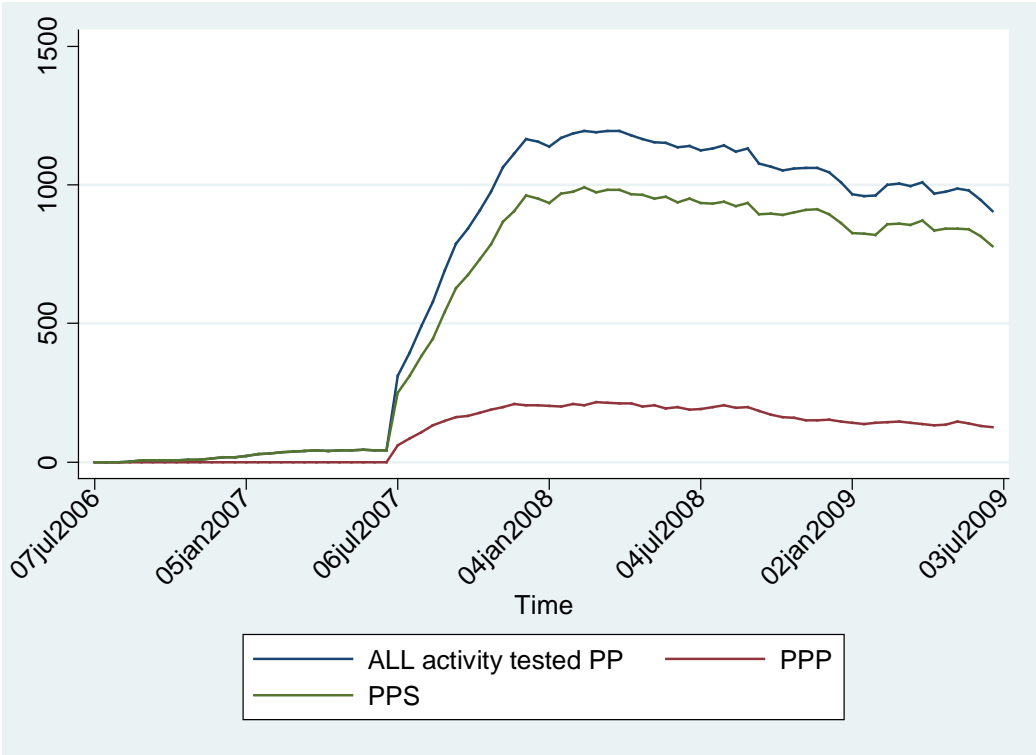
leaves single mothers on PPS with a child between 6 and 8 years of age, and who were not grandfathered, as the only group on PP subject to participation requirements for the period 1 July 2006 to 1 July 2007.

Figure 4: Proportion of all existing activity tested PP recipients with TIEs over time (ATPP sample)
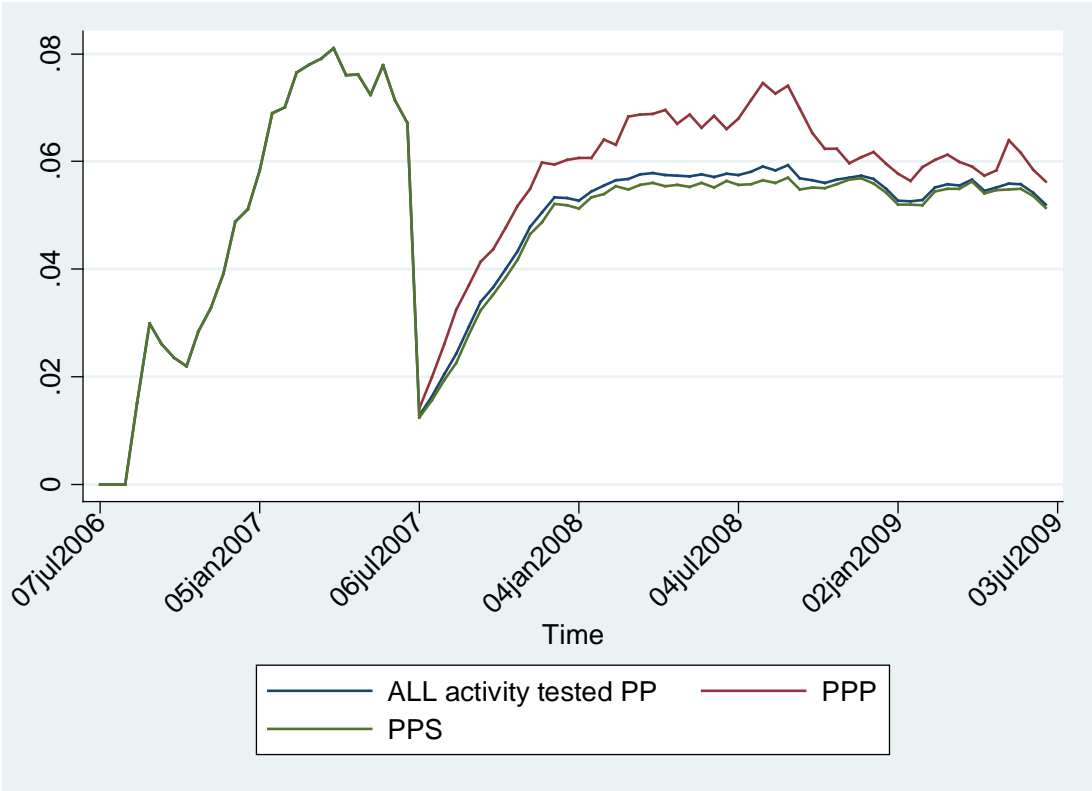
4.2. *The Spell Patterns of UB and TIEs*

Table 1 describes the distribution of the UB spells commenced within the period starting from July 2002 to December 2008. We produce this distribution of spell lengths by year of spell commencement. It is important to note that for some of the UB spells starting in 2006 or later, it is not possible to determine their duration since the individuals are still receiving UB at the end of the observation window. These spells are identified by the missing cells in the table. They are termed right censored spells in which the outcome, exit from unemployment benefits in this case, is not yet observed.

As it is shown in the table, the spell distribution is very stable across the years. The distribution is dominated by short spells, with close to three quarters of all spells lasting 6 months or less. About 12% of spells last between 1 and 2 years with a further 10% lasting more than 2 years.

Table 1: Distribution of UB spell durations by year spell started (UB sample)

Duration	UB spell started in						
	2002	2003	2004	2005	2006	2007	2008
less one month	10.55	9.42	9.14	9.33	9.52	10.59	10.51
1-3 months	24.00	24.42	23.04	23.65	24.4	23.52	21.33
3-6 months	23.34	25.04	25.59	24.86	26.26	26.33	22.58
half to one year	19.83	19.14	19.99	20.26	18.29	17.82	-
1-2 years	12.01	12.42	12.23	12.28	(a)-	-	-
2years+	10.27	9.56	10.02	9.62	-	-	-
Total	3,904	6,942	6,609	6,432	6,062	5,864	6,062

Notes: (a) the missing cells relate to those spells starting later in the observation period for which the duration interval cannot be determined due to right censoring (i.e. they were still ongoing when the observation period ended).
Multiple spells for the same customer are treated as individual spells.

Table 2 below describes the distribution of the TIE spells commenced between July 2002 and December 2008 for the UB sample. It is important to note that a single UB spell can have multiple TIE spells, and where there are multiple TIEs granted consecutively they are treated as a single continuous TIE spell for the purpose of duration determination. This allows us to obtain an estimate of the extent to which customers make use of consecutive exemptions. Hence, the duration of a TIE spell can be much larger than the maximum duration of 13 weeks.

Table 2 shows that there are a significant number of individuals who have TIE spells with durations that are greater than 13 weeks, suggesting that many of them have applied for multiple TIEs (extensions). The distribution of the TIE spells that commenced within our observation window is dominated by short spells, with around 80% of all spells lasting 6 months or less. About 12% of spells last between 6 months and one year with a further 5% lasting more than one year. With regard to time trends, the spell distribution across years is more or less constant, albeit that the proportion of TIEs with a duration of one year or more peaked in 2003 and has since declined. Similarly, spells lasting 6 months or more have declined after peaking in 2005.

Table 2: Distribution of TIE spell durations by year TIE spell started (UB sample)

Duration	TIE spell started in						
	2002	2003	2004	2005	2006	2007	2008
Less then one fortnights	11.22	10.55	10.05	8.33	8.42	10.35	10.4
2 fortnights	13.82	11.86	13.73	12.65	13.76	13.3	14.02
3 fortnights	12.3	11.71	11.2	11.91	12.24	13.41	11.37
4 fortnights	6.73	7.47	7.66	7.84	7.8	8.34	8.88
5 fortnights	6.37	6.92	7.85	7.94	8.22	8.45	7.26
6 fortnights	5.83	4.8	4.59	5.83	6.02	5.89	7.2
7 fortnights	9.25	10.25	9.47	9.71	10.05	10.41	10.5
8 fortnights	6.55	7.32	7.08	7.3	7.17	6.92	7.31
9 fortnights	2.24	2.78	2.49	2.6	2.51	1.69	2.98
10 fortnights	2.06	2.47	1.91	2.4	2.15	2.56	2.65
11 fortnights	1.71	1.31	1.53	1.52	2.09	1.42	1.68
12 fortnights	2.33	1.82	2.25	1.72	2.15	2.23	1.95
13 fortnights	1.71	2.07	1.96	2.16	2.51	2.18	(a)-
half to one year	12.12	11.96	12.39	13.58	11.15	10.52	-
one year+	5.75	6.71	5.84	4.51	3.77	2.34	-
Total number of spells	1,114	1,981	2,090	2,040	1,911	1,835	1,847

Notes: (a) the missing cells relate to those spells starting later in the observation period for which the duration cannot be determined due to right censoring (i.e. they were still ongoing when the observation period ended).

Consecutive TIE spells (i.e. extensions) are treated as a single TIE spell (hence durations that exceed 13 weeks).

Table 2b describes the distribution of the TIE spells commenced between July 2006 and December 2008 for our ATPP sample. Due to the low numbers of ATPP recipients (and hence TIEs) in 2006 we combine the TIE spells that start in 2006 and 2007. For those TIE spells the most common durations are 2 or 3, 7 or 8, or more than 13 fortnights.

Table 2b: Distribution of TIE spell durations by year TIE spell started (ATPP sample)

Duration	TIE spell started in	
	2006-2007	2008
Less then one fortnights	7.55	11.09
2 fortnights	10.08	15.63
3 fortnights	10.13	12.71
4 fortnights	6.36	8.17
5 fortnights	6.76	7.77
6 fortnights	5.81	5.78
7 fortnights	12.32	8.39
8 fortnights	11.33	8.73
9 fortnights	2.38	2.33
10 fortnights	2.83	1.99
11 fortnights	1.64	1.68
12 fortnights	2.48	1.8
13 fortnights	1.99	1.15
half year +	18.33	(a)-
Total number of spells	2013	3219

Notes: (a) the missing cells relate to those spells starting later in the observation period for which the duration cannot be determined due to right censoring (i.e. they were still ongoing when the observation period ended).

Consecutive TIE spells (i.e. extensions) are treated as a single TIE spell (hence durations that exceed 13 weeks).

Table 3: 'Timing' of TIE spells: Commencement of TIE spell relative to the start of an UB spell (UB sample)

TIE spell started….:	TIE spell started in						
	2002	2003	2004	2005	2006	2007	2008
At the start of UB spell	30.70	26.75	25.65	26.18	25.64	25.34	27.02
2 fortnights in	5.83	5.55	5.31	5.39	4.87	5.78	5.68
3 fortnights in	3.14	3.43	2.92	3.28	3.09	3.05	2.54
4 fortnights in	2.87	2.37	2.01	2.35	3.14	2.51	2.87
5 fortnights in	1.62	2.47	2.25	2.11	2.46	2.51	2.17
6 fortnights in	2.60	2.88	1.87	2.35	2.35	1.91	2.17
3-6 months in	10.77	11.46	11.87	11.37	11.51	12.53	12.13
half to one year in	12.84	13.58	15.65	15.59	15.12	13.62	13.05
one year+ in	29.62	31.5	32.49	31.37	31.82	32.75	32.38
Total number of spells	1,114	1,981	2,090	2,040	1,911	1,835	1,847

Table 3 shows the timing of TIE spells within an UB spell. A high proportion of the TIE spells started right at their UB spell commencement (around 25-30%) with another 10% of spells starting fairly close to the start of the UB spell. However, there is a large portion of TIE spells associated with long-term unemployed individuals: 30% of the TIE spells occurred one year or more after the commencement of the UB spell.

Table 3b shows the corresponding statistics for our ATPP sample. The vast majority (close to 80%) of TIE spells started three to six months into the ATPP spell for those ATPP spells that started in 2008.

Table 3b: 'Timing' of TIE spells: Commencement of TIE spell relative to start of an activity tested PP spell (ATPP sample)

	TIE spell started in	
TIE spell started….:	2006-2007	2008
At the start of activity tested PP spell	16.79	3.67
2 fortnights in	7.05	1.43
3 fortnights in	6.71	1.96
4 fortnights in	28.81	6.4
5 fortnights in	39.59	9.79
6 fortnights in	0.84	47.31
3-6 months in	0.2	29.45
half to one year in	16.79	3.67
one year+ in	7.05	1.43
Total number of spells	2,013	3,219

Since some of the TIE spells are relatively long, and it is likely that many UB spells are associated with multiple incapacity exemption spells, another measure for the concentration of the use of TIEs is the proportion of UB spells that have at least one TIE spell. Table 4 hence documents the proportion of the UB spells that have received at least one TIE spell during our observation period, by UB spell length. It clearly shows that the shorter completed UB spells are the less likely they are associated with receiving a TIE. On average, around 20% of the UB spells starting during the observation period have received at least one TIE.

Table 4b repeats the analysis for our ATPP sample. Here, too, the longer an ATPP spell is the more likely it has had experienced at least one TIE spell. On average, about 16% of all ATPP spells that commenced in 2006 and 2007 have experienced at least one TIE spell.

Table 4: Proportion of UB spells with at least one TIE spell by UB spell length and starting year (percentage, UB sample)

UB spell length	UB spells started in						
	2002	2003	2004	2005	2006	2007	2008
less than 1 month	6.6	5.8	8.3	5.2	7.1	6.8	6.0
1-3 months	8.9	7.8	8.1	8.9	8.0	7.9	8.8
3-6 months	14.8	13.0	14.2	13.1	14.6	14.1	15.4
half to one year	21.1	22.9	22.8	24.1	23.5	27.9	25.1
1-2 years	33.9	34.2	32.9	38.5	36.2	-	-
2 years+	52.9	52.3	52.1	54.8	51.3	-	-
Total	20.0	19.3	20.1	20.7	20.1	-	-

Table 4b: Proportion of activity tested PP spells with at least one TIE spell by activity tested PP spell length and starting year (percentage, ATPP sample))

PP spell length	PP spell started in	
	2006-2007	2008
less than 1 month	2.6	0.7
1-3 months	5.0	5.0
3-6 months	7.0	7.4
half to one year	11.7	7.0
1-2 years	17.0	10.7
2 years+	21.8	-
Total	15.9	-

4.3. *Distribution of the number of UB and TIE spells per individual*

Table 5 shows the distribution of the number of UB spells that customers have during the observation window, including spells already in progress at the beginning of the observation period. Roughly speaking, close to 60 percent of customers have a single UB spell, which means that 40% of customers have multiple spells.

Table 6 provides the distribution of the number of TIE spells that UB customers have during the period. Around 70% individuals did not receive any TIE. Among the individuals who have been granted an exemption, many individuals having multiple spells (around 10% of all individuals).[6]

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[6] Recall that consecutive TIE spells are treated as a single TIE spell. Hence multiple TIE spells reflect TIE spells that are non-consecutive.

Table 6b reports the distribution of the number of TIE spells that activity tested PP customers have. There are very few individuals having multiple TIE spells and a larger proportion, close to 85%, have no TIE at all.

Table 5: Distribution of the number of spells per individual (UB sample): UB spells

Number of spells observed during the observation period	Proportion (%)
Just 1 spell	57.06
2 spells	22.2
3 spells	10.64
4 spells or more	10.1
Total number of individuals	28,934

Table 6: Distribution of the number of spells per individual (UB sample): TIE spells

Number of spells observed during the observation period	Proportion (%)
0 spell	69.81
1 spells	18.77
2 spells	6.53
3 spells	2.56
4 spells or more	2.32
Total number of individuals	28,934

Note: Consecutive TIE spells are treated as a single TIE spell. Hence multiple TIE spells reflect TIE spells that are non-consecutive.

Table 6b: Distribution of the number of spells per individual (ATPP sample): TIE spells

Number of spells observed during the observation period	Proportion (%)
0 spell	84.65
1 spells	11.57
2 spells	2.92
3 spells	0.66
4 spells or more	0.19
Total number of individuals	32 237

Note: Consecutive TIE spells are treated as a single TIE spell. Hence multiple TIE spells reflect TIE spells that are non-consecutive.

To see how the number of UB spells relates to the number of TIE spells, Table 7 cross-tabulates Tables 5 and 6. The main insight from this table is that the higher the number of UB spells an individual has, the more likely the individual is observed to have received a TIE, and the greater the number of TIE spells the individual has. For example, 25% of individuals who had only a single unemployment benefit spell (first row of numbers in Table 7) over the period had at least one TIE spell. The proportion of individuals with TIE spells among those who have multiple UB spells is clearly higher, and many of those who received TIEs have multiple TIE spells.

Table 7: Joint distribution of the number of UB and TIE spells per individual (row percentages, UB sample)

Number of UB spells	Number of TIE spells					
	0 spell	1 spell	2 spells	3 spells	4+ spells	No. of obs.
Just 1 spell	75.76	17.93	3.80	1.30	1.21	16,510
2 spells	67.01	18.89	8.73	3.00	2.37	6,423
3 spells	59.29	20.60	10.66	5.49	3.96	3,078
4 spells or more	53.44	21.38	12.73	5.64	6.81	2,923
Total	69.81	18.77	6.53	2.56	2.32	28,934

Note: Consecutive TIE spells are treated as a single TIE spell. Hence multiple TIE spells reflect TIE spells that are non-consecutive.

Table 8 below provides information on the extent of welfare reliance. The top panel of the table shows the average number of fortnights each individual has spent on UB payments up to July 2009. The second panel shows the average number of fortnights each individual has spent on all income support payments, including UB payments. The final panel reports the summary statistics on the (cumulative) number of fortnights each individual has received a TIE during our observation period. The summary statistics are disaggregated by the combination of the number of UB spells (first column) and TIE spells (top row) individuals had during the observation window to reveal patterns of welfare reliance with regards to the number of UB and TIE spells.

It is clear that the time spent on UB payments increases with the number of TIE spells, holding the number of UB spells (first column) constant. That is, reading the top panel across the rows shows that the average number of fortnights on UB increases. With regard to the number of UB spells, on average, the more UB spells one has, the longer one has been on UB. That is, reading down the last column in the top panel shows that the average number of fortnights on UB increases. However, when disaggregating by the number of TIE spells, this

positive correlation only holds for those who have at most one TIE spell. In particular, the groups that have 2 or 3 TIE spells do not show any clear patterns, while the pattern is actually reversed for the group that have 4 or more TIE spells. That is, for the group with 4 or more TIE spells (second last column, top panel) more UB spells is associated with less total fortnights on UB. The average time on all income support payments (including UB) (the second panel) reveals similar patterns as the results above. Very similar patterns are also found for the case of the total number of fortnights with a TIE, which are reported in the third (and last) panel of the table.

Table 8: The extent of welfare reliance, and time with a TIE by the number of UB and TIE spells an individual experienced between 2002 and 2009 (UB sample)

Number of UB spells		Number of TIE spells*					
		0 spell	1 spell	2 spells	3 spells	4+ spells	All
		Total of time (fortnights) on UB payments[a]					
Just 1 spell	mean	38.8	66.0	127.4	172.1	222.5	51.0
	std. err.	(61.7)	(82.0)	(102.5)	(111.7)	(102.5)	(75.5)
	no. of obs.	12508	2960	628	215	199	16510
2 spells	mean	60.8	86.4	111.9	139.1	210.1	76.0
	std. err.	(69.9)	(84.0)	(89.1)	(84.6)	(105.6)	(81.3)
	no. of obs.	4304	1213	561	193	152	6423
3 spells	mean	83.0	107.3	116.1	135.1	193.3	98.8
	std. err.	(78.4)	(86.7)	(78.9)	(81.7)	(91.4)	(84.7)
	no. of obs.	1825	634	328	169	122	3078
4 spells or more	mean	106.2	133.3	131.8	159.0	172.5	122.8
	std. err.	(73.9)	(80.2)	(82.1)	(76.7)	(80.2)	(79.6)
	no. of obs.	1562	625	372	165	199	2923
All	mean	52.7	83.1	121.7	152.2	199.6	68.9
	std. err.	(69.4)	(85.9)	(91.2)	(92.2)	(97.1)	(81.9)
	no. of obs.	20199	5432	1889	742	672	28934
		Total of time (fortnights) on all IS payments[b]					
Just 1 spell	mean	80.0	152.1	220.8	266.6	301.1	103.4
	std. err.	(113.2)	(141.0)	(141.5)	(139.3)	(134.3)	(129.2)
2 spells	mean	94.2	139.4	175.7	218.1	267.1	117.6
	std. err.	(105.7)	(121.2)	(124.2)	(126.3)	(123.6)	118.4
3 spells	mean	110.2	143.2	162.0	187.7	248.6	132.2
	std. err.	(103.9)	(111.5)	(106.7)	(112.9)	(119.8)	(112.0)
4 spells or more	mean	126.0	162.2	165.3	202.7	214.2	149.1
	std. err.	(90.1)	(98.7)	(107.6)	(99.6)	(106.2)	(100.1)
All	mean	89.3	149.4	186.2	221.8	258.1	114.2
	std. err.	(110.1)	(129.3)	(126.8)	(125.5)	(125.8)	(123.3)
		Total of time (fortnights) on TIE [c]					
Just 1 spell	mean	-	10.0	21.3	29.0	42.7	14.4
	std. err.	-	(11.7)	(19.4)	(21.0)	(27.5)	(17.2)
2 spells	mean	-	7.2	17.0	26.0	32.8	13.3
	std. err.	-	(7.8)	(14.3)	(19.2)	(20.3)	(14.8)
3 spells	mean	-	6.2	14.8	24.9	33.7	13.7
	std. err.	-	(6.8)	(12.7)	(16.0)	(21.8)	(15.2)
4 spells or more	mean	-	5.4	11.5	19.4	30.5	12.4
	std. err.	-	(5.2)	(7.7)	(10.7)	(17.5)	(12.8)
All	mean	-	8.4	17.0	25.2	35.2	13.7
	std. err.	-	(10.0)	(15.4)	(17.8)	(22.7)	(15.7)

Note: [a] Total of fortnights on UB payments observed in the RED data up to July 2009.
[b] Total of fortnights on IS payments observed in the RED data up to July 2009.
[c] Total of fortnights on TIE during July 2002- July 2009.
[*] Consecutive TIE spells are treated as a single TIE spell. Hence multiple TIE spells reflect TIE spells that are non-consecutive.

Table 9 below provides a comparison of means for two groups: UB recipients with (very last column) and without a TIE (very first column). In addition, it also reveals how the characteristics of UB customers who have received an exemption differ, depending on the number of exemptions that they have received in total during the observation window. That is, the very last column of Table 9 is split by the number of TIE spells. The unit of observation in Table 9 is the individual and the numbers are percentages. To give an example, amongst those UB recipients not granted a TIE, 57.54% is male (top left number). Amongst those UB recipients granted four TIEs, 65.18% was male (same row). The personal characteristics for individuals who had been granted TIEs are taken at the starting fortnight of the first TIE granted to them, whereas for individuals who had never been granted a TIE the personal characteristics relate to the starting fortnight of their first UB spell.

There are no major differences between individual characteristics across the columns, except for gender, age and partner status. A higher proportion of males have had multiple TIE spells, relative to women. Furthermore, the age distribution for UB recipients without TIEs is overrepresented by individuals 25 years of age or younger when compared to the age distribution for UB recipients with at least one TIE (i.e. last column); the age group 26 to 30 years seems to be the tipping point. In broad terms (comparing first and last columns) there are no differences between the proportion of UB recipients with partners for those with or without TIEs, but among those with multiple TIE spells singles are overrepresented.

Table 9b is the equivalent of Table 9 using the ATPP sample and provides a comparison of means for activity tested PP recipients with (very last column) and without a TIE (very first column). We find that those with a TIE, compared to those without a TIE, are more likely to be in the age group 46 to 64 years old and less likely to be in the age group 25 to 25 years old. Furthermore they are also more likely to have been born overseas in a non-English-speaking country and more likely to have only one dependent child. Their youngest child is also more likely to be more than 12 years of age.

Table 9: Distribution of characteristics for UB recipients by TIE spells (percentages, UB sample)

	NO	1	2	3	4+	Total (if granted)
		Granted a TIE — YES — Number of TIE spells				
Male	57.54	58.12	60.24	60.38	65.18	59.31
Female	42.46	41.88	39.76	39.62	34.82	40.69
Age group						
14-20	28.13	14.75	15.40	12.67	12.65	14.55
21-25	18.93	15.30	15.09	14.42	15.77	15.21
26-30	10.80	10.2	10.96	13.48	17.11	11.17
31-35	8.42	9.08	11.54	10.38	13.1	10.03
36-40	7.85	9.44	9.37	10.65	12.05	9.73
41-45	7.64	9.83	10.91	11.73	10.42	10.27
46-50	6.36	9.41	9.53	9.84	8.93	9.43
51-55	5.07	8.91	8.42	8.76	6.55	8.61
56-60	4.71	8.17	6.72	6.47	3.13	7.33
61-64	2.08	4.92	2.06	1.62	0.30	3.66
Country of birth						
Australian born, non ATSI	70.32	70.07	69.61	66.17	70.39	69.66
Australian born, ATSI	6.55	5.63	5.56	5.53	4.61	5.53
Overseas (English speaking)	7.44	7.55	7.25	8.22	7.44	7.53
Overseas (non-English speaking)	15.70	16.75	17.58	20.08	17.56	17.28
Number of dependent children						
0	84.20	86.25	87.67	87.74	88.99	86.89
1	7.10	5.82	5.29	4.85	3.57	5.45
2	5.07	4.22	4.24	4.99	3.72	4.25
3 and above	3.62	3.72	2.81	2.43	3.72	3.41
Age of youngest						
Aged <1	1.92	1.62	1.54	1.35	1.93	1.60
Aged between 1-2	1.38	0.99	1.06	1.08	1.34	1.04
Aged between 2-3	1.12	0.98	0.85	1.08	0.6	0.93
Aged between 3-5	1.59	1.36	1.8	1.62	2.08	1.53
Aged between 5-12	5.95	5.67	4.5	4.99	3.42	5.19
Aged 12 and above	3.85	3.13	2.59	2.16	1.64	2.82
No dependent children	84.20	86.25	87.67	87.74	88.99	86.89
State of Residence						
ACT	1.29	1.09	1.01	1.48	1.04	1.10
NSW	31.01	32.66	33.3	32.48	32.74	32.79
VIC	24.46	22.11	23.19	26.01	21.58	22.63
QLD	21.17	22.83	22.29	21.43	20.09	22.38
SA	7.52	8.38	7.94	7.68	11.31	8.45
WA	9.30	8.67	8.26	7.14	8.93	8.47
TAS	3.03	2.87	2.81	2.56	2.38	2.79
NT	1.88	0.96	0.95	0.67	1.19	0.96
Unknown	0.34	0.43	0.25	0.55	0.74	0.43
Partner status						
Single	85.27	83.39	86.77	88.41	89.58	85.03
Partnered	14.73	16.61	13.23	11.59	10.42	14.97
Total number of UB spells	20199	5432	1889	742	672	8735

Note: Consecutive TIE spells are treated as a single TIE spell. Multiple spells reflect non-consecutive spells.

Table 9b: Distribution of characteristics for activity tested PP recipients by TIE spells (percentages, ATPP sample)

	NO	YES			
		Number of TIE spells			
		1	2	3+	Total (if granted)
Male	9.16	8.96	7.81	7.69	8.67
Female	90.84	91.04	92.19	92.31	91.33
Age group					
14-20	0.07	0.03	0.00	0.00	0.02
21-35	32.02	24.54	24.28	24.91	24.51
36-45	49.37	49.38	48.02	54.95	49.43
46-64	18.54	26.05	27.70	20.15	26.03
Country of birth					
Australian born, non ATSI	66.88	64.06	64.71	62.64	64.10
Australian born, ATSI	6.44	5.71	5.78	3.66	5.61
Overseas (English speaking)	7.97	7.75	7.06	7.33	7.60
Overseas (non-English speaking)	18.71	22.48	22.46	26.37	22.69
Number of dependent children					
1	48.07	55.72	53.37	56.78	55.34
2	34.53	31.61	32.83	32.60	31.90
3 and above	17.40	12.67	13.80	10.62	12.76
Age of youngest					
Aged between 6-12	73.51	64.48	65.24	61.90	64.49
Aged 12 and above	26.49	35.62	34.76	38.10	35.51
State of Residence					
ACT	1.05	1.21	1.39	2.20	1.30
NSW	32.53	33.26	33.69	35.16	33.45
VIC	24.1	24.54	26.52	22.34	24.8
QLD	20.26	19.8	21.07	18.68	19.98
SA	7.92	9.58	8.02	11.72	9.4
WA	9.58	7.97	5.88	6.96	7.52
TAS	2.95	2.92	3.1	1.47	2.88
NT	1.55	0.67	0.21	1.10	0.61
Unknown	0.06	0.05	0.11	0.37	0.08
Partner status					
Single	86.40	88.06	87.38	89.38	88.01
Partnered	13.60	11.94	12.62	10.62	11.99
Total number of ATPP spells	27,226	3,728	935	273	4,936

Note: Consecutive TIE spells are treated as a single TIE spell. Multiple spells reflect non-consecutive spells.

4.4. *Transitions in Income Support Receipt for Individuals granted TIEs*

To assess how UB recipients who have been granted TIEs fare we follow them over time. Specifically, we select UB spells commenced within our observation window that last longer than 6 months and measure the number of TIE spells and the total of TIE fortnights within the initial 6 months of these UB spells. Next, we follow those recipients up at 6 months, 12 months, and then every year up to 4 years from the end of the initial 6 month period (on UB).

At each follow-up point we check to see if they are still on UB, have transited to DSP, have transited to an income support payment other than DSP, or have left income support altogether. Table 10 reports our analysis statistics of this follow-up group. Also, because some TIE spells occur much later into the UB spell (as observed in Table 3), we repeat the follow-up analysis but condition on individuals who start an UB spell that lasts longer than 12 months and measure the number of TIE spells and the total of TIE fortnights they have within the first 12 months of their UB spell. The statistics for this group are reported in Table 11.

Table 10 shows that the proportion of individuals that has left income support 6 months after the end of the first 6 months on UB differs by TIE receipt status. For those who did not receive a TIE this proportion is 36%. For those who received TIEs, it is about a quarter. As for subsequent follow-up points, the rate of leaving income support still differs by whether or not an individual has ever been granted TIEs to the same extent as it did at the 6 month follow-up point. In addition, the rate of leaving income support also differs within the group of customers that received TIEs, although differences by the number of TIE spells and the total number of fortnights with a TIE are both small. The proportion leaving income support is negatively correlated with the total number of fortnights with a TIE.

As for the outcome of being on UB, the proportion does not differ substantially between TIE receipt statuses. However, when disaggregating by the number of TIE spells, recipients with multiple TIE spells are more likely to stay on UB, compared to those with one single spell, for the follow-up points of 6 months and 12 months. This pattern, however, does not hold for the subsequent follow-up points.

There are substantial differences in the proportions transferring to DSP and other payments with respect to TIE receipt status. Individuals who received TIEs are much more likely to transfer to DSP compared to those who did not. By the end of year 4 (after the initial 6 months), 16% of individuals with TIEs are found to be receiving DSP, compared to 3.7% among those who did not have a TIE. The rate of transferring to DSP also differs among those with TIEs. Individuals who received TIE for a longer duration are much more likely to transfer to DSP, when compared to those who had short TIE spells, and this pattern holds for every follow-up point. On the contrary, recipients with multiple TIE spells are less likely to transfer to DSP, compared to those with a single TIE spell and this pattern is true for every follow-up point. Similar conclusions are also found for the outcome of transferring to other payments, but to a lesser extent.

Overall, the key patterns with respect to the receipt of TIE are as follows. Those who had no TIE spell are more likely to leave the income support system whereas those who had a TIE spell are more likely to transfer to DSP and other income support payments. Furthermore, the probability of transferring to DSP is positively related to the amount of time customers received a TIE.

The results in Table 11 replicates those in Table 10 for the case where we condition on individuals who start an UB spell that lasts at least 12 months and where we measure the number of TIE spells and the number of TIE fortnights within their first 12 months on UB. In other words, we have changed our population- we now capture those individuals who have very long episodes of continuous unemployment (by construction, at least 12 months). This is reflected, for instance, in the proportion of those who were still on UB at the first follow-up 6 months later - around 70% is still on UB as opposed to the 60% in Table 10.

With respect to the differences in terms of TIE experiences, the patterns are quite similar to those shown in Table 10. For example, as the length between follow-ups increases more individuals move off income support or transfer to other payments. Similarly, for those who had TIEs, a common transition is to DSP and the rate of transition increases with the number of fortnights with a TIE. With respect to transfers to income support payments (other than DSP), the patterns do not seem to differ substantially by whether or not an individual was granted a TIE or not. However, there is a different pattern between Tables 10 and 11. While Table 10 shows there is a difference in the outcomes at various follow-up points by the number of TIE spells, the outcomes at various follow-up points for recipients with multiple TIE spells and single TIE spells in Table 11 are quite similar to each other.

Table 10: Income Support Status at various points in time after initial 6 months spent on UB by TIE experience during the first 6 months on UB (row percentages, UB sample)

	On UB	On DSP	On other IS	Not on IS	No. of obs.
Elapsed time after initial 6 months on UB: 6 months					
During initial 6 months on UB:					
did not receive any TIE spell	60.0	0.6	3.4	36.0	13,263
received TIE	62.2	5.4	5.7	26.8	3,869
one TIE spell	*61.6*	*5.5*	*5.6*	*27.3*	*3,465*
two or more TIE spells	*66.8*	*4.2*	*6.2*	*22.8*	*404*
In case of a TIE, spend a combined:					
1-3 fortnights on TIE	60.46	2.97	4.36	32.21	1,009
4-6 fortnights on TIE	65.06	2.92	5.84	26.18	787
7-13 fortnights on TIE	61.89	7.43	6.27	24.41	2,073
Elapsed time after initial 6 months on UB: 12 months					
During initial 6 months on UB:					
did not receive any TIE spell	47.4	1.3	5.3	46.1	12,283
received TIE	49.9	9.1	7.8	33.2	3,576
one TIE spell	*49.5*	*9.4*	*8.0*	*33.2*	*3,213*
two or more TIE spells	*54.0*	*6.3*	*6.3*	*33.3*	*363*
In case of a TIE, spend a combined:					
1-3 fortnights on TIE	51.4	5.0	7.5	36.1	928
4-6 fortnights on TIE	52.1	5.8	8.2	33.9	720
7-13 fortnights on TIE	48.4	12.2	7.8	31.5	1,928
Elapsed time after initial 6 months on UB: 2 years					
During initial 6 months on UB:					
did not receive any TIE spell	35.9	2.4	7.8	54.0	10,401
received TIE	36.4	13.0	9.6	41.0	2,993
one TIE spell	*36.3*	*13.3*	*9.8*	*40.6*	*2,700*
two or more TIE spells	*37.2*	*9.9*	*8.2*	*44.7*	*293*
In case of a TIE, spend a combined:					
1-3 fortnights on TIE	37.4	6.2	9.8	46.7	763
4-6 fortnights on TIE	40.6	9.2	8.4	41.8	598
7-13 fortnights on TIE	34.4	17.6	10.0	38.1	1,632
Elapsed time after initial 6 months on UB: 3 years					
During initial 6 months on UB:					
did not receive any TIE spell	29.3	2.9	9.3	58.5	8,426
received TIE	28.3	15.0	12.1	44.7	2,402
one TIE spell	*28.2*	*15.3*	*12.3*	*44.3*	*2,164*
two or more TIE spells	*29.0*	*12.2*	*10.9*	*47.9*	*238*
In case of a TIE, spend a combined:					
1-3 fortnights on TIE	29.2	7.4	13.3	50.1	607
4-6 fortnights on TIE	30.6	10.5	13.3	45.7	468
7-13 fortnights on TIE	27.1	20.0	11.2	41.8	1,327

Table 10 [continued]

Elapsed time after initial 6 months on UB: 4 years

During initial 6 months on UB:					
did not receive any TIE spell	25.0	3.7	9.9	61.5	6,246
received TIE	24.3	16.7	12.8	46.2	1,698
one TIE spell	*24.3*	*16.8*	*13.0*	*46.0*	*1,530*
two or more TIE spells	*24.4*	*16.1*	*10.7*	*48.8*	*168*
In case of a TIE, spend a combined:					
1-3 fortnights on TIE	26.5	7.8	13.9	51.8	438
4-6 fortnights on TIE	27.6	12.1	17.1	43.2	322
7-13 fortnights on TIE	22.1	22.5	10.8	44.7	938

Notes: Number of observations decreases with elapsed time due to right-censoring (i.e. they were still ongoing when the observation period ended). All UB spells lasted 6 months or more during our observation window.

Consecutive TIE spells are treated as a single TIE spell. Two or more TIE spells reflect non-consecutive spells.

Number of fortnights on TIE is cumulative number of fortnights within the initial 6 months on UB (i.e. across all TIE spells in that window).

Table 11: Income Support Status at various points in time after initial 12 months spent on UB by TIE experience during first 12 months on UB (row percentages, UB sample)

	On UB	On DSP	On other IS	Not on IS	No. of obs.
Elapsed time after initial 12 months on UB: 6 months					
During initial 12 months on UB:					
did not receive any TIE spell	70.0	0.9	2.8	26.3	5,601
received TIE	71.8	5.1	4.8	18.3	2,694
one TIE spell	71.3	5.2	4.8	18.7	2,055
two or more TIE spells	73.4	5.0	4.5	17.1	639
In case of a TIE, spend a combined:					
1-3 fortnights on TIE	71.4	2.5	3.5	22.6	601
4-6 fortnights on TIE	72.1	2.4	4.4	21.2	458
7-13 fortnights on TIE	72.8	3.8	6.7	16.7	731
14-26 fortnights on TIE	71.1	9.3	4.2	15.4	904
Elapsed time after initial 12 months on UB: 12 months					
During initial 12 months on UB:					
did not receive any TIE spell	57.1	1.9	4.8	36.3	5,145
received TIE	57.2	8.3	6.6	27.9	2,472
one TIE spell	56.8	7.9	6.9	28.4	1,890
two or more TIE spells	58.4	9.5	5.7	26.5	582
In case of a TIE, spend a combined:					
7-13 fortnights on TIE	57.8	3.5	5.5	33.3	547
14-26 fortnights on TIE	59.2	3.9	7.7	29.2	414
7-13 fortnights on TIE	57.9	7.6	8.3	26.3	662
14-26 fortnights on TIE	55.2	14.1	5.5	25.1	849
Elapsed time after initial12 months on UB: 2 years					
During initial 12 months on UB:					
did not receive any TIE spell	43.2	2.9	7.7	46.2	4,253
received TIE	42.2	13.6	9.1	35.1	2,043
one TIE spell	42.8	12.8	9.0	35.4	1,557
two or more TIE spells	40.3	16.1	9.5	34.2	486
In case of a TIE, spend a combined:					
7-13 fortnights on TIE	45.1	5.1	8.5	41.3	448
14-26 fortnights on TIE	44.9	5.4	8.4	41.3	332
7-13 fortnights on TIE	45.4	13.4	10.4	30.7	537
14-26 fortnights on TIE	36.9	22.6	8.8	31.7	726
Elapsed time after initial 12 months on UB: 3 years					
During initial 12 months on UB:					
did not receive any TIE spell	35.3	3.8	8.9	52.0	3,288
received TIE	33.0	16.4	11.7	38.9	1,559
one TIE spell	33.3	15.6	11.9	39.3	1,187
two or more TIE spells	32.3	18.8	11.3	37.6	372
In case of a TIE, spend a combined:					
7-13 fortnights on TIE	39.9	5.0	11.7	43.4	341
14-26 fortnights on TIE	37.0	5.6	11.7	45.8	249
7-13 fortnights on TIE	32.9	17.6	13.9	35.6	404
14-26 fortnights on TIE	27.3	27.1	10.3	35.4	565

Table 11 [continued]

Elapsed time after initial 12 months on UB: 4 years					
During initial 12 months on UB:					
did not receive any TIE spell	30.1	4.2	10.4	55.4	2,317
received TIE	27.2	18.7	12.6	41.5	1,063
one TIE spell	26.5	18.3	13.2	42.0	835
two or more TIE spells	29.8	20.2	10.5	39.5	228
In case of a TIE, spend a combined:					
7-13 fortnights on TIE	29.8	8.1	13.7	48.4	248
14-26 fortnights on TIE	31.5	8.2	14.5	45.9	159
7-13 fortnights on TIE	26.2	21.4	15.0	37.5	267
14-26 fortnights on TIE	24.4	28.0	9.5	38.1	389

Notes: Number of observations decreases with elapsed time due to right-censoring (i.e. they were still ongoing when the observation period ended). All UB spells lasted 6 months or more during our observation window.

Consecutive TIE spells are treated as a single TIE spell. Two or more TIE spells reflect non-consecutive spells.

Number of fortnights on TIE is cumulative number of fortnights within the initial 12 months on UB (i.e. across all TIE spells in that window).

Table 11b replicates Table 11 for the activity tested PP sample. Our PP sample spans July 2006 to July 2009 so we only report on the income support status at 6 and 12 month follow-up points after an initial 12 months on ATPP The main finding is that remaining on ATPP at the 6 and 12 month follow-up points is by far the most likely outcome and that very few are observed to be on other income support payments.

Table 11b: Income Support Status at various points in time after initial 12 months spent on ATPP by TIE experience during the first 12 months on ATPP (row percentages)

	On ATPP	On other IS	Not on IS	No. of obs.
Elapsed time after initial 12 months on ATPP: 6 months				
During initial 6 months on ATPP:				
did not receive any TIE spell	84.4	1.4	14.1	15735
received TIE	81.6	2.4	16.1	2364
In case of a TIE, spend a combined:				
1-3 fortnights on TIE	83.3	2.3	14.4	750
4-6 fortnights on TIE	82.9	1.9	15.1	463
7-13 fortnights on TIE	79.8	2.4	17.7	739
14-26 fortnights on TIE	79.9	2.9	17.2	412
Elapsed time after initial 12 months on ATPP: 12 months				
During initial 6 months on ATPP:				
did not receive any TIE spell	73.5	0.7	25.8	14332
received TIE	68.4	0.9	30.7	2299
In case of a TIE, spend a combined:				
7-13 fortnights on TIE	69.4	1.0	29.6	731
14-26 fortnights on TIE	70.6	0.9	28.5	449
7-13 fortnights on TIE	67.0	0.3	32.7	716
14-26 fortnights on TIE	66.8	1.4	31.8	403

Notes: Number of observations decreases with elapsed time because of right censoring (i.e. they were still ongoing when the observation period ended). All ATPP spells lasted 12 months or more during our observation window.

Number of fortnights on TIE is cumulative number of fortnights within the initial 6 or 12 months on ATPP (i.e. across all TIE spells in that window).

5. Modelling approach

In this section, we aim to examine the impact of receiving TIEs on the individual's future use of income support payments. In particular, we want to investigate whether the use of TIEs is associated with a higher chance of moving to non-activity tested payments, especially DSP. So far, from the descriptive analysis, we learned that for the UB sample

- Individuals with TIEs on average spend more time on income support payments

- Individuals with TIEs also spend a longer time on unemployment benefits, in other words, many of those individuals are long-term unemployed.

- Individuals with TIEs tend to be older compared to individuals without TIEs.

Compared to descriptive analysis, models have the advantage that a multitude of factors can be incorporated simultaneously. To do the same with descriptive analysis is much less straight-forward. For example, descriptive analysis on the relationship between age and the use of TIEs and, say, country of birth and the use of TIEs could be expanded by using cross tabulations of age *and* country of birth if there is a concern that most migrants are overrepresented among certain age groups. In the descriptive analysis in the previous section we often used cross tabulations of the number of UB and TIE spells. However, when the number of characteristics becomes larger these cross tabulations become impractical due to the number of possible combinations. This is where models are useful. We will briefly describe our modelling approach, which is used to estimate two models. Model 1 corresponds to the second block of numbers in Table 10. Model 2 corresponds to the second block of numbers in Table 11. We also estimate a variation of model 2 for the PP sample.

There are several important points about our estimation approach. First, by including demographic and income support history, we are able to control in part for differences between the groups of individuals with TIEs and the group of individuals without TIEs. Second, by restricting the sample to UB spells that lasted a certain period and derived the TIE-related variables for that period, we attempt to reduce the differences between the two groups of individuals. The model results should really be interpreted as an alternative representation of a multi-dimensional cross tabulation. That is, our objective is to establish correlations and general patterns, not strictly causal relationships.

Model 1

For the first estimation, we restrict the UB spells commenced within the data period to have lasted at least *6 months*. We derive variables that capture the use of TIEs within the initial 6 months of the UB spells. Our dependent variable is the status of income support receipt at 12 months after the initial 6 months on UB (i.e. 18 months since the UB spell commencement). We distinguish four outcomes for the dependent variable: (Still or again) on UB, on DSP, on other payments, and off income support.

We model these four potential outcomes using a multinomial logit model. To measure the impact of the use of TIEs within the initial 6 months of the UB spell on the outcome variables, we include:

- o The use of TIEs
    - o Did not received any TIE (omitted category)
    - o Received one TIE spell
    - o Received two or more TIE spells
- o Time spent on TIEs within the initial 6 months UB spell (in fortnights).

In addition to these TIE related variables, we also control for the following factors

- o Age
    - o Aged 20 years and under (omitted category)
    - o Aged 21-25 years
    - o Aged 26-30 years
    - o Aged 31-35 years
    - o Aged 36-40 years
    - o Aged 41-45 years
    - o Aged 46-50 years
    - o Aged 51-55 years
    - o Aged 56+ years
- o Gender (male is omitted category)
- o Country of birth and ATSI status
    - o Non ATSI Australian born (omitted category)
    - o ATSI

- o ESB (foreign born; born in a major English speaking country)
- o NESB (foreign born; born in a non-English speaking country)
- o Partner status (at spell entry)
- o Presence of dependent child(ren) (at spell entry)
- o Region of residence (at spell entry)
    - o Sydney (omitted category)
    - o Balance of New South Wales (NSW)
    - o Brisbane
    - o Balance of Queensland (QLD)
    - o Adelaide
    - o Balance of South Australia (SA)
    - o Perth
    - o Balance of Western Australia (WA)
    - o Tasmania (TAS)
    - o Northern Territory, Australian Capital Territory (NT/ACT)
- o Year of spell entry
    - o 2002 (omitted category)
    - o 2003
    - o 2004
    - o 2005
    - o 2006
    - o 2007
    - o 2008
- o Income support history in the 2 years prior to the start of the (minimum 6 month) UB spell
    - o Indicator for receiving UB
    - o Indicator for receiving other income support payments

Model 2

Model 2 is identical in set up to Model 1 except that, instead of restricting the UB spells commenced within the data period to have lasted at least 6 months we now restrict them to have lasted at least *12 months*. We derive the same variables that capture the use of TIEs within the initial 12 months of the UB spell. The dependent variable is again the status of

income support receipt at the 12-month follow-up (i.e. 2 years since the UB spell commencement).

Samples for Models 1 and 2 correspond to the second block of numbers in Table 10 and Table 11, respectively. It is important to point out that both samples have excluded short-term unemployment spells that lasted less than 6 months, which make up the bulk of all spells. The sample for the latter model excludes individuals who left UB from month 7 to month 12 since spell commencement and hence is smaller than the sample used in model 1. However, the smaller sample for model 2 does have the advantage of observing more TIEs, since TIEs are often granted later on into an UB spell (see Table 3).

Before presenting and discussing the estimation results, we first describe our econometric model – the multinomial logit model.

5.1. *The multinomial logit model*

We present the multinomial logit model, using the first estimation as the illustration. The probability an UB recipient is in outcome state j 18 months after commencement of the UB spell is modelled as a function of the individual's characteristics and other factors denoted by X, i.e.,

$$P_j = P(X, \beta_j)$$

where β_j is a vector of parameters. The multinomial logit model is defined by letting $P(.)$ take a logit probability function. It is identified by normalising the parameters $\boldsymbol{\beta}$ to zero for one outcome (the base category) and is described by the system of equations:

$$\Pr(y=1) = \frac{1}{1 + \sum_{j=2}^{J} e^{\mathbf{X}\boldsymbol{\beta}_j}}$$

$$\Pr(y=m) = \frac{e^{\mathbf{X}\boldsymbol{\beta}_m}}{1 + \sum_{j=2}^{J} e^{\mathbf{X}\boldsymbol{\beta}_j}}, \quad m = 2,...,J$$

where X is a vector of explanatory variables, β_j is the coefficient vector for outcome J and y is the outcome of interest that can take on J distinct values. In our case y can take on the value 1 (being on UB), 2 (being on DSP), 3 (being on income support, but not UB or DSP), and 4

(being off income support). We normalise the β_1 to be zero, that is, we take being on UB as the reference outcome. What one chooses as the reference outcome is completely inconsequential. It only affects for which outcomes estimated coefficients are presented. The coefficient estimates are not intuitively interpretable in any event, as the model is non-linear and the effects of individual explanatory variables depend on the values of the explanatory variables at which they are evaluated. Consequently, rather than focussing on coefficient estimates, 'mean marginal effects' of the explanatory variables are reported and analysed. These marginal effects are available for all the outcomes of the dependent variable and do not require a normalisation as is the case for the βs.

The marginal effect of continuous explanatory variable x_k on the probability that outcome m occurs for a person with characteristics $\mathbf{x}^i$ is given by:

$$ME_{m,k}^i = \frac{\partial \Pr\left(y = m \mid \mathbf{x}^i\right)}{\partial x^i} = \Pr\left(y = m \mid \mathbf{x}^i\right)\left[\beta_{k,m|J} - \sum_{j=1}^{J} \beta_{k,j|J} \Pr\left(y = j \mid \mathbf{x}^i\right)\right]$$

while the *mean* marginal effect is given by:

$$MME_{m,k} = \left(1/n\right)\sum_{i=1}^{n} ME_{m,k}^i$$

where $MME_{m,k}$ is the mean marginal effect of variable x_k on the predicted probability $\Pr\left(y = m \mid x\right)$, and the summation is over the n individuals in the sample. This is, as the name suggests, the mean marginal effect of the explanatory variable on the predicted probability a person has outcome m, is evaluated over all individuals in the sample, and holding all other explanatory variables constant at their actual values. To put the maths in plain language, the mean marginal effect is 'the average effect on the probability of outcome m per unit of increase in x_k'.

For a binary explanatory variable, the marginal effect of explanatory variable x_k on the probability outcome m occurs for a person with characteristics $\mathbf{x}^i$ is given by:

$$ME_{m,k}^i = \Pr\left(y = m \mid \mathbf{x}_{-k}^i, x_k = 1\right) - \Pr\left(y = m \mid \mathbf{x}_{-k}^i, x_k = 0\right)$$

where $\mathbf{x}_{-k}^i$ represents the vector of characteristics of person i for all variables other than x_k. That is, the marginal effect is obtained by changing the explanatory variable x_k from zero to one. When doing this for every individual, holding all other explanatory variables at their actual values, and calculating the mean change in the predicted probability one obtains the *mean* marginal effect for x_k.

For related sets of binary variables, such as those for age groups, we also take account of the dependencies between these variables in calculating mean marginal effects. Specifically, we first set all of the interdependent dummy variables equal to zero before calculating the effect of changing the specific dummy variable from zero to one for each individual. For example, to calculate the mean marginal effect for the 'age 36-40' dummy, we first set all age dummies to zero for each individual before setting the 'age 36-40' dummy to 1, thereby giving us the effect of changing a person's age from " 20 or less" (the omitted dummy) to 36-40.

The correspondingly modified version of the marginal effect (ME) equation is therefore:

$$ME_{m,k}^i = \Pr\left(y = m \mid \mathbf{x}_o^i, \mathbf{x}_g = 0, x_k = 1\right) - \Pr\left(y = m \mid \mathbf{x}_o^i, \mathbf{x}_g = 0, x_k = 0\right)$$

where $\mathbf{x}_o^i$ comprises a vector of characteristics of person i for all variables other than those in the group of dummy variables to which variable x_k belongs, and $\mathbf{x}_g$ is the vector of other dummy variables in the group to which x_k belongs.

Note that the mean marginal effect of a variable sums to zero across the J possible outcome categories, i.e. $\sum_{j=1}^{J} MME_{j,k} = 0$. The logic behind this is simple. If a characteristic 'x' makes someone more likely to have exited income support, then it must make them less likely to be in any of the remaining outcomes, since they have to be, and can only be, in one of the 4 outcomes.

Rather than attempt to derive analytic standard errors, standard errors for the estimates of mean marginal effects are derived using bootstrapping. The standard error of any statistic M can be computed as:

$$SE_M = \sqrt{\left(\frac{1}{B-1}\right)\sum_{i=1}^{B}\left[\hat{M}^i - \left(\left(\frac{1}{B}\right)\sum_{i=1}^{B}\hat{M}^i\right)\right]^2}$$

where B is the number of bootstrap iterations (we choose 400 iterations) and $\hat{M}^i$ is the value of M in the ith bootstrap sample. Of course, one can also simply refer to the significance level of the raw coefficient estimates to see which variables are statistically significant.

5.2. *Estimation Results*

Tables 12 and 13 report the mean marginal effects for Models 1 and 2, respectively, for the UB sample. The estimated coefficients, which do not have straightforward interpretation, are reported in the Appendix (Tables A1 and A2) and not discussed here. We instead focus on the mean marginal effects, which have a more intuitive interpretation.

We are primarily interested in the role of TIEs. We include indicators for having had "one TIE spell" and "two or more TIE spells" during the initial months of the UB spell (either 6 or 12 months). We further include the number of fortnights with a TIE in the initial 6 or 12 months of the UB spell to account for the fact that a single TIE spell can be quite long, since consecutive renewals/extensions are treated as a single spell. As is apparent from Tables 12 and 13, having received a TIE has a substantial impact on the four outcomes. For instance, focusing on Table 12, the impacts of "one TIE spell" and "two or more TIE spells" on the probability of leaving income support are substantial and similar to each other. Both are around 10 percentage points. Having received one TIE spell increases the probability of being on UB by almost 4 percentage points and around 3 percentage points for the remaining outcomes (on DSP and on other payment). As for the case of having received two or more TIE spells, its negative impact of 10% on the outcome of leaving income support is mostly translated into its positive impact on the probability of staying on UB (7.3%).

The effects of having received TIEs (by the number of spells) have been consistent with the implied patterns reported in Table 10. With respect to the number of fortnights with a TIE, the estimated effects are not significant- only the effect on DSP is statistically significant but small in magnitude. This finding is in contrast with the implied pattern in Table 10. This difference highlights that the fact that these estimated effects are conditional on a series of control variables while the effects implied in the cross tabulations in Table 10 did not control for any mitigating factors.

When we expand the initial UB spell period to 12 months (Table 13) the effects of having received TIEs are still qualitatively similar. In terms of magnitude, the marginal effects of

time with a TIE are similar but the estimated effects of TIE receipt (by the number of TIE spells) are smaller. Specifically, having a TIE spell reduces the probability of being off income support by about 6 percentage points (compared to 9.4 percentage points previously) and in the case of two or more TIE spells by about 8 percentage points (compared to 10.2 percentage points previously). It is important to keep in mind that we compare the impacts of TIEs to the reference cases of not having any TIEs. Such reference cases for UB spells of 12 months or more are long-term unemployed individuals who already have a lower propensity to move off income support and a higher propensity to transfer to other payments when compared to the reference cases for UB spells of 6 months or more. The relative differences in the impacts of TIEs between the two models highlight the possibility of the impacts of TIEs differing across the population.

The remaining variables are primarily used as control variables and we shall briefly discuss the main findings. Focusing on Model 1 results (Table 12), the probability of remaining on UB is U-shaped with respect to age while the probability of transferring to DSP consistently increases with age. The patterns in age effects for the outcomes of "on other IS" and "off IS" are almost the mirror images of outcomes of "on UB" and "on DSP" respectively.

Female recipients are found to be much more likely to transfer to other payments but less likely to be on UB or off income support payment compared to male recipients. Married individuals are less likely to stay on UB and slightly more likely to transfer to DSP and much more likely to transfer to other payments, compared to individuals without a partner. Having dependent children, however, does not appear to have any effect.

As for the country of birth and ethnicity effects, individuals with an ATSI background are less likely to be "Off Income Support" and more likely to "on UB" and "other IS". Being born in a non-English speaking country is associated with a lower (higher) probability of being off income support (on UB).

In terms of customers' previous experience with the income support system, having received UB within two years prior to current spell commencement is associated with a lower (higher) probability of being off income support (on UB). Similarly, having received other payments increases the probabilities for the outcomes of "on UB", "on DSP" and "other IS", and hence decreases the probability of being "off Income Support".

Model 2 results (Table 13) are qualitatively similar to those of Model 1. In terms of magnitude, the age effects are very similar. However, for the remaining variables, the effects are consistently smaller in Model 2.

Table 12: Multinomial logit Mean Marginal Effects: Income Support Receipt Status at 12 month follow-up after initial 6 months on UB (UB sample)

	On U.B		On DSP		On other IS		Off IS	
	M.E	S.E	M.E	S.E	M.E	S.E	M.E	S.E
TIE history within initial 6 months since entry								
Have one TIE spell	0.038**	0.017	0.028**	0.006	0.028**	0.008	-0.094**	0.017
Have 2+ TIE spells	0.073**	0.031	0.015*	0.008	0.014	0.015	-0.102**	0.030
No. of fortnights with TIE	-0.000	0.002	0.003**	0.000	0.000	0.001	-0.003	0.002
Age at spell entry								
Age 21-25	-0.055**	0.012	0.002	0.003	-0.006	0.008	0.059**	0.011
Age 26-30	-0.026*	0.015	0.004	0.004	-0.020**	0.008	0.041**	0.014
Age 31-35	0.008	0.015	0.012**	0.005	-0.021**	0.008	0.001	0.015
Age 36-40	0.000	0.016	0.021**	0.005	-0.043**	0.007	0.022	0.016
Age 41-45	0.005	0.016	0.026**	0.005	-0.056**	0.007	0.025	0.015
Age 46-50	0.034**	0.017	0.030**	0.005	-0.056**	0.007	-0.008	0.017
Age 51-55	0.093**	0.019	0.045**	0.007	-0.054**	0.007	-0.084**	0.018
Age 56+	0.077**	0.018	0.057**	0.008	0.051**	0.012	-0.185**	0.016
Female	-0.035**	0.008	-0.004	0.003	0.071**	0.004	-0.032**	0.007
family status (at spell entry)								
Married	-0.069**	0.012	0.008**	0.004	0.044**	0.006	0.016	0.013
Have dependent child	0.023	0.014	-0.005	0.004	-0.001	0.006	-0.017	0.014
ATSI and country of birth								
ATSI	0.105**	0.016	0.013	0.008	0.021**	0.008	-0.139**	0.015
ESB	-0.019	0.017	-0.006	0.004	0.005	0.008	0.021	0.017
NESB	0.058**	0.012	0.000	0.003	0.007	0.006	-0.065**	0.011
Region of Residence (at spell entry)								
Balance of NSW	0.011	0.014	0.009*	0.005	-0.007	0.007	-0.013	0.014
Melbourne	-0.001	0.014	0.000	0.005	-0.019**	0.006	0.019	0.014
Balance of VIC	0.058**	0.018	-0.005	0.006	-0.007	0.009	-0.046**	0.017
Brisbane	-0.043**	0.017	0.003	0.006	-0.016**	0.008	0.056**	0.017
Balance of QLD	-0.027*	0.015	-0.011**	0.004	-0.006	0.007	0.044**	0.014
Adelaide	0.007	0.019	0.002	0.006	-0.017*	0.009	0.008	0.018
Balance of SA	0.032	0.025	-0.008	0.007	0.010	0.013	-0.034	0.023
Perth	-0.080**	0.019	0.004	0.008	-0.021**	0.008	0.097**	0.020
Balance of WA	0.010	0.024	-0.007	0.008	-0.009	0.011	0.006	0.024
TAS	0.068**	0.024	-0.013*	0.007	-0.012	0.012	-0.043*	0.023
NT/ACT	0.037	0.029	-0.011	0.008	-0.013	0.013	-0.013	0.028
Spell cohorts								
spells started in 2003	-0.013	0.014	0.008	0.005	-0.027**	0.007	0.031**	0.014
spells started in 2004	-0.011	0.015	0.001	0.005	-0.026**	0.007	0.036**	0.014
spells started in 2005	-0.032**	0.015	0.000	0.005	-0.029**	0.007	0.062**	0.014
spells started in 2006	-0.021	0.015	0.010**	0.005	-0.037**	0.008	0.048**	0.015
spells started in 2007	0.009	0.017	0.015**	0.005	-0.025**	0.008	0.001	0.016
spells started in 2008	0.048	0.037	0.022	0.014	-0.024	0.016	-0.046	0.035
IS history in 2 years prior to entry								
Received UB	0.076**	0.008	-0.004	0.003	-0.003	0.004	-0.069**	0.008
Received other payments	0.069**	0.012	0.014**	0.004	0.047**	0.007	-0.130**	0.011

Notes: S.E: standard errors derived from 400 bootstrap samples. ***, **, and * indicate the coefficient estimate being significant at 1%; 5%; 10% respectively.

Consecutive TIE spells are treated as a single TIE spell. Two or more TIE spells reflect non-consecutive spells.

Number of fortnights on TIE is cumulative number of fortnights within the initial 6 months on UB (i.e. across all TIE spells in that window).

Table 13: Multinomial logit Mean Marginal Effects: Income Support Receipt Status at 12 month follow-up after initial 12 months on UB (UB sample)

	On U.B		On DSP		On other IS		Off IS	
	M.E	S.E	M.E	S.E	M.E	S.E	M.E	S.E
TIE history within initial 12 months since entry								
Have one TIE spell	0.011	0.019	0.020**	0.007	0.025**	0.009	-0.056**	0.017
Have 2+ TIE spells	0.032	0.028	0.028**	0.010	0.019	0.013	-0.079**	0.025
No. of fortnights with TIE	0.000	0.001	0.002**	0.000	0.000	0.001	-0.002	0.001
Age at spell entry								
Age 21-25	-0.047**	0.019	-0.002	0.006	-0.021**	0.009	0.069**	0.017
Age 26-30	-0.037*	0.022	0.011	0.007	-0.034**	0.009	0.060**	0.019
Age 31-35	0.022	0.023	0.005	0.007	-0.024**	0.012	-0.003	0.020
Age 36-40	-0.012	0.025	0.019**	0.009	-0.038**	0.011	0.032	0.024
Age 41-45	0.032	0.024	0.030**	0.009	-0.047**	0.009	-0.015	0.022
Age 46-50	0.042*	0.024	0.040**	0.009	-0.048**	0.010	-0.034	0.023
Age 51-55	0.072**	0.025	0.051**	0.011	-0.043**	0.010	-0.080**	0.022
Age 56+	0.054**	0.025	0.064**	0.012	0.052**	0.016	-0.170**	0.020
Female	-0.010	0.012	-0.007	0.004	0.070**	0.006	-0.052**	0.012
family status (at spell entry)								
Married	-0.022	0.017	0.002	0.006	0.015*	0.008	0.005	0.016
Have dependent child	0.016	0.020	-0.007	0.006	-0.003	0.009	-0.006	0.018
ATSI and country of birth								
ATSI	0.110**	0.020	0.009	0.011	0.025**	0.012	-0.145**	0.016
ESB	-0.013	0.023	-0.010	0.007	-0.005	0.010	0.028	0.023
NESB	0.022	0.015	-0.003	0.006	-0.005	0.007	-0.014	0.015
Region of Residence (at spell entry)								
Balance of NSW	0.007	0.020	0.006	0.009	0.003	0.010	-0.016	0.019
Melbourne	0.000	0.020	-0.006	0.007	-0.009	0.009	0.015	0.019
Balance of VIC	0.034	0.025	0.002	0.011	-0.012	0.010	-0.024	0.024
Brisbane	-0.059**	0.027	0.008	0.010	0.006	0.012	0.046*	0.025
Balance of QLD	-0.022	0.022	-0.016**	0.008	0.017	0.011	0.021	0.021
Adelaide	0.033	0.027	-0.010	0.010	-0.014	0.012	-0.009	0.025
Balance of SA	0.006	0.036	-0.023**	0.012	-0.005	0.015	0.021	0.034
Perth	-0.043	0.032	-0.007	0.012	0.001	0.013	0.049	0.031
Balance of WA	-0.055	0.037	-0.015	0.014	-0.028**	0.012	0.098**	0.036
TAS	0.067**	0.033	-0.031**	0.010	0.010	0.016	-0.045	0.030
NT/ACT	0.063*	0.038	-0.015	0.013	-0.013	0.015	-0.034	0.037
Spell cohorts								
spells started in 2003	-0.028	0.021	0.006	0.008	0.007	0.010	0.016	0.020
spells started in 2004	-0.030	0.021	0.000	0.007	-0.002	0.010	0.032	0.019
spells started in 2005	-0.027	0.021	-0.004	0.007	0.003	0.010	0.028	0.019
spells started in 2006	-0.030	0.021	0.009	0.008	-0.006	0.010	0.027	0.021
Spells started in 2007	0.006	0.026	0.023**	0.010	0.002	0.012	-0.031	0.024
IS history in 2 years prior to spell entry								
Received UB	0.052**	0.012	-0.003	0.005	-0.006	0.006	-0.043**	0.011
Received other payments	0.050**	0.016	0.010	0.006	0.028**	0.009	-0.088**	0.015

Notes: S.E: standard errors derived from 400 bootstrap samples. ***, **, and * indicate the coefficient estimate being significant at 1%; 5%; 10% respectively.

Consecutive TIE spells are treated as a single TIE spell. Two or more TIE spells reflect non-consecutive spells.

Number of fortnights on TIE is cumulative number of fortnights within the initial 12 months on UB (i.e. across all TIE spells in that window).

Since more than 80% of the activity tested PP recipients in our sample had a ATPP spell lasting more than one year we only estimated a variation of model 2 (of the UB sample) for the sample of Parenting Payment recipients (i.e. using ATPP spells that lasted at least 12 months). In particular, all demographic controls are constructed in an identical way. Due to the very small proportion of transitions to other types of income support besides ATPP (as observed in Table 11b) we distinguish only three outcomes for the dependent variable: ATPP, Other IS payments, and off Income Support. There are also some minor changes that we have made. We have dropped the small number of teenage parents in our sample and condensed the age groupings. Furthermore, instead of distinguishing between having received 1 and 2 or more TIEs within the initial 12 months of the ATPP spell we only included an indicator for an individual ever having received a TIE. The reason for this grouping is that the small sample size of those who had more than one TIE spell would lead to imprecise estimates otherwise. For a similar reason, we have chosen to represent previous income support history by having an indicator which takes the value of 1 if the individual has ever received any benefits in the previous 2 years instead of disaggregating this by whether or not such income support history was associated with PP or other payment types.

Table 13b: Multinomial logit Mean Marginal Effects: Income Support Receipt Status at 12 month follow-up after initial 12 months on ATPP (ATPP sample)

	On ATPP		On Other IS		Off IS payments	
	M.E	S.E	M.E	S.E	M.E	S.E
TIE history within initial 12 months since entry						
Have received TIEs	-0.024	0.016	0.001	0.004	0.023	0.016
No. of fortnights with TIE	-0.003*	0.002	0.000	0.000	0.002	0.002
Age at spell entry						
Age 36-45	0.076**	0.009	-0.005**	0.002	-0.071**	0.009
Age 46-64	0.070**	0.010	-0.005*	0.002	-0.066**	0.010
Female	0.055**	0.013	-0.001	0.002	-0.054**	0.013
family status (at spell entry)						
Married	-0.118**	0.012	0.001	0.003	0.117**	0.012
No. of dependent kids	0.011**	0.005	-0.001	0.001	-0.009*	0.005
Youngest child aged 12+	-0.223**	0.009	0.005**	0.002	0.219**	0.009
ATSI and country of birth						
ATSI	-0.019	0.015	0.000	0.003	0.019	0.015
ESB	-0.020	0.013	0.003	0.003	0.017	0.013
NESB	0.006	0.009	0.003*	0.002	-0.009	0.009
Region of Residence (at spell entry)						
Balance of NSW	0.007	0.012	-0.001	0.002	-0.005	0.012
Melbourne	0.014	0.011	-0.001	0.002	-0.012	0.011
Balance of VIC	0.008	0.014	-0.000	0.003	-0.008	0.014
Brisbane	-0.017	0.015	-0.002	3.E-03	0.018	0.015
Balance of QLD	-0.012	0.014	0.000	0.003	0.012	0.013
Adelaide	0.019	0.016	-0.003	0.002	-0.016	0.016
Balance of SA	0.011	0.022	0.007	0.006	-0.018	0.022
Perth	0.004	0.016	-0.000	0.003	-0.004	0.016
Balance of WA	-0.015	0.023	0.006	0.006	0.008	0.023
TAS	-0.033	0.022	0.002	0.005	0.030	0.022
NT/ACT	-0.046*	0.025	-0.002	0.004	0.048*	0.025
Spell cohorts						
Spells started in 2007	0.564**	0.036	-0.207**	0.045	-0.357**	0.052
IS history in 2 years prior to spell entry						
Received IS payments	0.654**	0.032	-0.008	0.007	-0.647**	0.032

Notes: S.E: standard errors derived from 400 bootstrap samples. ***, **, and * indicate the coefficient estimate being significant at 1%; 5%; 10% respectively. Reference categories are Age 35 or less, Australian born non-ATSI and Sydney.

Number of fortnights on TIE is cumulative number of fortnights within the initial 12 months on ATPP (i.e. across all TIE spells in that window).

6. Concluding remarks

This report has mainly investigated the use of Temporary Incapacity Exemptions (TIEs) by income support customers receiving unemployment benefits, i.e. Newstart or Youth Allowance (Other) during the period from 1 July 2002 to 30 June 2009. Overall, the majority of TIEs lasted less than the maximum 13 weeks. However, we do find evidence that usage of consecutive exemptions is not trivial- over 15% of TIEs lasted 6 months or longer, which are longer than the duration that typical conditions giving rise to granting a TIE are expected to last. This is not necessarily a failure of the TIE instrument, but rather signifies that even if a condition is expected to last less than 6 months the incapacity has its own dynamic. Furthermore, granting a TIE for at most 13 weeks builds in automatic and periodic stocktaking moments that allow fine-tuning of the Activity Agreement.

When following a cohort of customers who started an unemployment benefit episode, we found that those with a TIE history were associated with having a higher probability of transferring to DSP and a lower probability of being off income support. Although this result in itself might be expected, it is not clear whether this reflects the health conditions of individual customers (since some reasons for granting TIEs indicate severe impairment), or prolonged reliance on income support as a result of exemptions being granted (i.e. interrupted job search). In all likelihood, it is a combination of both.

The report has also looked at TIE use by individuals on Parenting Payment who were subject to activity tests. The analysis was undertaken for a much condensed window between 1 July 2006 and 30 June 2009. Overall, the incidence of TIE use is much lower among this group when compared with those on UB. About 15% of the sampled ATPP recipients had received a TIE during the observation window, whereas the equivalent for UB recipients is 30%.

Appendix

Table A1: Multinomial logit coefficient estimates: Income Support Receipt Status at 12-month follow-up after initial 6 months on UB (UB sample)

	On DSP		On Other IS		Off IS	
	Coef.	S.E	Coef.	S.E	Coef.	S.E
TIE history within initial 6 months since spell entry						
Have one TIE spell	0.906***	0.174	0.389***	0.141	-0.332***	0.078
Have 2+ TIE spells	0.483*	0.277	0.125	0.267	-0.419***	0.141
No. of fortnights with TIE	0.107***	0.016	0.002	0.016	-0.008	0.009
Age at spell entry						
Age 21-25	0.297	0.277	0.035	0.114	0.260***	0.055
Age 26-30	0.363	0.288	-0.253*	0.143	0.153**	0.064
Age 31-35	0.728***	0.269	-0.354**	0.148	-0.014	0.067
Age 36-40	1.073***	0.262	-0.822***	0.172	0.053	0.071
Age 41-45	1.232***	0.257	-1.309***	0.192	0.050	0.073
Age 46-50	1.271***	0.253	-1.368***	0.194	-0.090	0.075
Age 51-55	1.522***	0.252	-1.389***	0.206	-0.407***	0.083
Age 56+	1.807***	0.244	0.430***	0.131	-0.743***	0.083
Female	-0.047	0.106	1.337***	0.080	-0.012	0.037
family status (at spell entry)						
Married	0.444***	0.120	0.849***	0.093	0.186***	0.053
Have dependent child	-0.236	0.152	-0.058	0.122	-0.090	0.062
ATSI and country of birth						
ATSI	0.229	0.206	0.169	0.122	-0.596***	0.065
ESB	-0.221	0.194	0.125	0.148	0.093	0.071
NESB	-0.087	0.132	0.012	0.108	-0.284***	0.052
Region of Residence (at spell entry)						
Balance of NSW	0.254	0.168	-0.132	0.128	-0.059	0.062
Melbourne	0.000	0.161	-0.355***	0.129	0.051	0.059
Balance of VIC	-0.283	0.241	-0.225	0.164	-0.236***	0.079
Brisbane	0.168	0.202	-0.203	0.161	0.230***	0.075
Balance of QLD	-0.406**	0.198	-0.051	0.130	0.167**	0.065
Adelaide	0.040	0.230	-0.326*	0.191	0.008	0.083
Balance of SA	-0.350	0.358	0.081	0.206	-0.155	0.111
Perth	0.262	0.241	-0.228	0.195	0.407***	0.085
Balance of WA	-0.301	0.359	-0.179	0.216	-0.001	0.109
TAS	-0.729*	0.412	-0.348	0.230	-0.242**	0.111
NT/ACT	-0.550	0.418	-0.313	0.248	-0.103	0.119
Spell cohorts						
spells started in 2003	0.316	0.200	-0.387***	0.129	0.107*	0.064
spells started in 2004	0.045	0.207	-0.385***	0.128	0.119*	0.065
spells started in 2005	0.028	0.206	-0.407***	0.130	0.225***	0.065
spells started in 2006	0.401**	0.201	-0.589***	0.137	0.167**	0.067
spells started in 2007	0.504**	0.198	-0.402***	0.132	-0.016	0.068
spells started in 2008	0.623	0.400	-0.446	0.320	-0.226	0.167
IS history in 2 years prior to spell entry						
Received UB	-0.279***	0.106	-0.210***	0.076	-0.328***	0.036
Received non-UB payments	0.348***	0.123	0.590***	0.096	-0.499***	0.055
constant	-4.719***	0.296	-2.379***	0.160	0.175**	0.078
Pseudo R2	0.077					
Number of obs.	15,859					

Notes: ***, **, and * indicate the coefficient estimate being significant at 1%; 5%; 10% respectively.

Consecutive TIE spells are treated as a single TIE spell. Two or more TIE spells reflect non-consecutive spells.

Number of fortnights on TIE is cumulative number of fortnights within the initial 6 months on UB (i.e. across all TIE spells in that window).

Table A2: Multinomial logit coefficient estimates: Income Support Receipt Status at 12 month follow-up after initial 12 months on UB (UB sample)

	On DSP		On Other IS		Off IS	
	Coef.	S.E	Coef.	S.E	Coef.	S.E
TIE history within initial 12 months since spell entry						
Have one TIE spell	0.558***	0.195	0.451***	0.161	-0.205**	0.086
Have 2+ TIE spells	0.696***	0.235	0.315	0.248	-0.325**	0.132
No. of fortnights with TIE	0.064***	0.010	-0.004	0.012	-0.007	0.006
Age at spell entry						
Age 21-25	-0.014	0.339	-0.264	0.181	0.281***	0.085
Age 26-30	0.554*	0.314	-0.575**	0.230	0.239**	0.096
Age 31-35	0.222	0.333	-0.443**	0.219	-0.045	0.101
Age 36-40	0.752**	0.316	-0.744***	0.251	0.116	0.106
Age 41-45	0.960***	0.299	-1.099***	0.259	-0.098	0.109
Age 46-50	1.138***	0.294	-1.150***	0.267	-0.178	0.112
Age 51-55	1.291***	0.295	-1.028***	0.267	-0.395***	0.119
Age 56+	1.520***	0.290	0.513***	0.187	-0.806***	0.124
Female	-0.154	0.134	1.366***	0.120	-0.155***	0.056
Family status (at spell entry)						
Married	0.083	0.161	0.323**	0.142	0.051	0.078
Have dependent child	-0.245	0.200	-0.096	0.189	-0.044	0.091
ATSI and country of birth						
ATSI	0.079	0.264	0.265	0.176	-0.738***	0.100
ESB	-0.304	0.256	-0.089	0.229	0.107	0.106
NESB	-0.124	0.172	-0.141	0.168	-0.078	0.077
Region of Residence (at spell entry)						
Balance of NSW	0.121	0.209	0.040	0.194	-0.066	0.093
Melbourne	-0.170	0.201	-0.188	0.199	0.049	0.087
Balance of VIC	0.001	0.261	-0.318	0.257	-0.138	0.117
Brisbane	0.272	0.253	0.207	0.236	0.247**	0.114
Balance of QLD	-0.453*	0.250	0.331*	0.195	0.107	0.100
Adelaide	-0.340	0.308	-0.369	0.293	-0.080	0.125
Balance of SA	-0.791	0.541	-0.116	0.338	0.062	0.162
Perth	-0.106	0.328	0.081	0.280	0.228*	0.130
Balance of WA	-0.376	0.494	-0.663	0.427	0.388**	0.160
TAS	-1.360**	0.611	0.063	0.298	-0.262	0.160
NT/ACT	-0.549	0.500	-0.395	0.377	-0.213	0.181
Spell cohorts						
spells started in 2003	0.221	0.240	0.172	0.200	0.097	0.092
spells started in 2004	0.058	0.247	0.006	0.205	0.153*	0.092
spells started in 2005	-0.077	0.251	0.109	0.205	0.136	0.093
spells started in 2006	0.293	0.244	-0.071	0.211	0.136	0.095
spells started in 2007	0.553**	0.258	0.037	0.234	-0.123	0.113
IS history in 2 years prior to spell entry						
Received UB	-0.177	0.133	-0.203*	0.114	-0.225***	0.054
Received other payments	0.181	0.158	0.423***	0.140	-0.393***	0.079
constant	-4.041***	0.351	-3.031***	0.256	-0.203*	0.117
Pseudo R2	0.072					
Number of obs.	7,617					

Notes: ***, **, and * indicate the coefficient estimate being significant at 1%; 5%; 10% respectively.

Consecutive TIE spells are treated as a single TIE spell. Two or more TIE spells reflect non-consecutive spells.

Number of fortnights on TIE is cumulative number of fortnights within the initial 12 months on UB (i.e. across all TIE spells in that window).

Table A2b: Multinomial logit coefficient estimates: Income Support Receipt Status at 12 month follow-up after initial 12 months on ATPP (ATPP sample)

	On other IS		Off IS payments	
	Coef.	S.E	Coef.	S.E
TIE history within initial 12 months since spell entry				
Have one TIE spell	0.221	0.398	0.129	0.080
No. of fortnights with TIE	0.035	0.036	0.014*	0.008
Age at spell entry				
Age 36-45	-0.868***	0.236	-0.400***	0.046
Age 46-64	-0.765**	0.299	-0.366***	0.057
Female	-0.317	0.336	-0.289***	0.067
Family status (at spell entry)				
Married	0.490	0.329	0.604***	0.057
No. of dependent kids	-0.241	0.150	-0.056**	0.027
Youngest child aged 12+	1.168***	0.248	1.109***	0.043
ATSI and country of birth				
ATSI	0.131	0.434	0.105	0.082
ESB	0.516	0.340	0.101	0.069
NESB	0.479*	0.266	-0.044	0.053
Region of Residence (at spell entry)				
Balance of NSW	-0.227	0.365	-0.033	0.067
Melbourne	-0.234	0.325	-0.073	0.062
Balance of VIC	-0.059	0.434	-0.045	0.081
Brisbane	-0.233	0.444	0.097	0.079
Balance of QLD	0.056	0.370	0.066	0.072
Adelaide	-0.563	0.563	-0.097	0.089
Balance of SA	0.706	0.526	-0.085	0.126
Perth	-0.066	0.452	-0.024	0.087
Balance of WA	0.693	0.489	0.061	0.125
TAS	0.396	0.565	0.169	0.111
NT/ACT	-0.189	0.769	0.252*	0.131
Spell cohorts				
Spells started in 2007	-5.471***	0.364	-2.520***	0.267
IS history in 2 years prior to spell entry				
Received IS	-3.422***	0.563	-3.689***	0.400
constant	4.481***	0.742	5.313***	0.481
Pseudo R2	0.074			
Number of obs.	16,563			

Notes: ***, **, and * indicate the coefficient estimate being significant at 1%; 5%; 10% respectively.
Number of fortnights on TIE is cumulative number of fortnights within the initial 12 months on ATPP (i.e. across all TIE spells in that window).