

Movement Between Benefit Types

Mark N. Harris* and Guyonne Kalb†

Melbourne Institute of Applied Economic and Social Research,

University of Melbourne

February 2002

Final report prepared for the Department of Family and Community
Services

Contents

1	Introduction	11
2	The Data	12
3	Methodology	14
	3.1 Point-in-time individual-based transition tables	14
	3.2 Spell-based transition table	15
	3.3 Spell durations	15
	3.4 Empirical Hazard and Survivor Functions	16
	3.5 General issues	16
4	Results from the Individual-Based Transition Approach	18
	4.1 Unemployment Benefits	22
	4.2 Sole Parent Payments	24

*Also associated with the Central European University, Budapest, Hungary.

†**Acknowledgements:** We are grateful to Jeff Borland, Yi-Ping Tseng, Roger Wilkins and the department of Family and Community Services (FaCS) for valuable comments and suggestions. However, the views (and any errors or omissions) in this paper are those of the authors alone, and do not represent those of FaCS or associated departments.

4.3	Partner and Parenting Payments	26
4.4	Disability and Sickness Payments	28
4.5	Other Payments	28
5	Results from the Spell-Based Transition Approach	30
5.1	Transitions for the Total Population	32
5.2	Transitions by Gender	33
5.3	Transitions by age	35
5.4	Transitions by Marital Status and Partner's Benefit Receipt	37
5.5	Transitions by the Age of the Youngest Child	37
6	Results from the Duration Based Approach	39
6.1	All Spells Together	39
6.2	Spells by Payment Type	41
6.3	Spells by Individual Characteristics	43
7	Results from Alternative Spell Definitions	45
7.1	Results from using Fresh Spells	45
7.2	Results after Merging Short Spells	47
8	Results from the Empirical Hazard and Survivor Functions	50
8.1	Unemployment Hazard and Survivor Functions	50
8.2	Sole Parent Hazard and Survivor Functions	53
8.3	Partner and Parenting Hazard and Survivor Functions	57
8.4	Disability Hazard and Survivor Functions	60
8.5	Other Hazard and Survivor Functions	62
8.6	Survival Rate Summary	62
9	Conclusions	64
A	Appendix: Yearly transition tables	66

List of Tables

4.1	Transition Table: July 1995-June 2000 ^a	19
4.2	Transition Table: September 1995-September 1996 (using SEUP data) ^a	21
4.3	Percentage Inflow Table: Unemployment	23
4.4	Percentage Outflow Table: Unemployment	23
4.5	Percentage Inflow Table: Sole parent	25

4.6	Percentage Outflow Table: Sole parent	25
4.7	Percentage Inflow Table: Partner and parenting	27
4.8	Percentage Outflow Table: Partner and parenting	27
4.9	Percentage Inflow Table: Disability	29
4.10	Percentage Outflow Table: Disability	29
4.11	Percentage Inflow Table: Other	31
4.12	Percentage Outflow Table: Other	31
5.1	Transition Table: All Spells Current between December 1994 and June 2000 ^a	33
5.2	Spell-based Transition Table: by gender ^a	34
5.3	Spell-based Transition Table: by age ^a	36
5.4	Spell-based Transition Table: by marital status and partner's benefit receipt ^a 38	
6.1	Durations and number of spells	40
6.2	Average spell duration by Payment Type	42
6.3	Average spell duration, total duration and number of spells by characteristics ^a 44	
6.4	Average Spell Duration by Gender and Payment Type	45
7.1	Transition Table: Fresh Spells Started between March 1995 and June 1995 ^a	46
7.2	Average duration and number of spells for fresh spells only	47
7.3	Average duration and number of spells for fresh spells only, by payment type	47
7.4	Transition Table: after merging short spells ^a	48
7.5	Average duration and number of spells after merging short spells	49
7.6	Average duration and number of spells after merging short spells, by payment type	49
8.1	Summary Table: Survival Rates by Payment Type	64
A.1	Transition Table: July 1995-July 1996 ^a	66
A.2	Transition Table: July 1996-July 1997 ^a	67
A.3	Transition Table: July 1997-July 1998 ^a	68
A.4	Transition Table: July 1998-July 1999 ^a	69
A.5	Transition Table: July 1999-July 2000 ^a	70
A.6	Spell-based Transition Table: by Age Youngest Child ^a	71

A.7	Sole Parent and Partner and Parenting Transitions by Age Youngest Child ^a	72
A.8	Sole Parent and Partner and Parenting Transitions by Age Youngest Child ^a	73
A.9	Sole Parent and Partner and Parenting Transitions by Age Youngest Child ^a	74
A.10	Sole Parent and Partner and Parenting Transitions by Age Youngest Child ^a	75
A.11	Sole Parent and Partner and Parenting Transitions by Age Youngest Child ^a	76
A.12	Sole Parent and Partner and Parenting Transitions by Age Youngest Child ^a	77

List of Figures

6.1	Frequency distribution of spell duration and total duration within 5-year data window	41
6.2	Frequency distribution of the number of spells	42
8.1	Empirical Survivor Function: Unemployment Benefits; All and by Gender .	51
8.2	Empirical Survivor Function: Unemployment Benefits; by Age	51
8.3	Empirical Hazard Function: Unemployment Benefits; All and by Gender .	52
8.4	Empirical Hazard Function: Unemployment Benefits; by Age	52
8.5	Empirical Survivor Function: Sole Parent Payments; All and by Age and Gender	54
8.6	Empirical Survivor Function: Sole Parent Payments; by Age and Number of Children	55
8.7	Empirical Hazard Function: Sole Parent Payments; All and by Age and Gender	55
8.8	Empirical Hazard Function: Sole Parent Payments; by Number of Children	56
8.9	Empirical Hazard Function: Sole Parent Payments; by Age of Youngest Child	56
8.10	Empirical Survivor Function: Partner and Parenting Payments; All and by Age and Gender	58
8.11	Empirical Survivor Function: Partner and Parenting Payments; by Age and Number of Children	58
8.12	Empirical Hazard Function: Parent and Partnering Payments; All and by Gender and Age	59
8.13	Empirical Hazard Function: Parent and Partner Payments; by Number and Age of Youngest Child	59
8.14	Empirical Survivor Function: Disability Payments; All and by Gender . . .	60

8.15 Empirical Survivor Function: Disability Payments; by Age	61
8.16 Empirical Hazard Function: Disability Payments; All and by Gender . . .	61
8.17 Empirical Hazard Function: Disability Payments; by Age	62
8.18 Empirical Survivor Function: Other; All and by Age and Gender	63
8.19 Empirical Hazard Function: Other Payments; All and by Gender and Age .	63

Executive Summary

In this report, the transitions between seven groups of income support payment types are examined. The payment type categories are unemployment payments, sole parent payments, partner and parenting payments, disability and sickness payments, age pension¹, and other payments. In addition, we have defined two categories of individuals not receiving payments: the non-payment partner category and the no payments category. The first group of individuals not receiving payments are partners of people who do receive income support payments and the second group are either singles not receiving income support payments or individuals whose partner is not on payments either.

Using different methods of measurement we analyse the mobility between the above categories. The measures used are point-in-time individual-based transition tables, spell-based transition tables, average payment spell durations, average total duration on payments, average number of spells and hazard (also called exit) rates and survival rates from the different payments measured over time². In all the spell-based measurements, each transition between payment types is recorded independent of the permanency of the transition. However an exit off payments is not recorded unless the exit lasts for at least 6 weeks.

From a comparison of the different payment types and the flows between them, the following is found:

- The highest retention rate (probability of remaining on the same payment type) is observed for people on disability payments and the lowest for those on unemployment payments. This result is evident from all the different measurement approaches, for

¹This payment category is only used as an outflow source, given the low probability of people moving off age pension once they are on it.

²Spell-based transition tables, average payment spell durations and total durations on payments are all measured within the data window for which a sample from the Longitudinal Data Survey is available, that is from 22 December 1994 to 16 June 2000.

example, disability payments have the longest average spell duration and the lowest hazard (exit) rate, which falls to nearly zero after about 30 fortnights.

- The most important inflow and outflow category for all payment types is the no payments category, except for disability payments, where age pension is the most important outflow source. The latter again reflects the high retention rate of disability payments. The next largest category for inflows and outflows is the non-payment partner category for those on sole parent payments (for inflows the partner and parenting payment group is equally important), partner and parenting payments and unemployment payments. For those on disability payment the next largest inflow source is the group of unemployment payments and for those on other payments this is the next largest inflow and outflow source. For the disability payment category this is more than a third of the total inflow.
- Inflows into unemployment payments decreased when the national unemployment rate decreased, however at the same time little effect is observed on the retention rate in unemployment. From the hazard rate figures, it can be seen that there is a downward trend in the probability of exit off unemployment payments as the duration of the spell gets longer. This could explain why the retention rate is less responsive to cyclical fluctuations than the inflow rate.
- At least around 9 per cent of inflow and outflow to and from sole parent payments are due to break-ups and re-partnering respectively. This is about the same amount as the outflow from sole parent payments off payments, of which at least part may be due to sole parents finding employment.
- People on partner and parenting payments are not completely outside the labour force, as is indicated by inflows and outflows to and from the non-payment partner

category. From 1995 to 1996 high inflows are observed as a result of the introduction of a more individualized benefit system, which means partners of benefit recipients have to apply for benefits in their own right. They either have to apply for an unemployment benefit, which means they have to look for work to remain eligible, or for a partner and parenting payment, which has no such eligibility requirement.

- A large flow from unemployment payments to other payments is observed from 1996 to 1997. This seems caused by a large inflow into Widow Allowance in that year. However, in absolute terms the number of people involved is small.

Comparing mobility for people with different characteristics:

- Women are more likely to move off unemployment benefits than men, which is also reflected in shorter average durations, but not in the exit rate of unemployment, which is similar for men and women.
- On the other hand, women are less likely to move off any of the other payment types, which is obvious from the fact that women have longer spells except in the miscellaneous category "other payments" and the fact that women clearly have lower exit rates on these payments than men.
- Examining all spells jointly shows that women have on average longer spells, but that the average number of spells is the same as for men.
- Older people have higher retention rates, longer spell durations, fewer spells and are less likely to move off payments.
- Older people on sole parent payments are more likely to exit to another payment type (as their eligibility for a sole parent payment runs out).

- The higher exit rates of young people on disability payments is in particular prevalent at the start of the spell. After one year, hazard rates for the different age groups are quite similar.
- Although higher transition rates are observed into the other payment categories, for sole parents whose eligibility is running out, the outflow off payments also increases substantially for this group. Re-partnering is more likely for sole parents with young children, most probably reflecting their own younger age.

Analysis of the distribution of spell durations within the five-and-a-half-year time window shows:

- Spells are long on average (384 days), but more than a third of all spells last less than about 100 days (7 fortnights).
- Individuals who had at least one payment spell in the five-and-a-half-year time window, spend on average a total of 868 days on payments, indicating that several people have more than one spell on payments during the time window. However, even for the total duration on payments, about 17 per cent was on payments for less than 100 days during the time window.
- Examining the long spells, it is found that about 5 per cent of all spells were spells of 5 years or longer. About 15 per cent of all individuals had a duration of 5 years or more if the duration of all payment spells are added together.

Finally, the effect of alternative specifications:

- Including fresh spells³ only in the spell-based transition tables and in calculating average durations and the average number of spells, did not result in large changes

³That is, all spells that started before the start of the data window of the sample are excluded.

in the outcomes. The largest changes are for the disability and sole parent payments, which have the longest spell durations and as a result more spells are excluded than for the other types of payment. In addition, the excluded spells are likely to be longer spells. Given the decrease in hazard rates further into a spell, the analysis that uses fresh spells only, results in a lower retention rate and a higher probability of (temporarily) moving off payments.

- After merging short payment spells (less than 6 weeks in duration) with preceding payment spells⁴, the average spell duration increases and the number of spells decreases. This alternative specification seems most relevant for the sole parent and partner and parenting payments. The probability of moving off payments decreases, which indicates that there are short off-payment spells in between two spells of a different payment type, where the latter spell is a short payment spell.

⁴This means short spells are not counted separately but added to the most recent previous longer spell (of at least 6 weeks long) or to the most recent previous short spell which is the first spell on income support after at least 6 weeks off payments. If there is a sequence of short spells, they are all added to the most recent previous long spell or the most recent first spell on payments.

1. Introduction

This paper describes the incidence of movement between certain income support payment types, the characteristics of the Department of Family and Community Services (FaCS) customers who undertake such movements, and also the timing of movements.

The aim is to provide important information on several issues of policy interest. For example, the extent of movement from unemployment payments to some types of benefit, such as disability payments, may be an indicator of the extent and nature of hidden unemployment. Understanding the extent of movement from unemployment payments to other payment types is also important for assessing the effects of policy changes such as the introduction of more stringent activity test arrangements, and for determining the extent to which data on the duration of spells on unemployment payments may understate the reliance on welfare of unemployed persons. Another example likely to be of policy interest, is the degree of mobility from sole parent payments. In particular, the extent of movement from sole parent payments to other payment types around the date at which the youngest child reaches 16 years of age may be of interest.

Transitions to and from the following payment types are considered: 1. unemployment allowances (including, for example, Newstart Allowance, Job Seeker Allowance, Youth Training Allowance and Youth Allowance); 2. sole parent payments; 3. partner and parenting payments; 4. disability payments; 5. other benefits; and 6. age pension. Not all payment types are analysed to the same extent, for example there are unlikely to be many movements *from* Age Pension, and moreover movements into such from any other type of benefit, is simply driven by customer ages. Therefore age pension is only considered as a possible destination for other types of payment recipients to exit to. In addition, inflow from, and outflow to, a "no payments" category is distinguished. However the stock in this category is not representative of all people off payments in the same way as the other

categories are representative of all people on a particular payment at a point in time, as the sample is not drawn from the general population, but from the customer population of FaCS (see Section 2). That is, the probability of remaining off payments cannot be analysed with these data.

The data used in this paper covers the period from 1995 to 2000. During the whole of this period the business cycle was going upwards. As a result, we cannot attribute changes in transition behaviour to trends or business cycle effects.

To explore the mobility of income support recipients, different measurement methods are used. They are point-in-time individual-based transition tables, spell-based transition tables, average payment spell durations, average number of payment spells, total duration of payment spells within the observed data window, and empirical hazard and survivor functions. All the approaches used in this paper are descriptive in nature.

The next section provides a brief description of the data set used for the analysis in this paper. Section 3 defines the different ways in which transitions are measured in the empirical section of the paper. The descriptive results, using the different approaches identified in Section 3, are presented in Sections 4 to 7. Section 8 makes use of hazard rate models to analyse the data, and finally Section 9 concludes.

2. The Data

The data used in this paper is the Longitudinal Data Survey (LDS) produced by FaCS⁵. The data consists of a 1 per cent random sample of all customers and partners of customers on the administrative database. Only the records of people who were on income support (this excludes people solely receiving family payments) or whose partner was on income support are included. The version of the LDS used here contains fortnightly records for this sample between 22 December 1994 and 16 June 2000.

⁵For more information see Department of Family and Community Services (2001).

The advantage of this data set is that it allows the study of transitions between different payment types. Other data sets (such as for example the Survey of Employment and Unemployment Patterns) do not have enough respondents from the population of interest to provide a reliable picture of these transitions by subgroups or they do not have information on income support receipt by individuals over time (such as the Survey of Income and Housing Cost). In addition, administrative data provide reliable information on episodes of income support over time, which allow the construction of a sequence of income support variables, creating a history of income support for each individual in the sample.

However, a disadvantage of the LDS is that it only includes a limited set of variables describing the individuals and households in the data set. The LDS contains a few personal and household characteristics such as age, gender, number of children, age of the youngest child, marital status, and postcode. The data set also contains education which, amongst others, is potentially an important factor in the transitions between and out of payments. However, at the moment this variable is unavailable (or unreliable) for most customers.

The different payment categories are formed in the following way:

1. Unemployment related payments include: Newstart Allowance; Job Seeker Allowance; Youth Training Allowance; Youth Allowance (excluding those who are full-time students); Newstart Mature Age Allowance; and Mature Age Allowance.
2. Sole Parent Payments include: Sole Parent Pension and Parenting Payment Single.
3. Partner and Parenting Payments include: Wife's Disability Support Pension; Wife's Disability Wage Supplement; Partner of Newstart Recipient; Partner of Pension Recipient; Partner of Person on Low Income; Partner Allowance; Parenting Allowance; Partner of dependent Youth Allowance recipient; and Mature Age Partner Allowance.

4. Disability and Sickness Payments include: Disability Support Pension; Disability Wage Supplement; Rehabilitation Allowance; and Sickness Allowance.
5. Age Pension includes: Age Pension; Widow Pension and Wife's Age Pension.
6. Non payment partner (including those who only receive family payments) include: non-payment spouse; Family Payment (FP) Work force; Family Payment Auto Minimum; FP minimum; and Family Payment Auto - More than Minimum.
7. Other Payments include: all remaining payment types except those on AUSTUDY (examples of these payments are: Carer Payment; Drought Relief Payment or Crisis Payment).

3. Methodology

There are numerous ways in which it is potentially possible to define and measure movements across benefit types. In this section we discuss point-in-time transition tables, spell-based transition tables, spell durations, and empirical hazard and survivor functions.

3.1. Point-in-time individual-based transition tables

First, *point-in-time individual based transition tables* are considered. These provide cross-tabulations of numbers in each of the payment types of interest at pre-specified start and finish dates. That is, individuals are classified by where they were at a particular start date, and where they ended up at a pre-specified end date. This provides information not only about outflows from payment types, but also on the outflow destinations. Such analysis was undertaken at several points in time; over adjacent one-year periods (for example, from July 1995 to July 1996), and also over the full 5-year period (July 1995 to July 2000) for which the LDS is available.

3.2. Spell-based transition table

An alternative, spell-based, approach presents data on *all* spells starting in the data window on a particular benefit, and recording the total number of exits from these and their exit destinations. One could now state what percentage of sole parent payment spells, for example, ended in a movement to unemployment benefits; did not finish within the specified time window; and so on. This compares with the transition tables from the previous section providing a point-in-time incidence description, which is likely to disguise additional movements *within* the specified time frame. For example, a customer who starts and ends on the same benefit type, would be recorded as a “non-mover”, although he/she may well have had several periods on and off various other benefits (or indeed, off the register altogether) within the intervening period.

3.3. Spell durations

Average durations in particular payments were also investigated, as was the average duration on all benefits, taken together within the five-year data window. This was considered in conjunction with the average number of spells on each particular payment type.

An issue in such an analysis is whether to use “fresh” spells (spells which only started within the data window) in each selected payment type, or conversely to use *all* spells (both fresh spells and spells in progress at the start of the data window). The advantage of the former is that it avoids any *length based sampling bias* - that is, over-sampling of longer durations, but it disregards potentially a lot of information, and *vice versa* for the latter.

In the descriptive analyses of this section, the sample of all spells are considered at first, indicating the average total duration on benefit payments of customers who had at least one payment during the five-year data window. The durations are truncated on the “left-hand” side by only taking into account the part of the spell current in the five-year data

window. Both complete and incomplete spells are included which means the durations are “right-hand” truncated as well.

3.4. Empirical Hazard and Survivor Functions

This subsection introduces a method to combine the measurement of durations and transitions. Empirical hazard functions are a method to describe the rate at which spells finish after time t , conditional on the fact that they have lasted to at least time t . An alternative description of the data, is the Survivor function, which describes the probability that the spell lasts at least time t . Using the estimator proposed by Kaplan and Meier (1958), and appropriately dealing with right censored observations (those still in progress at the end of the data window)⁶ separate empirical Hazard and Survivor functions are estimated for each of the payment types of interest. In these analyses we only use fresh spells to avoid length-based sampling bias as a result of the left censoring of the observations.

3.5. General issues

The construction of these transition tables and spell durations is based on the assumption that customer identification numbers in the LDS are unique and that a person who has several separate spells on payments is identified by the same identification number each time a new spell is started. According to our information, the name and date of birth are used by Centrelink to check whether an applicant has already been on income support in the past. As a result, the danger of matching two spells of different persons is not so large, given that the additional information on date of birth and name are likely to uncover such a mistake. The danger of “losing ” a person because a new number is assigned to a person re-entering payment is more realistic and might become more likely when the time off payment increases. This may be more likely for women (who may change their marital

⁶Right censored observations enter the risk set, but are not recorded as an observed exit - see Lancaster (1990).

status and as a result their name) and for people with non-English names (which may be more difficult to spell for the Centrelink officer). If a person gets "lost", the average total duration on payments per person will be underestimated and in the transition tables people will seem more likely to move off payments than they truly are, because returning customers are introduced as new persons and are not linked to their previous spells on income support.

Temporary short-term spells off payments are not counted as exits. An exit off all payments is defined as a period off payments lasting at least six weeks, which conforms with the definition used by FaCS. However, transitions to other payments are not defined conditional on the duration in the exit destination. Thus, temporary short-term movements from one payment type to another are included. However, it is expected that there are unlikely to be many short-term transitions to other payments. In order to check this assumption, a sensitivity analysis is performed using a definition similar to the exit to the off-payment category for all transitions between payments as well. In the case of several short spells in a row, these are all added to the previous adjoining longer spell or to the first short spell on a payment after at least 6 weeks off payments.

For the spell durations and the spell-based transition tables, the sample of all spells is used. The duration of the spells is measured from the start of the data window available in the sample (December 1994). This approach of including all spells is compared to the approach which uses only fresh spells (that is starting after 1 March 1995).⁷ The latter approach is expected to exclude some of the longer spells.

⁷Choosing this date allows us to check whether the individual was in another payment type or has been off payments for at least 6 weeks.

4. Results from the Individual-Based Transition Approach

The results based on individual transitions for the full sample period (that is from July 1995 to July 2000), are presented in Table 4.1. This table shows for example that in the fortnight of 7 July 1995, 8325 people were on unemployment payments (see the total in the first row). Of these 8325 individuals, 2336 (or 28 per cent) were also on unemployment payments in the fortnight of 16 June 2000. Examining the outflow, the table shows that 3718 individuals (45 per cent) are off payments in 2000 and 663 (or 8 per cent) are on disability payments in 2000. Comparing the total number on unemployment payments in 1995 and 2000, it can be seen that there was a decrease of 1161 (= 7164 (the total in the first column) - 8325).

It is interesting to consider so-called “retention rates”. That is, what percentage of customers claiming a particular benefit type in a particular year, were still doing so in a later year? With regard to the 1995 to 2000 results, of the 8,325 persons claiming unemployment benefits in 1995, about 28 per cent were still claiming the same benefit in 2000. Retention rates are highest for disability and sole parent payments, with rates of 65 and 49 per cent, respectively.

By far the dominant destination for movements from all benefit types, was into no payments. For example, 43 per cent of the persons claiming an unemployment benefit, 25 per cent of those claiming sole parent payments and 13 per cent of those claiming disability payments were off payments in 2000. However, for disability payments the most significant destination was age pension (at 19 per cent)⁸. This information combined with the 65 per cent retention rate means that at most 16 per cent leave this payment category because they are no longer considered to have a disability that impedes employment.

For all payment types, the majority of people not in the same payment in 1995 as

⁸This again reflects the high retention rate of disability payments. People stay on the payment until they become eligible for age pension at 60 or 65.

Table 4.1: Transition Table: July 1995-June 2000^a

2000										
1995	unemp.	sole p.	p. & p.	dis.	other	age	no p.p.	no p.	total	change
unemp.	2336	325	183	663	133	498	469	3718	8325	-1161
<i>per cent</i>	28	4	2	8	2	6	6	45	100	-14
sole p.	218	1553	167	143	55	9	243	813	3201	689
<i>per cent</i>	7	49	5	4	2	0	8	25	100	22
p. & p.	111	281	1336	139	84	648	283	758	3640	-66
<i>per cent</i>	3	8	37	4	2	18	8	21	100	-2
dis.	59	20	7	3304	7	964	29	677	5067	1053
<i>per cent</i>	1	0	0	65	0	19	1	13	100	21
other	21	20	12	50	133	78	42	123	479	420
<i>per cent</i>	4	4	3	10	28	16	9	26	100	88
no p.p.	264	333	345	136	52					
<i>per cent</i>										
no p.	4151	1354	1520	1677	416					
<i>per cent</i>										
total	7164	3890	3574	6120	899				20712	935

^ano payments (no p.) and non-payment partner (no p. p.), are only of interest as inflow or outflow sources to other payments and do not represent the complete populations of people in these categories.

they are in 2000 have come from the no payments category. The next largest inflow previously were in the non-payment partner category for those on sole parent payments, unemployment benefits or on partner and parenting payment in 2000. However, people on a disability payment or other payment in 2000 were more likely to have flowed in from an unemployment payment.

As noted in the previous section, such transitions between start and end dates which are several years apart, do not provide information on movements across benefit types within the intervening years. The transition tables for these intervening years are reported in Tables A.1 to A.5 in the Appendix. The tables are discussed by payment type below in subsections 4.1 to 4.5.

First, however, the transitions between 1995 and 1996 are compared to those over a comparable period in a study using the Population Reference Group and Job Seeker sample from the Survey of Employment and Unemployment Patterns (SEUP). Kalb (2000) calculates transition rates between September 1995 and September 1996 for different benefit types, which are broadly comparable to the ones used in this paper. Although the number of observations in these SEUP samples is much smaller than in the LDS, similar patterns are observed (see Table 4.2).

The group on disability payments are most likely to remain on the same payment type and the group on unemployment benefits are most likely to exit the payment type. Furthermore, a similar ranking of exit destinations can be observed, where most people exit to the off-payments category and, for example, people on partner and parenting payments have a considerable probability of moving onto sole parent payments. The percentages are different, which is not surprising because the general population sample in the SEUP is quite small whereas the Jobseeker sample consists of a particular subgroup, which is different from the LDS sample.

Table 4.2: Transition Table: September 1995-September 1996 (using SEUP data)^a

1996							
1995	unempl.	sole par.	p.&p.	disab.	other	no p.	total
	per cent	per cent	per cent	per cent	per cent	per cent	number
<i>Population Reference Group</i>							
unempl.	56.1	0.0	0.0	3.0	0.0	40.9	66
sole par.	2.0	94.1	3.9	0.0	0.0	0.0	51
p.&p.	2.1	4.2	72.9	0.0	2.1	20.8	49
disab.	5.6	0.0	0.0	86.1	0.0	8.4	36
other	0.0	0.0	0.0	0.0	93.9	6.1	33
no p.	1.5	0.1	0.3	0.2	0.3	97.5	1507
<i>Jobseekers</i>							
unempl.	63.7	0.2	0.5	2.5	0.9	32.2	1225
sole par.	1.3	91.4	1.3	0.0	1.3	4.6	152
p.&p.	3.3	5.6	67.8	0.8	0.0	22.3	121
disab.	2.9	0.0	0.0	97.1	0.0	0.0	68
other	2.6	5.3	0.0	0.0	89.5	2.6	38
no p.	8.4	1.4	2.2	1.5	0.4	86.1	2201

^aSource: Kalb (2000), Table 3.6, p.24.

4.1. Unemployment Benefits

Table 4.3 shows the sources of inflows into unemployment for the different years⁹. The total in the 95-96 column represents the total number on unemployment benefits in 1996. The percentages in the rows above explain where these people were in 1995. For example, 51 per cent (first column, first row) of those who were unemployed in July 1996 were also unemployed in July 1995, 1 per cent was on a sole parent payment, 3 per cent was not on payment but had a partner on payment and 42 per cent was not on any payment. Similarly Table 4.4 shows the destinations of outflows from unemployment for the different years. The total in the 95-96 column now represents the total number on unemployment benefits in 1995. The percentages in the rows above explain where these people go to in 1996. For example, 53 per cent (first column, first row) of those who were unemployed in July 1995 were still unemployed in July 1996, 2 per cent exited to a sole parent payment, 6 per cent was not on a payment anymore but still had a partner on payment and 34 per cent was not on any payment.

From these two tables it is clear that the main source of inflow and outflow is the no payments category. On a year-to-year basis, retention rates for unemployment benefits are relatively high and stable, ranging from 53 to 61 per cent (see Table 4.4). There was a steady increase in the total numbers from 1995 to 1996, 1996 to 1997 and 1997 to 1998. The reduction in numbers resulting from those leaving these benefits, was essentially compensated for by inflows from no payments.

However, 1999 and 2000 witnessed a significant decrease in the number of people on unemployment benefits, representing a decrease of about 11 and 12 per cent respectively. This decrease in numbers coincides with a fall in national unemployment rates in Australia. The fall in the number of people on unemployment benefits appears to be primarily as a

⁹This table is a summary of the sources of inflow into unemployment over the 5 available years of data as presented in tables A.1 to A.5 in the Appendix.

Table 4.3: Percentage Inflow Table: Unemployment

	95-96	96-97	97-98	98-99	99-00
unemp.	51	55	59	64	64
sole p.	1	1	1	1	1
p. & p.	1	1	1	1	1
dis.	1	1	0	0	0
no p.	42	38	35	30	30
other	0	0	0	0	0
no p.p.	3	4	3	3	2
total	8636	8805	9147	8131	7164

Table 4.4: Percentage Outflow Table: Unemployment

	95-96	96-97	97-98	98-99	99-00
unemp.	53	56	61	57	57
sole p.	2	1	1	1	2
p. & p.	1	1	1	1	1
dis.	3	3	3	3	3
other	1	1	0	1	1
age	1	1	2	2	1
no p.p.	6	5	4	3	4
no p.	34	32	28	32	31
total	8325	8636	8805	9147	8131

result of reduced inflows (especially from the dominant source, no payments) as opposed to a reduction in the probability of remaining on unemployment benefits (Table 4.3). This seems to indicate that during the up-turn phase of the business cycle, fewer people became unemployed but that this improvement had little effect on the re-employment probabilities of those already unemployed.

4.2. Sole Parent Payments

The main source of inflows and outflows for sole parent payments is the no payments category (Tables 4.5 and 4.6). However, the percentage flowing in and out is much smaller than for unemployment payment recipients. A substantial source of in- and outflow is the non-payment partner category, closely followed by the partner and parenting payment category. Compared to unemployment related payments, retention rates for sole parent payments on a year-to-year basis, are very high and even more stable, ranging from 76 to 81 per cent. Annually, the net number of claimants rises by around 5 per cent, the result of the large retention rates and inflows predominantly from no payments. In all years, the inflow from no payments slightly exceeds the outflow off payments.

At least 7 to 9 per cent of the sole parents re-partner each year as is indicated by the outflow into partner and parenting payments and to the non-payment partner category. After a 5-year period, at least 13 per cent of the sole parents have re-partnered (see table 4.1). Similarly, after no payments, the partner and parenting payments and the non-payment partner category are the main sources of inflow into the sole parent payments (both at around 4 to 5 per cent). This means that at least 9 to 10 per cent flows in because of a recent break-up of a relationship.

Table 4.5: Percentage Inflow Table: Sole parent

	95-96	96-97	97-98	98-99	99-00
unemp.	4	3	3	4	4
sole p.	74	76	73	77	77
p. & p.	4	5	5	5	5
disab.	0	0	0	0	0
no p.	13	12	12	10	10
other	1	0	0	0	0
no p.p.	5	4	5	4	4
total	3382	3397	3624	3713	3890

Table 4.6: Percentage Outflow Table: Sole parent

	95-96	96-97	97-98	98-99	99-00
unemp.	3	3	3	3	3
sole p.	78	76	78	79	81
p. & p.	4	4	4	4	3
disab.	1	1	0	0	1
other	0	0	0	0	0
age	0	0	0	0	0
no p.p.	4	5	4	5	4
no p.	9	11	9	9	9
total	3201	3382	3397	3624	3713

4.3. Partner and Parenting Payments

Similar to all the other payment types, the most important source of inflow and outflow is the no payments category (Tables 4.7 and 4.8). However, it is interesting to note that the flows to and from non-payment partner category are substantial as well. Given that the partners of individuals in the non-payment partner category are still on income support and that an individual's income first reduces their own share of income support to zero before it starts to reduce their partner's payment, it is reasonable to assume that these individuals have found a job that has taken them off income support. This indicates firstly, that people on partner and parenting payments flow out to employment, even though eligibility for this payment category does not require searching for work. Secondly, partners who worked previously seem to form a substantial proportion of the inflow as well.

On an annual basis, retention rates for partner and parenting payments were generally higher than those for unemployment benefits, but lower than those of either sole parent payments and disability payments, ranging from 68 to 73 per cent. 1996 witnessed a 12 per cent increase in the numbers receiving partner and parenting payments, the result of a higher retention rate and relatively high inflows from the no payment and non-payment partner category (compared to other years). This is probably due to the introduction of more individualized benefits for partners of unemployed benefit recipients in July 1995. Before July 1995, the main applicant would get an additional payment if they had a partner. After July 1995, the partner had to apply for a benefit themselves and could be required to look for work. Exceptions are made for parents of children under 15 and for partners over 40 who have little work experience.

Subsequent years saw decreases of 4, 1, 6 and 2 per cent respectively, in the number of people receiving partner and parenting payments. These reductions were predominantly

Table 4.7: Percentage Inflow Table: Partner and parenting

	95-96	96-97	97-98	98-99	99-00
unemp.	2	3	3	3	3
sole p.	3	4	4	4	3
p. & p.	65	72	71	72	73
disab.	0	0	0	0	0
no p.	18	15	14	13	14
other	0	1	0	0	0
no p.p.	11	7	7	7	6
total	4070	3890	3864	3635	3574

Table 4.8: Percentage Outflow Table: Partner and parenting

	95-96	96-97	97-98	98-99	99-00
unemp.	2	2	2	1	1
sole p.	4	4	5	5	5
p. & p.	73	69	71	68	72
disab.	1	1	1	1	1
other	0	1	1	1	1
age	4	5	3	5	3
no p.p.	7	9	7	9	7
no p.	10	11	11	11	9
total	3640	4070	3890	3864	3635

the result of flows into the no payments and non-payment partner categories. For example, in 2000, 9 per cent of those who were on partner and parenting payments in 1999 went into no payments, whilst 7 per cent went into non-payment partner. Like the outflows, the inflows are also mainly from the no payments and non-payment partner categories.

4.4. Disability and Sickness Payments

The largest source of inflow in disability payments is from the no payments category, but the inflow from unemployment payments is not far behind (at more than one third of the total inflow). The largest outflow destination is the age pension, but the outflow to the non-payment category is nearly as large (see Tables 4.9 and 4.10).

Disability payments exhibit the highest retention rates of all payment types on a year-to-year basis. They range from 87 to 91 per cent and have been steadily increasing over time. Since, in addition, age pension is the most likely destination for people who move out of disability payments, the probability of moving to a destination excluding age pension is quite small on a year-to-year basis. In the first three years there were some transitions into the unemployment payments group, but recently this decreased to nil. Overall numbers show a small annual increase (of a couple of percentage points), with the inflow from no payments and unemployment payments consistently exceeding the outflow to these categories.

4.5. Other Payments

The major source of inflow and outflow for this miscellaneous category¹⁰ is no payments (Tables 4.11 and 4.12). However, in addition, there are substantial flows between this category and the other types of payments. The largest flows between payments seem to

¹⁰For example, in the fortnight of 5 July 1996 this category contained people on the following payments: Widow Allowance (19 per cent), Carer Payment (47 per cent), Special Benefit (16 per cent) and Drought Relief Payment (18 per cent).

Table 4.9: Percentage Inflow Table: Disability

	95-96	96-97	97-98	98-99	99-00
unemp.	4	4	5	5	5
sole p.	0	0	0	0	0
p. & p.	1	0	1	1	1
disab.	85	86	86	87	87
no p.	9	7	7	7	7
other	0	0	0	0	0
no p.p.	1	1	1	1	1
total	5228	5359	5639	5873	6120

Table 4.10: Percentage Outflow Table: Disability

	95-96	96-97	97-98	98-99	99-00
unemp.	2	2	1	0	0
sole p.	0	0	0	0	0
p. & p.	0	0	0	0	0
disab.	87	89	90	90	91
other	0	0	0	0	0
age	5	5	4	5	4
no p.p.	0	1	0	0	0
no p.	5	4	4	4	4
total	5067	5228	5359	5639	5873

be between unemployment payments and other payments.

Over the full sample period, the numbers on other payments increased from 479 in 1995 to 899 in 2000, which is an increase of about 88 per cent. This is a reflection of steady increases in these numbers over the intervening years, especially from 1999 to 2000 which displayed the largest increase of 19 per cent, which seems largely due to the high retention rate. From year-to-year, these increases were of the magnitudes of 10, 14, 13, 13, and 19 per cent, respectively. The retention rates of in between 66 and 78 per cent, have increased over time and are higher than for people on unemployment related payments. Inflows and outflows are mainly from and to the no payments group and from and to unemployment benefits.

From 1996 to 1997, a large group (14 per cent) moved into other payments from the unemployment payments. An investigation into the composition of the inflow revealed that the increase was due to an increased inflow into the Widow Allowance. Although the increase is large in percentage terms, in absolute terms the group is small (only 42 individuals for the one per cent sample).

5. Results from the Spell-Based Transition Approach

As noted above in Section 3, this approach involves looking at all spells in the data window (22 December 1994 – 16 June 2000) on a particular benefit, and recording the total number of movements from these to the various different destinations. That is, as opposed to looking at pre-specified start and finish dates, we simply record, for example, how many of the unemployment benefit spells (which were current at some point in the data window) ended by exit into age pension. Both finished and unfinished spells are included in the calculations. The unfinished spells are recorded as remaining in the same payment type. Similar to the transitions in the previous section, interest is focused on

Table 4.11: Percentage Inflow Table: Other

	95-96	96-97	97-98	98-99	99-00
unemp.	8	14	6	8	7
sole p.	1	2	2	2	2
p. & p.	2	4	5	5	4
disab.	0	1	0	0	1
no p.	23	18	21	15	16
other	62	58	61	65	65
age	1	1	1	1	1
no p.p.	3	2	3	4	3
total	525	596	671	757	899

Table 4.12: Percentage Outflow Table: Other

	95-96	96-97	97-98	98-99	99-00
unemp.	5	6	4	4	4
sole p.	4	3	3	0	1
p. & p.	2	4	2	3	2
disab.	5	4	3	2	1
other	68	66	69	73	78
age	2	4	3	5	3
no p.p.	2	3	5	2	2
no p.	12	11	12	11	10
total	479	525	596	671	757

spells on unemployment benefits, sole parent payments, partner and parenting payments, disability payments and other payments. Therefore, we only report the flows from these payments.

Transition probabilities are likely to differ by characteristics, such as age or gender. To examine this, transition tables are generated separately for some subgroups of the sample. We restrict ourselves to presenting tables for three characteristics measured at the start of the spell: gender, age and a variable combining marital status with whether the partner receives benefits as well.

5.1. Transitions for the Total Population

Table 5.1 illustrates the fluidity of the benefits system. Unemployment benefit spells predominantly end with a transition into no payments (68 per cent), with non-payment partner being the only other significant destination, at 12 per cent. Few unemployment spells end by a transition into age pension. This indicates that older people are a relatively small proportion of all unemployment spells although they might be on unemployment payments for a long time. Similarly, the major destination for sole parent payments customers, was no payments (41 per cent), with 8 per cent going to both the non-payment partner category and partner and parenting payments. This indicates that at least 16 per cent of all spells end as a result of re-partnering. Interestingly, only 5 per cent of sole parent payments spells transit to unemployment benefits. Of partner and parenting payment spells, 43 per cent also end in no payments, whilst 18 per cent go to the non-payment partner category and 8 per cent to sole parent payments.

Spells on disability payments are least likely to finish - only 49 per cent flow out, compared to, for example, 85 per cent for unemployment benefit. However, like for the other payment types no payments is the most likely exit destination when looking at all spells, which is different from the result obtained in the previous section. This demonstrates that

Table 5.1: Transition Table: All Spells Current between December 1994 and June 2000^a

start	finish								total
	unemp.	sole par.	p. & p.	disab.	no p.	other	age	no p.p.	
unemp.	7164	879	576	1797	39841	457	596	7155	58465
<i>per cent</i>	<i>12</i>	<i>2</i>	<i>1</i>	<i>3</i>	<i>68</i>	<i>1</i>	<i>1</i>	<i>12</i>	<i>100</i>
sole parent	555	3890	912	65	4515	53	14	919	10923
<i>per cent</i>	<i>5</i>	<i>36</i>	<i>8</i>	<i>1</i>	<i>41</i>	<i>0</i>	<i>0</i>	<i>8</i>	<i>100</i>
p. & p.	377	1321	3580	187	7341	169	834	3085	16893
<i>per cent</i>	<i>2</i>	<i>8</i>	<i>21</i>	<i>1</i>	<i>43</i>	<i>1</i>	<i>5</i>	<i>18</i>	<i>100</i>
disability	502	59	29	6122	3219	24	1380	732	12067
<i>per cent</i>	<i>4</i>	<i>0</i>	<i>0</i>	<i>51</i>	<i>27</i>	<i>0</i>	<i>11</i>	<i>6</i>	<i>100</i>
other	256	196	114	128	859	900	99	271	2818
<i>per cent</i>	<i>9</i>	<i>7</i>	<i>4</i>	<i>5</i>	<i>34</i>	<i>30</i>	<i>4</i>	<i>10</i>	<i>100</i>

^ano payments (no p.) and non-payment partner (no p. p.), are only of interest as outflow sources and do not represent the complete populations of people in these categories.

the point-in-time transition tables can miss some of the shorter spells that start and finish in between the two points in time at which payment types are compared. These shorter spells are more likely to end in the no payment group and are all counted in the approach taken in this section, but not in the approach of the previous section.

5.2. Transitions by Gender

Table 5.2 presents transitions broken down by gender. The distribution over the spells on the different payment types is clearly different as can be seen from the total number starting a particular payment type (in the last column of the table). Amongst the group of payment recipients, women are less likely to be on unemployment or disability payments and more likely to be on one of the other payments compared to men.

Furthermore, examining the transition rates, it is found that women are slightly more likely to exit from unemployment payments and move off payments, but are less likely

Table 5.2: Spell-based Transition Table: by gender^a

		finish								
start	unemp.	sole par.	p. & p.	disab.	no p.	other	age	no p.p.	Total	
<i>men</i>										
unemp.	5019	289	128	1215	26064	153	564	5960	39392	
<i>per cent</i>	<i>13</i>	<i>1</i>	<i>0</i>	<i>3</i>	<i>66</i>	<i>0</i>	<i>1</i>	<i>15</i>	<i>100</i>	
sole par.	178	286	30	4	441	6	2	63	1010	
<i>per cent</i>	<i>18</i>	<i>28</i>	<i>3</i>	<i>0</i>	<i>44</i>	<i>1</i>	<i>0</i>	<i>6</i>	<i>100</i>	
p. & p.	146	25	250	17	753	12	21	327	1551	
<i>per cent</i>	<i>9</i>	<i>2</i>	<i>16</i>	<i>1</i>	<i>49</i>	<i>1</i>	<i>1</i>	<i>21</i>	<i>100</i>	
disab.	330	6	5	3906	2175	9	1108	610	8149	
<i>per cent</i>	<i>4</i>	<i>0</i>	<i>0</i>	<i>48</i>	<i>27</i>	<i>0</i>	<i>14</i>	<i>7</i>	<i>100</i>	
other	142	13	8	59	335	237	27	136	957	
<i>per cent</i>	<i>15</i>	<i>1</i>	<i>1</i>	<i>6</i>	<i>35</i>	<i>25</i>	<i>3</i>	<i>14</i>	<i>100</i>	
<i>women</i>										
unemp.	2145	590	448	582	13777	304	32	1195	19073	
<i>per cent</i>	<i>11</i>	<i>3</i>	<i>2</i>	<i>3</i>	<i>72</i>	<i>2</i>	<i>0</i>	<i>6</i>	<i>100</i>	
sole par.	377	3604	882	61	4074	47	12	856	9913	
<i>per cent</i>	<i>4</i>	<i>36</i>	<i>9</i>	<i>1</i>	<i>41</i>	<i>0</i>	<i>0</i>	<i>9</i>	<i>100</i>	
p. & p.	231	1296	3329	170	6588	157	813	2758	15342	
<i>per cent</i>	<i>2</i>	<i>8</i>	<i>22</i>	<i>1</i>	<i>43</i>	<i>1</i>	<i>5</i>	<i>18</i>	<i>100</i>	
disab.	172	53	24	2216	1044	15	272	122	3918	
<i>per cent</i>	<i>4</i>	<i>1</i>	<i>1</i>	<i>57</i>	<i>27</i>	<i>0</i>	<i>7</i>	<i>3</i>	<i>100</i>	
other	114	183	106	69	519	663	72	135	1861	
<i>per cent</i>	<i>6</i>	<i>10</i>	<i>6</i>	<i>4</i>	<i>28</i>	<i>36</i>	<i>4</i>	<i>7</i>	<i>100</i>	

^ano payments (no p.) and non-payment partner (no p. p.), are only of interest as outflow sources for other payments and do not represent the complete populations of people in these categories.

to exit from any of the other payments. There are also differences regarding the exit destinations. Women are more likely to move from any of the payments into a sole parent payment or a partner and parenting payment. Women are also more likely to move from partner and parenting payment straight into the age pension, whereas men are more likely to move from a disability payment straight into the age pension.

5.3. Transitions by age

Transitions, broken down by age groups, are presented in Table 5.3. It is clear from the table that the distribution over payments is different for younger and older people. The older age group is more likely to be on disability payments or on other payments and people in this group are less likely to be on unemployment payments. People in the two younger age groups occasionally flow into the age pension payment type, which includes the Wife's age pension and Widow pension which may have a few younger recipients.

Once people are on a payment the exit probabilities to the alternative destinations are different as well. For example, older individuals are in principle more likely to remain on payments and the exit rate off payments is lower for all payment types. Retention rates on most payments are higher for older people, although it is lower for those on disability payments and those on sole parent payments. An explanation for the latter two (lower) retention rates is firstly, that those exiting from disability payments are most likely to exit to age pension, which will happen sooner for older people. Secondly, although in general, people exiting sole parent payments are most likely to exit payments altogether, the probability of moving onto unemployment payments is much higher for the older age group than for the younger age groups. Older sole parents are more likely to have older children and thus lose their eligibility for sole parent payments sooner. These older sole parents who are no longer eligible for the sole parent payment are then also more likely to exit into unemployment rather than off payments in comparison with younger sole parents

Table 5.3: Spell-based Transition Table: by age^a

start	finish							age	no p.p.	Total
	unemp.	sole par.	p. & p.	disab.	no p.	other				
<i>aged <31</i>										
unemp.	3055	550	317	331	25842	133	0	1958	32186	
<i>per cent</i>	9	2	1	1	80	0	0	6	100	
sole par.	137	1622	583	2	1787	3	0	451	4585	
<i>per cent</i>	3	35	13	0	39	0	0	10	100	
p. & p.	110	821	756	9	2176	17	1	837	4727	
<i>per cent</i>	2	17	16	0	46	0	0	18	100	
disab.	183	32	13	862	1074	4	0	103	2271	
<i>per cent</i>	8	1	1	38	47	0	0	5	100	
other	85	146	50	11	206	51	0	86	635	
<i>per cent</i>	13	23	8	2	32	8	0	14	100	
<i>aged 31-50</i>										
unemp.	2792	315	191	791	11771	170	0	3718	19748	
<i>per cent</i>	14	2	1	4	60	1	0	19	100	
sole par.	390	2210	324	53	2656	36	0	458	6127	
<i>per cent</i>	6	36	5	1	43	1	0	7	100	
p. & p.	215	495	1856	88	4453	78	62	1752	8999	
<i>per cent</i>	2	6	21	1	49	1	1	19	100	
disab.	243	26	11	2543	1317	10	1	363	4514	
<i>per cent</i>	5	1	0	56	29	0	0	8	100	
other	117	47	28	41	301	271	0	121	926	
<i>per cent</i>	13	5	3	4	33	29	0	13	100	
<i>aged >50</i>										
unemp.	1317	14	68	675	2228	154	596	1479	6531	
<i>per cent</i>	20	0	1	10	34	2	9	23	100	
sole par.	28	58	5	10	72	14	14	10	211	
<i>per cent</i>	13	27	2	5	34	7	7	5	100	
p. & p.	52	5	967	90	712	74	771	496	3167	
<i>per cent</i>	2	0	31	3	22	2	24	16	100	
disab.	76	1	5	2717	828	10	1379	266	5282	
<i>per cent</i>	1	0	0	51	16	0	26	5	100	
other	54	3	36	76	347	578	99	64	1257	
<i>per cent</i>	4	0	3	6	28	46	8	5	100	

^a no payments (no p.) and non-payment partner (no p. p.), are only of interest as outflow sources for other payments and do not represent the complete populations of people in these categories.

exiting the sole parent payment.

5.4. Transitions by Marital Status and Partner's Benefit Receipt

Finally, transitions broken down by marital status and benefit receipt of the partner are presented in Table 5.4. Singles are most likely to be on unemployment benefits and sole parent payments, whereas people in couples are distributed about half-half over unemployment and partner and parenting payments. Single payment recipients are somewhat more likely to remain on disability payments than payment recipients in couples, although singles are more likely to move off payments (adding together the no payments and non-payment partner categories) altogether than couples where both persons are on benefits. With respect to unemployment payments and other payments singles behave in a similar way to couples where both members are on a payment.

5.5. Transitions by the Age of the Youngest Child

A breakdown by the age of the youngest child was also carried out (see Table A.6 in the appendix). Focusing on the sole parent payments, it is found that having an older youngest child which means that eligibility is running out, increases the transition from sole parent payment to unemployment, disability and other payments. However, at the same time a large increase is observed in the exit off payments. Notable is that exit to partner related categories (partner and parenting payment and the non-payment partner categories) decreases. Similar results are found when looking at a breakdown by the age of the youngest child for the yearly individual based transition probabilities (see Tables A.7 to A.12 in the appendix). That is a higher probability of exit to unemployment payments and off payments is found for sole parents with older children.

Examining the five-year transition rates for sole parents with children under 5 years of age, only 49 per cent remain on sole parent payments after five years which is not higher

Table 5.4: Spell-based Transition Table: by marital status and partner's benefit receipt^a

		finish							
start	unemp.	sole par.	p. & p.	disab.	no p.	other	age	no p.p.	Total
Cpl.&no ben.p.									
unemp.	344	31	104	100	1968	20	12	833	3412
<i>per cent</i>	<i>10</i>	<i>1</i>	<i>3</i>	<i>3</i>	<i>58</i>	<i>1</i>	<i>0</i>	<i>24</i>	<i>100</i>
sole par.	2	0	5	0	13	0	0	0	20
<i>per cent</i>	<i>10</i>	<i>0</i>	<i>25</i>	<i>0</i>	<i>65</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>100</i>
p. & p.	68	296	933	17	2458	17	5	817	4611
<i>per cent</i>	<i>1</i>	<i>6</i>	<i>20</i>	<i>0</i>	<i>53</i>	<i>0</i>	<i>0</i>	<i>18</i>	<i>100</i>
disab.	23	4	6	474	324	1	63	108	1003
<i>per cent</i>	<i>2</i>	<i>0</i>	<i>1</i>	<i>47</i>	<i>32</i>	<i>0</i>	<i>6</i>	<i>11</i>	<i>100</i>
other	19	4	24	10	148	77	2	52	336
<i>per cent</i>	<i>6</i>	<i>1</i>	<i>7</i>	<i>3</i>	<i>44</i>	<i>23</i>	<i>1</i>	<i>15</i>	<i>100</i>
cpl.&ben.p.									
unemp.	1817	137	310	558	4636	121	426	5693	13698
<i>per cent</i>	<i>13</i>	<i>1</i>	<i>2</i>	<i>4</i>	<i>34</i>	<i>1</i>	<i>3</i>	<i>42</i>	<i>100</i>
sole par.	4	0	10	0	1	0	0	0	15
<i>per cent</i>	<i>27</i>	<i>0</i>	<i>67</i>	<i>0</i>	<i>7</i>	<i>0</i>	<i>0</i>	<i>0</i>	<i>100</i>
p. & p.	291	939	2630	170	4728	151	827	2204	11940
<i>per cent</i>	<i>2</i>	<i>8</i>	<i>22</i>	<i>1</i>	<i>40</i>	<i>1</i>	<i>7</i>	<i>18</i>	<i>100</i>
disab.	126	7	16	1998	545	5	908	577	4182
<i>per cent</i>	<i>3</i>	<i>0</i>	<i>0</i>	<i>48</i>	<i>13</i>	<i>0</i>	<i>22</i>	<i>14</i>	<i>100</i>
other	84	15	59	27	187	292	30	201	895
<i>per cent</i>	<i>9</i>	<i>2</i>	<i>7</i>	<i>3</i>	<i>21</i>	<i>33</i>	<i>3</i>	<i>22</i>	<i>100</i>
single									
unemp.	5003	711	162	1139	33237	316	158	629	41355
<i>per cent</i>	<i>12</i>	<i>2</i>	<i>0</i>	<i>3</i>	<i>80</i>	<i>1</i>	<i>0</i>	<i>2</i>	<i>100</i>
sole par.	546	3883	879	65	4482	52	14	917	10838
<i>per cent</i>	<i>5</i>	<i>36</i>	<i>8</i>	<i>1</i>	<i>41</i>	<i>0</i>	<i>0</i>	<i>8</i>	<i>100</i>
p. & p.	18	86	16	0	155	1	2	64	342
<i>per cent</i>	<i>5</i>	<i>25</i>	<i>5</i>	<i>0</i>	<i>45</i>	<i>0</i>	<i>1</i>	<i>19</i>	<i>100</i>
disab.	353	48	7	3650	2350	18	409	47	6882
<i>per cent</i>	<i>5</i>	<i>1</i>	<i>0</i>	<i>53</i>	<i>34</i>	<i>0</i>	<i>6</i>	<i>1</i>	<i>100</i>
other	153	177	30	91	519	531	67	18	1586
<i>per cent</i>	<i>10</i>	<i>11</i>	<i>2</i>	<i>6</i>	<i>33</i>	<i>33</i>	<i>4</i>	<i>1</i>	<i>100</i>

^a no payments (no p.) and non-payment partner (no p. p.), are only of interest as outflow sources for other payments and do not represent the complete populations of people in these categories.

than the sole parent group in general, even though their eligibility will not have run out in these five years. However, looking at their exit destinations a difference can be observed. The probability of re-partnering (19.5 per cent) and the probability of exiting all payments (29.3 per cent) is higher than for the other sole parents. This effect is likely to be age-related; sole parents with younger children are themselves more likely to be younger as well.

6. Results from the Duration Based Approach

Average durations in particular payment spells were also investigated, as are the average durations per person on all benefits taken together within the five-and-a-half-year data window. Again, both finished and unfinished spells are included in the calculations. For spells that are already in progress at the beginning of the data window, their start date is taken as that of the start of the data window (that is from 24 December 1994). For spells that are not finished at the end of the data window, the duration of the spell is measured up to the end of the data window (that is up to 16 June 2000).

6.1. All Spells Together

Table 6.1 presents information on three groups of spells. These are all payment spells (including spells on age pension and spells where only the partner is on payment); payment spells, excluding age pension spells and spells where only the partner is on payment; and spells off payments. The second group is marked by a superscript "a" and the third group is marked by a superscript "b" in the table. For these three groups, the average spell duration, the total duration on these spells and the average number of spells within the data window is calculated. The table illustrates that, on average, each individual has just under two, or over two and a half, payment spells if age pension and non-payment partner spells are excluded and included, respectively. Spells are typically long, lasting on average

438 (384) days. By summing all these spells for each individual and averaging over all individuals who had at least one spell during the data window, an average total duration is obtained. Over the five-and-a-half-year period, this was found to be 868 days (1055, if one includes age pension and non-payment partner spells¹¹).

Table 6.1: Durations and number of spells

Variable	Obs	Mean	Std. Dev.	median	25 pctl	75 pctl
duration						
payment spell	140290	383.63	507.96	168	56	476
payment spell ^a	101172	437.86	540.45	210	70	560
off-payment spells ^b	83872	439.35	499.84	224	70	658
all payment spells	51031	1054.64	736.70	1008	322	1876
all payment spells ^a	51031	868.08	706.24	672	210	1540
# payment spells	51031	2.75	2.06	2	1	4
# payment spells ^a	51031	1.98	1.37	1	1	3
# off-payment spells ^b	39361	2.13	1.28	2	1	3

^aExcludes spells in non-payment partner or age pension categories. ^bOff Payment spells only.

The distributions of spell durations and total durations are graphed in Figure 6.1. Durations are measured in fortnights, so the shortest possible spell is one fortnight, that is 14 days and all durations are a multiple of 14 up to 143 fortnights (or 2002 days). From the graphs it is clear that more than a third of all spells last a short time only (less than 7 fortnights on payments). This is also evident from Table 6.1, where the median values are much lower than the mean values indicating a relatively large number of short spells. Even when all spell durations in the five and a half years are added together a substantial proportion still involve only dependence on any of the payments for less than 7 fortnights. The number of people dependent for longer periods declines quickly, although from the distribution in the total duration graph we can infer that people on shorter spells are likely

¹¹This means an average of 947 days (total number of days in time window - average number of days on payments = 2002 - 1055) off payments.

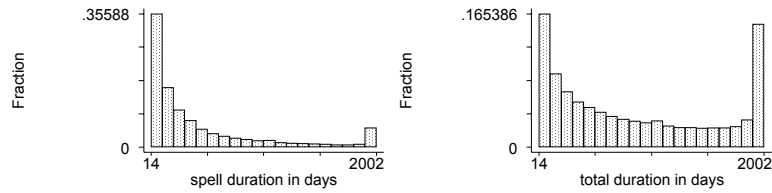


Figure 6.1: Frequency distribution of spell duration and total duration within 5-year data window

to return to a payment at some stage.

The large spike at the extreme right-hand side indicates there is a group of about 5 per cent of all spells which have lasted for more than five years within the five-and-a-half-year data window. Adding up all spells, about 15 per cent of the group of customers who have received payments during the five-and-a-half-year period have been on payments for more than five years. This indicates that there is a group of people who are long-term recipients of welfare payments.

6.2. Spells by Payment Type

Use of such aggregate statistics could be somewhat misleading however, if the distribution of spell lengths and the number of spells differs between payment types. The distribution of the number of spells for all types of spells and by payment type is presented in Figure 6.2. The average number of spells by payment type is shown in Table 6.2. From the figure and the table it is clear that unemployment and partner and parenting payment spells are more likely to re-occur than disability and other spells.

The average spell duration for the different payment types shows a different pattern

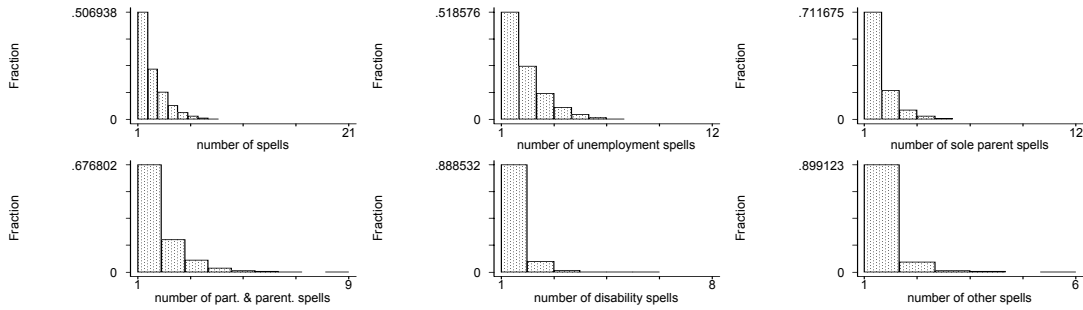


Figure 6.2: Frequency distribution of the number of spells

compared to the average number of spells (see Table 6.2). As might be expected from the high retention rates in Table 4.1 and in Tables A.1 to A.5 spells on disability payments tend to be the longest, on average (at 913 days compared to the full sample of 438 days). Unemployment benefit spells were shortest on average at 295 days, and sole parent payments were second longest, at 641 days. It is clear from the mean and median duration that the distribution for each of the payment types is skewed to the right. This is particularly pronounced for the disability spells, where 25 per cent of all spells lasts more than 1848 days.

Table 6.2: Average spell duration by Payment Type

variable	duration					nrspells
	obs	mean	median	25 pctl	75 pctl	mean
unemployment	58,465	295	154	70	364	1.86
sole parent	10,923	641	406	140	994	1.43
partner & parenting	16,894	459	224	84	616	1.51
disability	12,067	913	700	140	1848	1.14
other	2,823	448	238	84	672	1.12

6.3. Spells by Individual Characteristics

Comparing average payment spell durations, average total duration for all payment spells in the five-year data window and the average number of spells by the individual's characteristics (as they are measured at the start of the spell), most of the expected effects are found (see Table 6.3). For example, women have on average longer spell durations and longer total durations, but the average number of spells are the same for men and women. This is caused by the higher prevalence of sole parent payments amongst women, which are on average long spells, particularly for women (see Table 6.4). Women also tend to have longer partner and parenting spells, but other spells are of similar length to those of men with the exception of unemployment payments. The latter may at least partly be caused by higher exit rates to sole parent and partner and parenting payments.

Older people have much longer spells than younger people. As a result the average number of spells is lower for older people. Once they are on a payment they are quite unlikely to leave the payment even temporarily.

The difference between people living in capital cities and people living outside one of the capital cities is small. There is only some slight indication that people in capital cities have fewer and shorter spells. The difference between singles and couples is similarly small, with the average durations of singles somewhat lower, but the average number of spells somewhat higher. However comparing people who have a partner on payments with those without a partner or those with a partner not on payments, a larger difference is obvious. The number of spells is quite similar but the amount of time spent on payments is larger for those whose partner is on payments as well.

Finally, ethnicity as measured by the variables whether or not born in Australia and whether or not from Aboriginal or Torres Strait Islander descent is somewhat important. Those born outside Australia have slightly fewer spells but longer durations per spell and

Table 6.3: Average spell duration, total duration and number of spells by characteristics^a

Variable	spell duration	total duration	number of spells
<i>gender:</i> male	407.7	820.9	1.98 ^{NS}
female	468.6	915.6	1.98 ^{NS}
<i>age:</i> <31	318.1	730.2	2.26
31-50	468.6	945.8	1.95
>50	685.5	969.2	1.47
<i>marital status:</i> couple	449.2	888.0	1.89
single	430.4	853.4	2.05
<i>partner on paym.:</i> yes	481.5	978.0	1.92
no	418.8	820.8	2.01
<i>Australian born:</i> yes	425.7	859.9	2.01
no	475.9	895.0	1.91
<i>age youngest child:</i> 0-4	424.0 ^{NS}	960.9	2.27
5-14	504.8	1063.1	2.00
older/no dep. children	427.8 ^{NS}	813.6	1.93
<i>ATSI:</i> yes	397.3	1060.6	2.85
no	439.2	863.8	1.97
<i>capital city:</i> yes	435.3 ^{NS}	843.5	1.92
no	440.9 ^{NS}	899.9	2.07

^aAll differences are significant at the 5 per cent level except for the ones marked by a NS.

Table 6.4: Average Spell Duration by Gender and Payment Type

Variable	Obs	Mean	Std. Dev.
<i>men</i>			
unempl.	39392	306.4	380.8
sole par	1010	477.3	533.8
p. & p.	1551	306.8	372.2
disab.	8149	902.3	779.6
other	957	454.7	517.6
<i>women</i>			
unempl.	19073	272.6	336.2
sole par	9913	657.4	627.2
p. & p.	15342	474.2	554.2
disab.	3918	934.6	789.3
other	1861	443.0	500.4

longer total durations within the five-and-a-half-year observation period. People from Aboriginal or Torres Strait Islander origins have shorter durations per spell, but more spells on average and as a result a total duration on payment within the five-and-a-half-year data window which is longer than for others.

7. Results from Alternative Spell Definitions

As discussed in Section 3, the sensitivity to two alternative specifications is explored in this section. First, the results from using fresh spells only are examined followed by the results obtained after merging short spells with preceding longer spells.

7.1. Results from using Fresh Spells

This section compares the results from the fresh spells approach, where only spells which started in the observed time-window are included, with the approach where all spells

that were current at some time during the observed time-window are included. First comparing the spell-based transitions in Table 7.1 with those in Table 5.1, it can be seen that no large changes have taken place. The largest changes occurred for movements from disability payments, which is the payment type that is associated with the longest spell durations. Leaving out those who were on disability payments before the start of the data window means leaving out those with the longest durations, who are most likely to move into age pension and less likely to move off payments. As a result, the retention rate is lower when only fresh spells are included and the probability of moving off payments is higher.

Table 7.1: Transition Table: Fresh Spells Started between March 1995 and June 1995^a

start	finish								Total
	unempl.	sole par.	p. & p.	disab.	no p.	other	age	no p.p.	
unempl.	6737	764	532	1358	32601	345	185	5955	48477
per cent	14	2	1	3	67	1	0	12	100
sole par.	353	3040	727	19	2844	23	3	730	7739
per cent	5	39	9	0	37	0	0	9	100
p. and p.	263	1136	2813	122	5839	110	181	2451	12915
per cent	2	9	22	1	45	1	1	19	100
disab.	415	43	20	3329	2334	12	292	614	7059
per cent	6	1	0	47	33	0	4	9	100
other	208	164	103	91	717	820	52	240	2395
per cent	9	7	4	4	30	34	2	10	100

^ano payments (no p.) and non-payment partner (no p.p.), are only of interest as outflow sources and do not represent the complete populations of people in these categories.

Examining the average spell durations in the two alternative specifications, we find shorter durations and fewer spells for fresh spells (see Tables 7.2 and 6.1). This confirms the fact that spells that have lasted for some time are less likely to finish (even temporarily) than spells that have recently commenced.

Table 7.2: Average duration and number of spells for fresh spells only

Variable	Obs	mean	median
payment spell ^a	78585	333.1	168
off payment spells ^b	73547	424.2	224
all payment spells ^a	40362	648.5	476
# payment spells ^a	26177	1.83	1
# off payment spells ^b	34600	2.13	2

^aExcludes spells in non-payment partner or age pension categories. ^bOff Payment spells only.

Table 7.3: Average duration and number of spells for fresh spells only, by payment type

Variable	Obs	mean duration	mean # of spells
unemployment	19021	272.2	1.69
sole parent	2667	479.3	1.35
partner and parenting	4669	355.9	1.43
disability	3586	529.8	1.17
other	1222	389.9	1.10

Table 7.3 provides further details on average duration and number of spells by payment type. Comparing this to Table 6.2, it is clear that the effects are largest for durations on disability and sole parent payments. This is in line with the lower observed retention rates in Table 7.1. The average number of spells decreases slightly for all payment types except disability payments. This indicates that short-term disability payment recipients are more likely to exit from the payment temporarily, increasing the number of observed spells in the five-year time window.

7.2. Results after Merging Short Spells

Combining short payment spells (less than 6 weeks in duration) with longer previous payment spells is expected to increase retention rates and the duration of spells and to decrease the number of spells. This is confirmed in Table 7.4, which shows higher

retention rates for all payment types compared to Table 5.1. Furthermore, relatively fewer people end a spell by moving off payments, except for people on unemployment payments. This indicates that for a substantial proportion of payment recipients, short spells on a particular payment type may have been preceded by a short spell off payments in the original specification. Other transitions change much less markedly.

Table 7.4: Transition Table:after merging short spells^a

start	finish								Total
	unempl.	sole par.	p. & p.	disab.	no p.	other	age	no p.p.	
unempl.	7338	804	712	1711	35702	451	659	2667	50044
per cent	15	2	1	3	71	1	1	5	100
sole par.	491	3923	944	76	2638	45	12	433	8562
per cent	6	46	11	1	31	1	0	5	100
p. and p.	459	1104	3694	204	4376	163	876	1198	12074
per cent	4	9	31	2	36	1	7	10	100
disab.	469	57	32	6158	2591	24	1334	233	10898
per cent	4	1	0	57	24	0	12	2	100
other	232	175	148	121	587	896	92	97	2348
per cent	10	7	6	5	25	38	4	4	100

^ano payments (no p.) and non-payment partner (no p.p.), are only of interest as outflow sources and do not represent the complete populations of people in these categories.

As expected the duration of payment spells has increased and the number of spells has decreased, which is of course a direct implication of merging spells (see Tables 7.5 and 6.1). Comparing the change in duration over the different payment types (see Tables 7.6 and 6.2), it is found that merging short spells with longer preceding spells increases the duration of sole parent payment spells and the partner and parenting payment spells relatively more than the other payment types. All payment type spells occur on average fewer times after the merging.

Table 7.5: Average duration and number of spells after merging short spells

Variable	Obs	mean	median
payment spell ^a	108995	468.7	224
off-payment spells ^b	77601	462.4	252
all payment spells ^a	50276	1016.2	938
# payment spells ^a	51026	2.3	2
# off-payment spells ^b	37026	1.9	2

^aExcludes spells in non-payment partner or age pension categories. ^bOff Payment spells only.

Table 7.6: Average duration and number of spells after merging short spells, by payment type

Variable	Obs	mean duration	mean # of spells
unemployment	31212	332.2	1.70
sole parent	7520	745.1	1.33
partner and parenting	11020	580.5	1.31
disability	10490	1000.0	1.09
other	2393	507.8	1.08

8. Results from the Empirical Hazard and Survivor Functions

For each of the payment types, the empirical Survivor and Hazard functions are estimated and plotted for all customers and for groups of customers. The data used in this analysis only include “fresh” spells starting on or after 9 June 1995.¹² This means the maximum observation period on any spell is five years. The estimated functions incorporate both complete and incomplete spells. The hazard functions are only presented for the first 81 fortnights, because the number of observations on which later exit rates are based become too small to base inferences on the observed fluctuations.

8.1. Unemployment Hazard and Survivor Functions

The empirical Survivor and Hazard functions for unemployment benefits are plotted by age and gender in Figures 8.1 to 8.4.

Figure 8.1 shows that about 50 per cent of all spells on unemployment benefits are less than 14 fortnights long, and that around 80 per cent are at least 5 fortnights long. Also, there are some 4 per cent of spells still in progress at the end of the data window. Comparing the survival rates for men and women, Figure 8.1 shows that the rates are similar.

The difference between the survival rates for the different age groups is quite large with the two younger age groups exiting more quickly (as one would expect). The difference between the youngest and middle age groups is only small.

With reference to Figures 8.3 and 8.4, it is clear that, initially, exit rates increase with spell duration. That is, the probability of exit jumps from around 4 per cent for one fortnight, to 6.5 per cent at 5 fortnights. In other words, the probability of exit

¹²The choice of this date is more or less arbitrary, however because the last date observed in the sample is 16 June 2000, this starting date means we have exactly 5 years of data. In addition, the extra weeks of payment information in the sample before 9 June 1995 ensure that only “fresh” spells are selected.

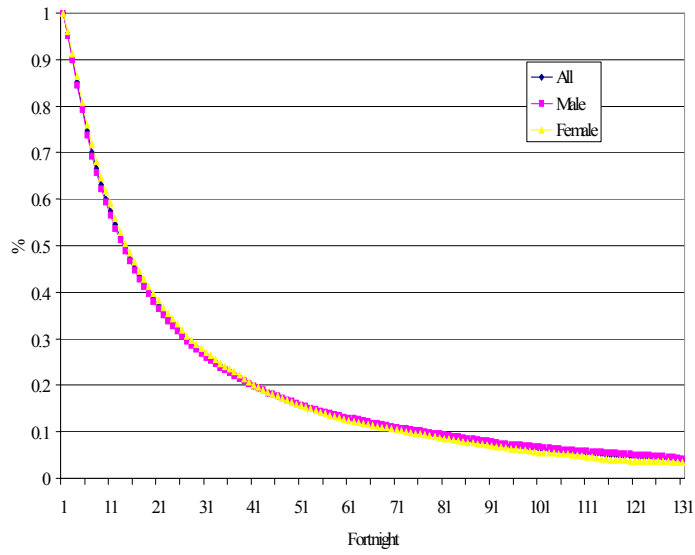


Figure 8.1: Empirical Survivor Function: Unemployment Benefits; All and by Gender

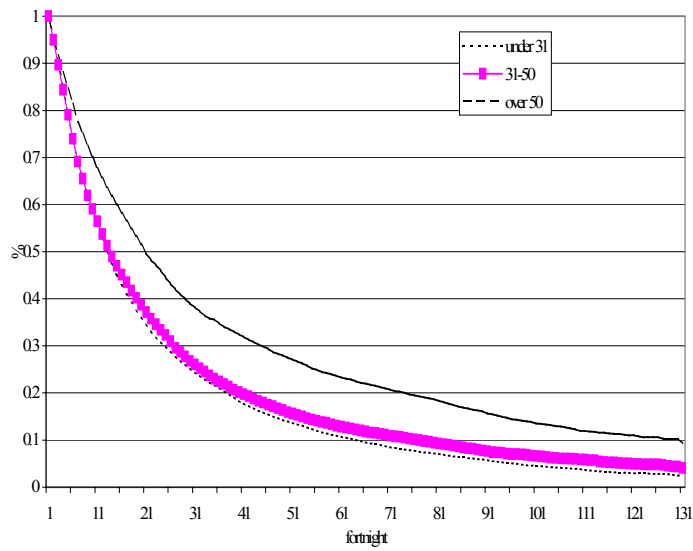


Figure 8.2: Empirical Survivor Function: Unemployment Benefits; by Age

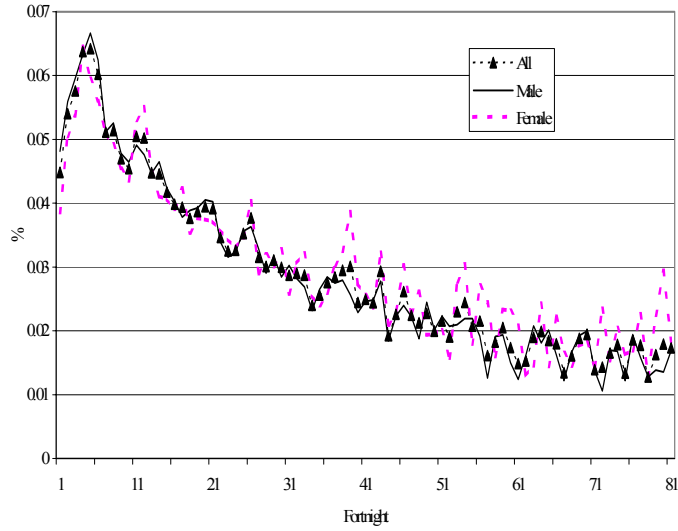


Figure 8.3: Empirical Hazard Function: Unemployment Benefits; All and by Gender

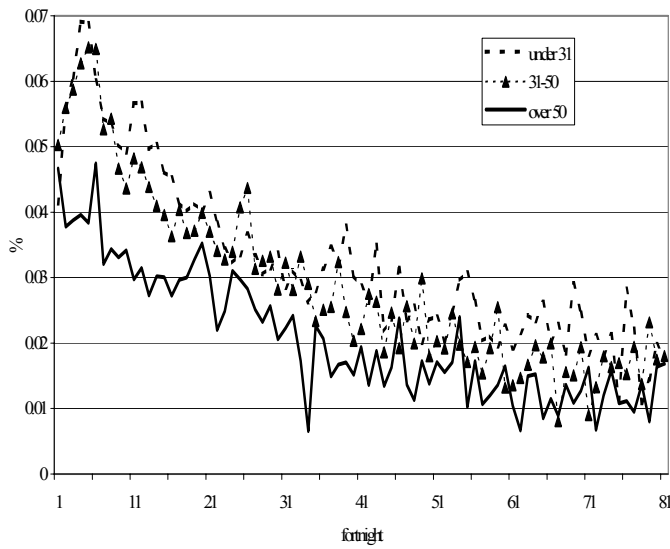


Figure 8.4: Empirical Hazard Function: Unemployment Benefits; by Age

at time t , conditional on the spell having lasted up to point t , increases with t - for “short” spells on unemployment benefit (up to about 5 or 6 fortnights). After the first 6 fortnights, the longer a customer stays on Unemployment Benefit, the less likely he/she is to leave it. Thus, in general, exit rates decline with spell duration, as evidenced from the general decline in the Hazard rate.¹³ The decline in exit rates with spell duration suggests that there is negative duration dependence - the likelihood of exiting the spell at time t , conditional on it lasting up to point t , decreases with t . From a high of around 6 per cent at five fortnights, the hazard declines to about one per cent by around 100 fortnights.

There appears to be little difference in the Hazard rates for males and females, although the exit rate of women seems higher than for men after the first year. Thus, both the Hazard and the Survivor functions exhibit the same kind of pattern across gender. Moreover, the difference between the two youngest age groups is quite small as well, although the younger age group seems to have slightly higher exit rates, particularly at the start of the spell. However, the exit rate of the oldest group is much lower compared to the younger groups throughout the spell, especially at the start of the spell.

8.2. Sole Parent Hazard and Survivor Functions

Figures 8.5 to 8.9 show the empirical Survivor and Hazard functions for sole parent payments, split by gender, age, number of children and age of the youngest child. The Survivor function illustrates the extent of high retention rates, with 20 per cent of all spells still ongoing at the end of the five-year data window. 50 per cent of all spells on sole parent payments are around 34 fortnights or longer. The Survivor function is much lower for males, but this function is based upon a relatively small sample for men. Given the eligibility rules (the youngest child has to be younger than 15 years) the result that people

¹³One can effectively ignore the estimated exit rates in the right hand tail of the Hazard function, as these estimates are based upon very few observations, and are hence generally very volatile.

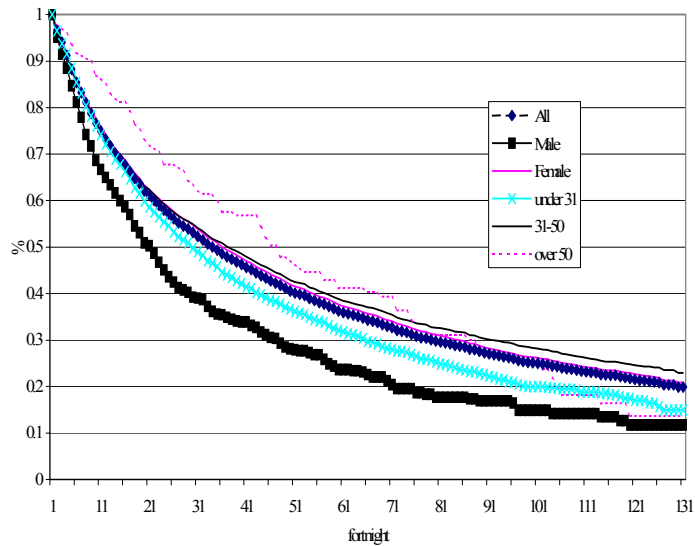


Figure 8.5: Empirical Survivor Function: Sole Parent Payments; All and by Age and Gender

with an older youngest child exit more quickly is as expected. It is however, also much lower for younger sole parents. For example, about 20 per cent of all spells are at least 100 fortnights long for under 31 year-olds, compared to 25 per cent for those aged over 50. The group of sole parents between 31 and 50 years old have the highest survival rates (about 28 per cent has spells over 100 fortnights long) in the long term, although the survival rate is highest for the oldest group in the first three years¹⁴. A plausible explanation for this is that people, who are older than 50 years, are more likely to have older children, which means they remain eligible for sole parent pension for a shorter time. However, this does not mean that they are then off payments. From Table 5.3 in Section 5, it can be seen that older people exiting sole parent payments are more likely to move into unemployment payments, disability payments and other payments.

The aggregate Hazard function again illustrates a degree of negative duration depen-

¹⁴The survival rate for the oldest group is not as smooth as for the others, because relatively few people are part of this group.

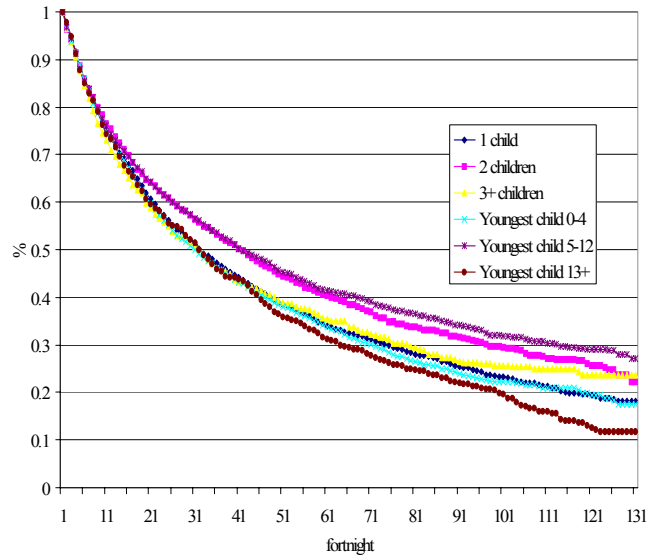


Figure 8.6: Empirical Survivor Function: Sole Parent Payments; by Age and Number of Children

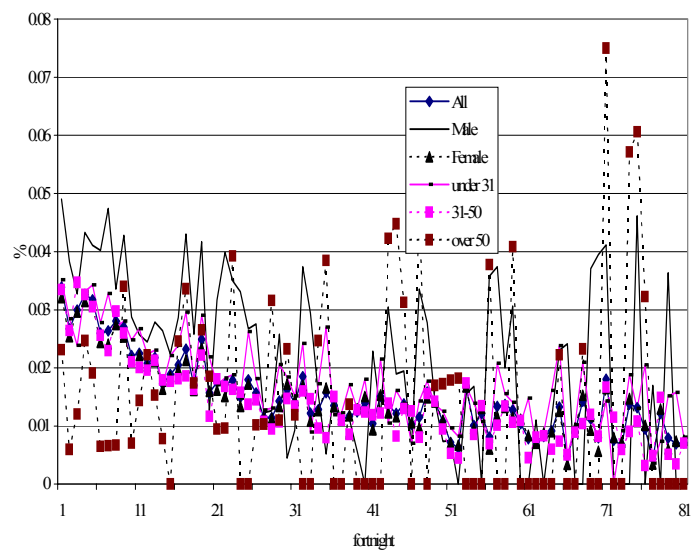


Figure 8.7: Empirical Hazard Function: Sole Parent Payments; All and by Age and Gender

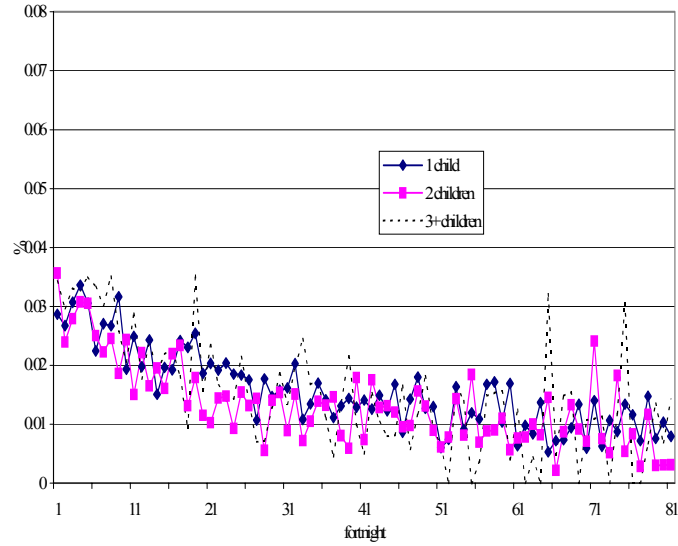


Figure 8.8: Empirical Hazard Function: Sole Parent Payments; by Number of Children

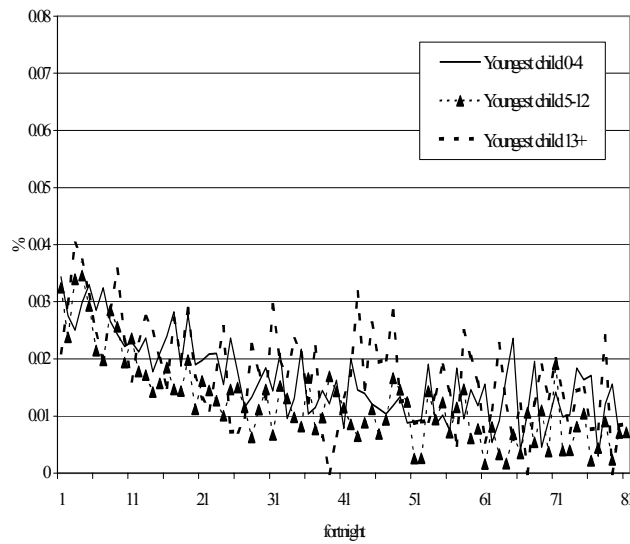


Figure 8.9: Empirical Hazard Function: Sole Parent Payments; by Age of Youngest Child

dence, as evidenced by its general downward slope. However, this is vastly exaggerated by the scale of the graphic, as the peak of around 3 per cent at very short spells, only falls to around 1 per cent for the much longer spells. That is, the probability of exit from the sole parent payments, seems relatively unrelated to the length of time that the spell has already lasted.

The hazard rate for men is much higher than for women throughout the duration of the spell. The hazard rate for those under 31 years of age appears even flatter than the hazard rate for the other age groups, implying an even weaker relationship between the probability of exit and spell lengths, for young sole parents.

8.3. Partner and Parenting Hazard and Survivor Functions

Figures 8.10 to 8.13 display the empirical Survivor and Hazard functions for partner and parenting payments. As can be seen, about 8 per cent of spells are still current at the end of the data window, and there appears to be an extent of negative duration dependence, with exit probabilities falling from a high of over 5 per cent, to a low of around 1 per cent at longer spell durations. Again, men and younger individuals are most likely to exit quickly. However, because the age or presence of children is not the only relevant criterion for the eligibility for these payments, the oldest group is the least likely to exit here, throughout the five years. Similarly, the presence of older children does not mean eligibility is about to expire, so exit rates are lower for people with older children (possibly just reflecting the older age of the parent).

The hazard rate for the oldest age group is much lower than for the other age groups and it does not display the same amount of duration dependence. The exit rates are basically low from the start of the spell and they remain at that level throughout the spell.

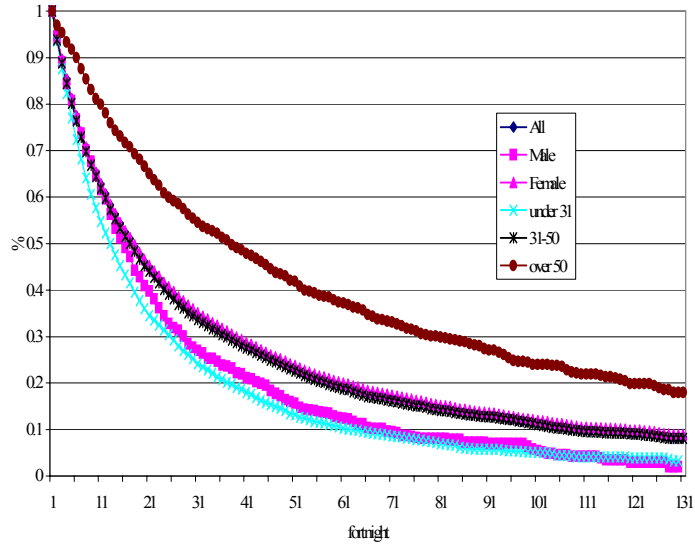


Figure 8.10: Empirical Survivor Function: Partner and Parenting Payments; All and by Age and Gender

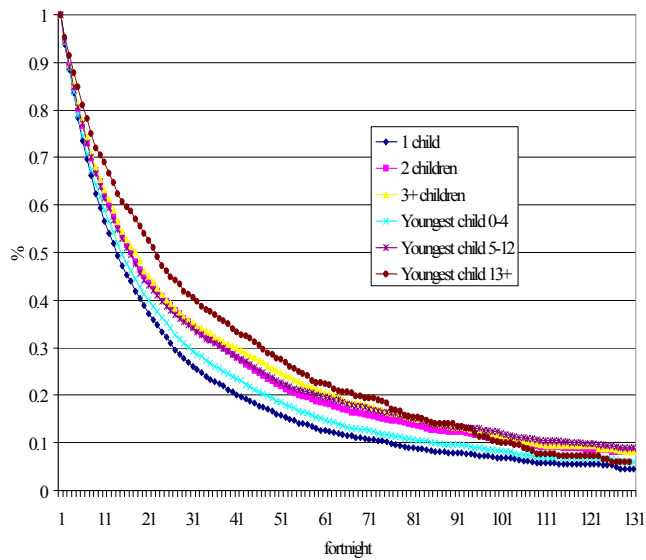


Figure 8.11: Empirical Survivor Function: Partner and Parenting Payments; by Age and Number of Children

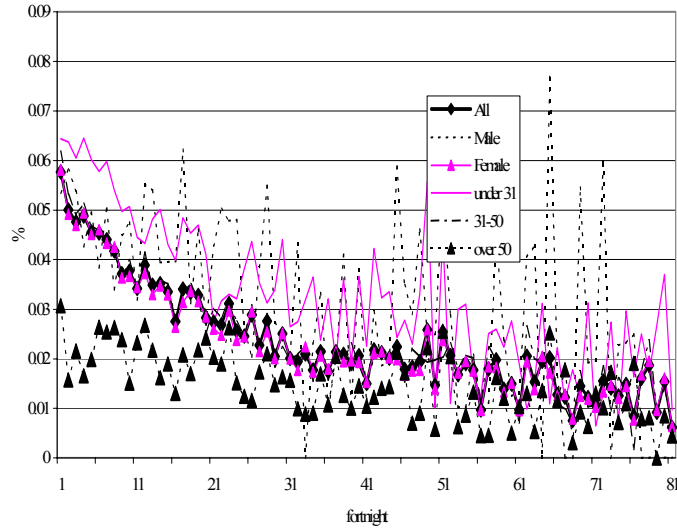


Figure 8.12: Empirical Hazard Function: Parent and Partnering Payments; All and by Gender and Age

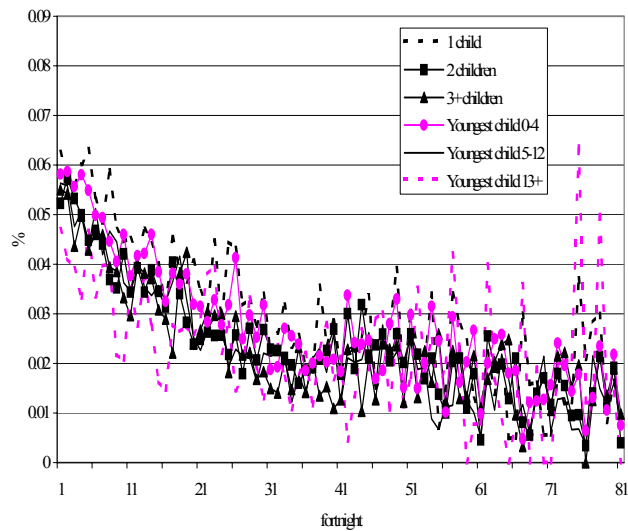


Figure 8.13: Empirical Hazard Function: Parent and Partner Payments; by Number and Age of Youngest Child

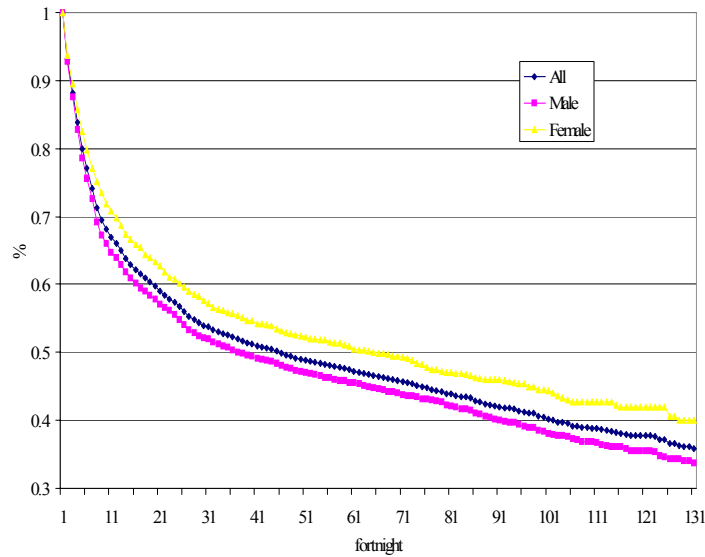


Figure 8.14: Empirical Survivor Function: Disability Payments; All and by Gender

8.4. Disability Hazard and Survivor Functions

Figures 8.14 to 8.17 clearly show the low level of mobility of customers on disability payments. Some 35 per cent of spells are still ongoing at the end of the data window and 50 per cent of all spells are around 45 fortnights or longer. The probability of exit is always small, no matter how long the spell has lasted, starting off at 7 per cent for very short spells (possibly representing the outflow of those on sickness allowances), but then falling sharply to effectively zero for spell lengths of around 30 fortnights or more.

Unlike unemployment benefits, there are some striking differences across gender and age. The survival rates for males are significantly lower than the rates for females at every observed exit point, and the survival rates for younger individuals are significantly lower than the rates for older persons. The Hazard function shows that, particularly at the start of the spell, younger customers have a much higher probability of exit, compared to older clients. For example, the probability of exit for someone aged 30 or under is around 12

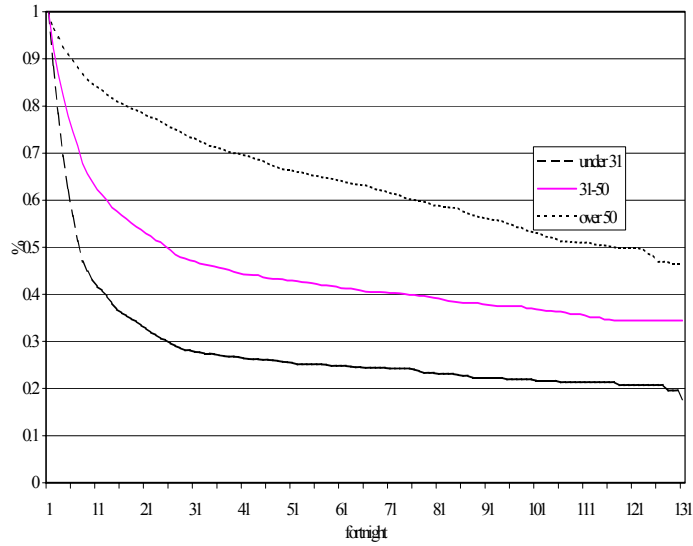


Figure 8.15: Empirical Survivor Function: Disability Payments; by Age

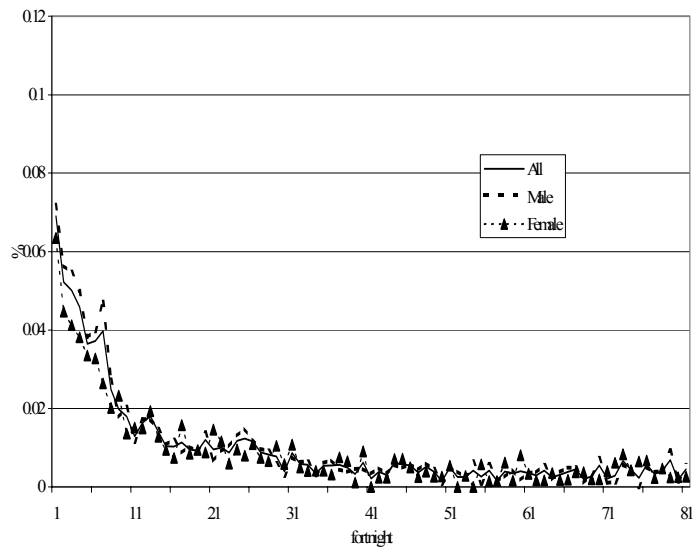


Figure 8.16: Empirical Hazard Function: Disability Payments; All and by Gender

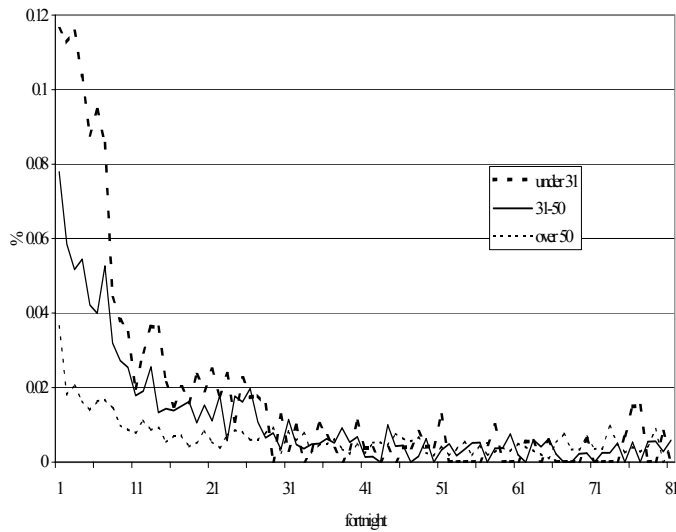


Figure 8.17: Empirical Hazard Function: Disability Payments; by Age

per cent for the first few fortnights, compared to around 4 per cent for those aged over 50. After the first year, the hazard rates for the three age groups become quite similar.

8.5. Other Hazard and Survivor Functions

Finally, Figures 8.18 and 8.19 display the empirical Survivor and Hazard functions for other payments. The Survivor function is somewhat lower for men and it is much lower for those aged under 31. There appears to be some evidence of duration dependence affecting exit probabilities (Figure 8.19), except for the oldest age group, which displays a low exit rate throughout the spell.

8.6. Survival Rate Summary

The previous sections clearly show different levels of mobility for the various payment types. Table 8.1 summarizes the estimated survival rates for the different payment types after 6 months, 1 year, 3 years and 5 years. As expected, people on disability payments

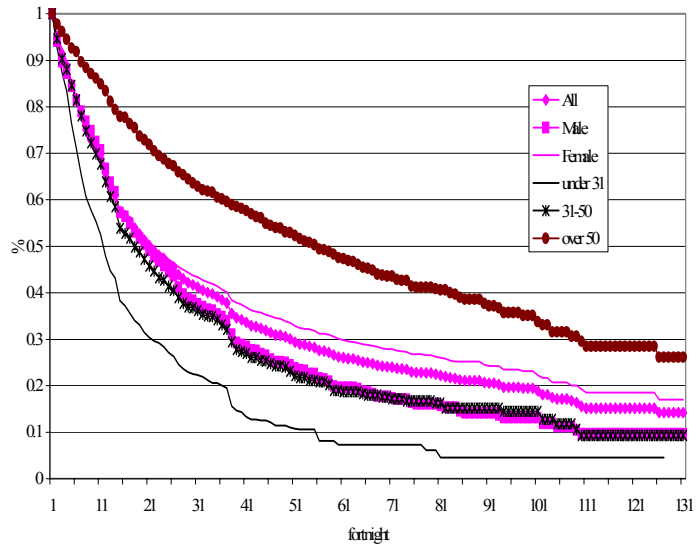


Figure 8.18: Empirical Survivor Function: Other; All and by Age and Gender

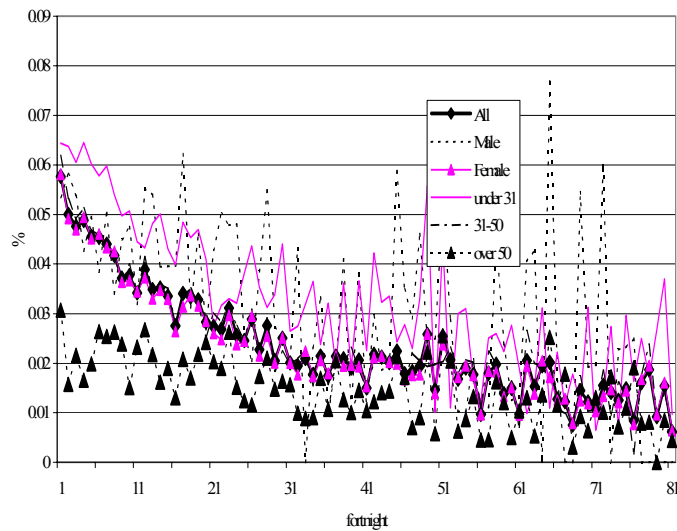


Figure 8.19: Empirical Hazard Function: Other Payments; All and by Gender and Age

are least likely to exit from this payment in the long term, but the exit rate for people on sole parent payments is the lowest in the first half year, indicating that there are relatively few short spells. By the end of the first year the survival rate of people on sole parent payments equals the survival rate of people on disability payments.

People on unemployment payments are clearly the most mobile, but even the majority of this group remains on payments for at least half a year. The survival rates of those on partner and parenting payments are slightly higher at all points in time, indicating that they are less likely to take up work themselves than those on an unemployment payment. This means many individuals on this payment type will only exit if their partner works enough hours to reduce their own and their partner’s payment to zero.

Table 8.1: Summary Table: Survival Rates by Payment Type

payment type	after 6 mths	after 1 year	after 3 years	after 5 years
	per cent	per cent	per cent	per cent
unemployment	51.8	31.1	9.6	3.9
sole parent	71.7	56.1	30.4	19.9
partner and parenting	58.2	39.0	15.2	8.3
disability	64.9	56.0	44.4	35.9
other	62.9	45.4	22.7	14.2

9. Conclusions

The different transition tables show that there is considerable movement between the different payment types. These tables also reveal large differences in the retention rates of the different payment types. For example, disability related payments have a yearly retention rate of about 90 per cent, whereas people on unemployment related payments have a probability of around 55 per cent of still being on these payments after one year.

Transitions and hazard rates are calculated for separate subgroups based on characteristics like age, gender, age of the youngest child and number of children. These show that people with different characteristics can be expected to have different exit probabilities and flow on to different categories. However, more advanced techniques would be better suited to examine the effects of a wide range of variables (including continuously measured variables) and to analyse the effects of several variables simultaneously and of combinations of variables. The separate tabulations by characteristic give an indication of the effects on transitions and durations but this approach does not allow for the potential correlation of characteristics, such as for example the age of the individual and their children's age, which are likely to be positively correlated with each other.

Furthermore, sequences of spells can be better explored using hazard rate techniques which allow for correlation between the different spells of one individual instead of treating each spell as independent of all other spells.

A. Appendix: Yearly transition tables

Table A.1: Transition Table: July 1995-July 1996^a

		1996								
1995	unemp.	sole p.	p. & p.	disab.	other	age	no p.p.	no p.	total	change
unemp.	4444	125	98	219	42	103	471	2823	8325	311
per cent	53	2	1	3	1	1	6	34	100	4
sole p.	98	2507	138	19	3	1	136	299	3201	181
per cent	3	78	4	1	0	0	4	9	100	6
p. & p.	57	139	2650	38	11	152	243	350	3640	430
per cent	2	4	73	1	0	4	7	10	100	12
disab.	121	11	7	4418	2	234	21	253	5067	161
per cent	2	0	0	87	0	5	0	5	100	3
other	23	20	10	23	326	10	11	56	479	46
per cent	5	4	2	5	68	2	2	12	100	10
no p.p.	296	153	438	56	14					
per cent	5	3	7	1	0					
no p.	3595	427	723	452	122					
per cent	14	2	3	2	0					
total	8636	3382	4070	5228	525				20712	1129

^ano payments (no p.) and non-payment partner (no p. p.), are only of interest as inflow or outflow sources to other payments and do not represent the complete populations of people in these categories.

Table A.2: Transition Table: July 1996-July 1997^a

1997										
1996	unemp.	sole p.	p. & p.	disab.	other	age	no p.p.	no p.	total	change
unemp.	4815	106	101	228	81	117	411	2777	8636	169
per cent	56	1	1	3	1	1	5	32	100	2
sole p.	101	2586	138	22	9	4	166	356	3382	15
per cent	3	76	4	1	0	0	5	11	100	0
p. & p.	65	154	2792	26	26	200	369	438	4070	-180
per cent	2	4	69	1	1	5	9	11	100	-4
disab.	82	4	4	4632	4	254	33	215	5228	131
per cent	2	0	0	89	0	5	1	4	100	3
other	31	14	20	20	347	22	14	57	525	71
per cent	6	3	4	4	66	4	3	11	100	14
no p.p.	348	136	269	54	11					
per cent	5	2	4	1	0					
no p.	3361	395	565	376	110					
per cent	14	2	2	2	0					
total	8805	3397	3890	5359	596				21841	206

^ano payments (no p.) and non-payment partner (no p. p.), are only of interest as inflow or outflow sources to other payments and do not represent the complete populations of people in these categories.

Table A.3: Transition Table: July 1997-July 1998^a

1998										
1997	unemp.	sole p.	p. & p.	disab.	other	age	no p.p.	no p.	total	change
unemp.	5357	126	110	275	40	141	312	2444	8805	342
per cent	61	1	1	3	0	2	4	28	100	4
sole p.	108	2663	147	16	15	0	137	311	3397	227
per cent	3	78	4	0	0	0	4	9	100	7
p. & p.	69	187	2747	40	34	105	273	435	3890	-26
per cent	2	5	71	1	1	3	7	11	100	-1
disab.	41	5	4	4842	2	216	25	224	5359	280
per cent	1	0	0	90	0	4	0	4	100	5
other	24	16	13	17	409	16	28	73	596	75
per cent	4	3	2	3	69	3	5	12	100	13
no p.p.	314	190	287	59	21					
per cent	5	3	4	1	0					
no p.	3232	436	556	387	141					
per cent	14	2	2	2	1					
total	9147	3624	3864	5639	671				22047	898

^ano payments (no p.) and non-payment partner (no p. p.), are only of interest as inflow or outflow sources to other payments and do not represent the complete populations of people in these categories.

Table A.4: Transition Table: July 1998-July 1999^a

1999										
1998	unemp.	sole p.	p. & p.	disab.	other	age	no p.p.	no p.	total	change
unemp.	5189	131	115	290	64	155	300	2903	9147	-1016
per cent	57	1	1	3	1	2	3	32	100	-11
sole p.	108	2852	133	15	15	1	172	328	3624	89
per cent	3	79	4	0	0	0	5	9	100	2
p. & p.	57	183	2613	32	40	182	329	428	3864	-229
per cent	1	5	68	1	1	5	9	11	100	-6
disab.	19	8	2	5097	0	275	19	219	5639	234
per cent	0	0	0	90	0	5	0	4	100	4
other	28	1	18	12	490	31	14	77	671	86
per cent	4	0	3	2	73	5	2	11	100	13
no p.p.	250	155	268	44	28					
per cent	4	2	4	1	0					
no p.	2479	383	486	383	113					
per cent	11	2	2	2	1					
total	8131	3713	3635	5873	757				22945	-836

^ano payments (no p.) and non-payment partner (no p. p.), are only of interest as inflow or outflow sources to other payments and do not represent the complete populations of people in these categories.

Table A.5: Transition Table: July 1999-July 2000^a

2000										
1999	unemp.	sole p.	p. & p.	disab.	other	age	no p.p.	no p.	total	change
unemp.	4603	138	119	278	67	121	285	2520	8131	-967
per cent	57	2	1	3	1	1	4	31	100	-12
sole p.	93	2999	105	21	17	2	158	318	3713	177
per cent	3	81	3	1	0	0	4	9	100	5
p. & p.	54	184	2606	35	40	112	269	335	3635	-61
per cent	1	5	72	1	1	3	7	9	100	-2
disab.	28	7	2	5333	5	244	21	233	5873	247
per cent	0	0	0	91	0	4	0	4	100	4
other	30	6	14	8	588	20	18	73	757	142
per cent	4	1	2	1	78	3	2	10	100	19
no p.p.	173	172	226	42	31					
per cent	3	3	4	1	0					
no p.	2182	382	501	400	141					
per cent	10	2	2	2	1					
total	7164	3890	3574	6120	899				27702	-462

^ano payments (no p.) and non-payment partner (no p. p.), are only of interest as inflow or outflow sources to other payments and do not represent the complete populations of people in these categories.

Table A.6: Spell-based Transition Table: by Age Youngest Child^a

start	finish								Total
	unempl.	sole par.	p. & p.	disab.	no p.	other	age	no p.p.	
<i>no dep. child or child older than 14</i>									
unempl.	6171	703	422	1583	36413	417	580	3654	49943
<i>per cent</i>	<i>12</i>	<i>1</i>	<i>1</i>	<i>3</i>	<i>73</i>	<i>1</i>	<i>1</i>	<i>7</i>	<i>100</i>
sole par.	95	70	19	7	320	5	4	27	547
<i>per cent</i>	<i>17</i>	<i>13</i>	<i>3</i>	<i>1</i>	<i>59</i>	<i>1</i>	<i>1</i>	<i>5</i>	<i>100</i>
p. and p.	159	53	1332	126	1565	108	806	854	5003
<i>per cent</i>	<i>3</i>	<i>1</i>	<i>27</i>	<i>3</i>	<i>31</i>	<i>2</i>	<i>16</i>	<i>17</i>	<i>100</i>
disab.	413	42	21	5430	2849	24	1344	406	10529
<i>per cent</i>	<i>4</i>	<i>0</i>	<i>0</i>	<i>52</i>	<i>27</i>	<i>0</i>	<i>13</i>	<i>4</i>	<i>100</i>
other	208	159	90	114	715	777	96	158	2317
<i>per cent</i>	<i>9</i>	<i>7</i>	<i>4</i>	<i>5</i>	<i>31</i>	<i>34</i>	<i>4</i>	<i>7</i>	<i>100</i>
<i>≤ 4 years</i>									
unempl.	548	98	94	70	1968	22	0	2058	4858
<i>per cent</i>	<i>11</i>	<i>2</i>	<i>2</i>	<i>1</i>	<i>41</i>	<i>0</i>	<i>0</i>	<i>42</i>	<i>100</i>
sole par.	140	2258	673	7	2108	4	2	522	5714
<i>per cent</i>	<i>2</i>	<i>40</i>	<i>12</i>	<i>0</i>	<i>37</i>	<i>0</i>	<i>0</i>	<i>9</i>	<i>100</i>
p. and p.	117	940	1352	25	3504	22	3	1325	7288
<i>per cent</i>	<i>2</i>	<i>13</i>	<i>19</i>	<i>0</i>	<i>48</i>	<i>0</i>	<i>0</i>	<i>18</i>	<i>100</i>
disab.	40	6	4	220	163	0	1	174	608
<i>per cent</i>	<i>7</i>	<i>1</i>	<i>1</i>	<i>36</i>	<i>27</i>	<i>0</i>	<i>0</i>	<i>29</i>	<i>100</i>
other	25	19	14	8	70	51	0	61	248
<i>per cent</i>	<i>10</i>	<i>8</i>	<i>6</i>	<i>3</i>	<i>28</i>	<i>21</i>	<i>0</i>	<i>25</i>	<i>100</i>
<i>4-14 years</i>									
unempl.	445	78	60	144	1460	18	16	1443	3664
<i>per cent</i>	<i>12</i>	<i>2</i>	<i>2</i>	<i>4</i>	<i>40</i>	<i>0</i>	<i>0</i>	<i>39</i>	<i>100</i>
sole par.	320	1562	220	51	2087	44	8	370	4662
<i>per cent</i>	<i>7</i>	<i>34</i>	<i>5</i>	<i>1</i>	<i>45</i>	<i>1</i>	<i>0</i>	<i>8</i>	<i>100</i>
p. and p.	101	328	895	36	2272	39	25	906	4602
<i>per cent</i>	<i>2</i>	<i>7</i>	<i>19</i>	<i>1</i>	<i>49</i>	<i>1</i>	<i>1</i>	<i>20</i>	<i>100</i>
disab.	49	11	4	472	207	0	35	152	930
<i>per cent</i>	<i>5</i>	<i>1</i>	<i>0</i>	<i>51</i>	<i>22</i>	<i>0</i>	<i>4</i>	<i>16</i>	<i>100</i>
other	23	18	10	6	69	72	3	52	253
<i>per cent</i>	<i>9</i>	<i>7</i>	<i>4</i>	<i>2</i>	<i>27</i>	<i>28</i>	<i>1</i>	<i>21</i>	<i>100</i>

^a no payments (no p.) and non-payment partner (no p. p.), are only of interest as outflow sources for other payments and do not represent the complete populations of people in these categories. Age of the youngest child is measured at the start of the spell.

Table A.7: Sole Parent and Partner and Parenting Transitions by Age Youngest Child^a

1995		1996							
<i>no dep. child</i>	unempl.	sole par.	p. & p.	disab.	no p.	other	age	no p.p.	Total
sole par.	88	1	0	14	0	1	1	3	108
per cent	81	1	0	13	0	1	1	3	100
p. and p.	41	0	1338	32	0	9	150	50	1620
per cent	3	0	83	2	0	1	9	3	100
<i>≤ 5 years</i>									
sole par.	7	1153	98	2	120	0	0	59	1439
per cent	0	80	7	0	8	0	0	4	100
p. and p.	5	105	708	4	256	2	1	131	1212
per cent	0	9	58	0	21	0	0	11	100
<i>5-16 years</i>									
sole par.	3	1353	40	3	179	2	0	74	1654
per cent	0	82	2	0	11	0	0	4	100
p. and p.	11	34	604	2	94	0	1	62	808
per cent	1	4	75	0	12	0	0	8	100

^aAge of the youngest child is measured in 1996.

Table A.8: Sole Parent and Partner and Parenting Transitions by Age Youngest Child ^a

1996		1997							
<i>no dep. child</i>	unempl.	sole par.	p. & p.	disab.	no p.	other	age	no p.p.	Total
sole par.	71	0	5	9		3	1	4	93
per cent	76	0	5	10		3	1	4	100
p. and p.	38	0	1249	20		23	198	41	1569
per cent	2	0	80	1		1	13	3	100
<i>≤ 5 years</i>									
sole par.	8	1166	93	1	188	0	1	85	1542
per cent	1	76	6	0	12	0	0	6	100
p. and p.	15	99	841	1	299	1	0	192	1448
per cent	1	7	58	0	21	0	0	13	100
<i>5-16 years</i>									
sole par.	21	1420	40	12	168	6	2	77	1746
per cent	1	81	2	1	10	0	0	4	100
p. and p.	12	55	693	4	139	2	2	133	1040
per cent	1	5	67	0	13	0	0	13	100
<i>> 16 years</i>									
sole par.	1		0	0	0	0	0	0	1
per cent	100		0	0	0	0	0	0	100
p. and p.	0		10	1	0	0	0	3	14
per cent	0		71	7	0	0	0	21	100

^aAge of the youngest child is measured in 1997.

Table A.9: Sole Parent and Partner and Parenting Transitions by Age Youngest Child^a

1997		1998							
<i>no dep. child</i>	unempl.	sole par.	p. & p.	disab.	no p.	other	age	no p.p.	Total
sole par.	88	2	1	9	1	11	0	1	113
per cent	78	2	1	8	1	10	0	1	100
p. and p.	33	0	1194	29	1	26	103	48	1434
per cent	2	0	83	2	0	2	7	3	100
<i>≤ 5 years</i>									
sole par.	5	1243	99	0	133	0	0	58	1538
per cent	0	81	6	0	9	0	0	4	100
p. and p.	15	134	862	3	297	4	1	153	1469
per cent	1	9	59	0	20	0	0	10	100
<i>5-16 years</i>									
sole par.	14	1418	47	6	177	3	0	78	1743
per cent	1	81	3	0	10	0	0	4	100
p. and p.	21	53	685	8	136	4	1	72	980
per cent	2	5	70	1	14	0	0	7	100
<i>> 16 years</i>									
sole par.	1		0	1	0	1	0	0	3
per cent	33		0	33	0	33	0	0	100
p. and p.	0		6	0	1	0	0	0	7
per cent	0		86	0	14	0	0	0	100

^aAge of the youngest child is measured in 1998.

Table A.10: Sole Parent and Partner and Parenting Transitions by Age Youngest Child^a

1998		1999							
<i>no dep child</i>	unempl.	sole par.	p. & p.	disab.	no p.	other	age	no p.p.	Total
sole par.	69	4	1	6	2	7	0	2	91
per cent	76	4	1	7	2	8	0	2	100
p. and p.	32	2	1094	18	1	27	177	38	1389
per cent	2	0	79	1	0	2	13	3	100
<i>≤ 5 years</i>									
sole par.	10	1325	97	1	156	3	0	76	1668
per cent	1	79	6	0	9	0	0	5	100
p. and p.	10	121	783	6	295	5	1	187	1408
per cent	1	9	56	0	21	0	0	13	100
<i>5-16 years</i>									
sole par.	27	1523	35	8	170	5	1	94	1863
per cent	1	82	2	0	9	0	0	5	100
p. and p.	15	60	721	7	131	8	4	104	1050
per cent	1	6	69	1	12	1	0	10	100
<i>> 16 years</i>									
sole par.	2		0	0	0	0	0	0	2
per cent	100		0	0	0	0	0	0	100
p. and p.	0		15	1	1	0	0	0	17
per cent	0		88	6	6	0	0	0	100

^aAge of the youngest child is measured in 1999.

Table A.11: Sole Parent and Partner and Parenting Transitions by Age Youngest Child^a

1999		2000							Total
<i>no dep. child</i>	unempl.	sole par.	p. & p.	disab.	no p.	other	age	no p.p.	
sole par.	67	2	0	6	3	10	1	4	93
per cent	72	2	0	6	3	11	1	4	100
p. and p.	29	0	1115	25	3	30	109	35	1346
per cent	2	0	83	2	0	2	8	3	100
<i>≤ 5 years</i>									
sole par.	5	1366	70	2	134	1	0	65	1643
per cent	0	83	4	0	8	0	0	4	100
p. and p.	7	130	790	7	197	4	2	148	1285
per cent	1	10	61	1	15	0	0	12	100
<i>5-16 years</i>									
sole par.	20	1631	35	13	181	6	1	89	1976
per cent	1	83	2	1	9	0	0	5	100
p. and p.	17	54	690	3	133	6	0	86	989
per cent	2	5	70	0	13	1	0	9	100
<i>> 16 years</i>									
sole par.	1		0	0	0	0	0	0	1
per cent	100		0	0	0	0	0	0	100
p. and p.	1		11	0	2	0	1	0	15
per cent	7		73	0	13	0	7	0	100

^aAge of the youngest child is measured in 2000.

Table A.12: Sole Parent and Partner and Parenting Transitions by Age Youngest Child^a

1995		2000							Total
<i>no dep. child</i>	unempl.	sole par.	p. & p.	disab.	no p.	other	age	no p.p.	
sole par.	175	0	4	105	8	38	6	11	347
per cent	50	0	1	30	2	11	2	3	100
p. and p.	77	0	670	112	5	70	634	59	1627
per cent	5	0	41	7	0	4	39	4	100
<i>≤ 5 years</i>									
sole par.	10	490	106	6	293	5	1	89	1000
per cent	1	49	11	1	29	1	0	9	100
p. and p.	12	129	256	5	495	7	5	94	1003
per cent	1	13	26	1	49	1	1	9	100
<i>5-16 years</i>									
sole par.	23	1063	57	28	499	9	2	143	1824
per cent	1	58	3	2	27	0	0	8	100
p. and p.	19	152	402	22	250	7	6	131	989
per cent	2	15	41	2	25	1	1	13	100
<i>> 16 years</i>									
sole par.	10		0	4	13	3	0	0	30
per cent	33		0	13	43	10	0	0	100
p. and p.	3		8	0	8	0	3	0	22
per cent	14		36	0	36	0	14	0	100

^aAge of the youngest child is measured in 2000.

References

- DEPARTMENT OF FAMILY AND COMMUNITY SERVICES (2001): “Information Strategies Branch Longitudinal Data Set; 1percent Sample User Documentation,” Discussion Paper, Policy and Management Information Section, version 1.6.
- KALB, G. (2000): “The Dynamics of Labour Market State and Benefit Receipt; An Application Using the 1994-1997 Survey of Employment and Unemployment Patterns,” Occasional Paper Australian Bureau of Statistics, cat. no. 6293.0.00.004, Canberra.
- KAPLAN, E., AND P. MEIER (1958): “Nonparametric Estimation from Incomplete Observations,” *Journal of the American Statistical Association*, 53, 457–481.
- LANCASTER, T. (1990): *The Econometric Analysis of Transition Data*. Cambridge University Press, Cambridge.