

Transitions in the Labour Market: Evidence from the Survey of Employment and Unemployment Patterns¹

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The Full Employment Project

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Abstract

This paper investigates factors associated with changes to people's labour market status over the 12 month period September 1994 to September 1995. Overall, 28 per cent of people looking for work at the beginning of the period were working by September 1995 and 21 per cent of working people became 'lookers'. Regression analysis found that the transition from looking to working was associated with age - prime age people were more likely to become workers; disability - the disabled were less likely to be working; labour market history - year of previous work experience was positively associated with one's chance of working, trade union membership - members were more likely to be working and household - people with a spouse working full-time were more likely to have gained a job. There is some evidence that the transition out of looking and into working was affected more by individual heterogeneity than state dependence.

Introduction

This paper presents the findings from two models of labour market dynamics - the probabilities of transitions between labour market states at two points in time, and the instantaneous probability of leaving the initial state. In both cases, the key issues are the effects of elapsed duration in the initial state and participation in labour market programs. The analysis uses data from the Survey of Employment and Unemployment Patterns (SEUP). SEUP is a unique Australian data set in that it includes matched records in individuals' participation in labour market programs and other employment support services as well as matched data from social security records. Notwithstanding the important role of labour market programs there has been little independent research on the effects. This paper complements the findings of a previous paper based on the SEUP data [(Stromback, Dockery and Ying (1997))]. In that paper it was found that participation in some types of labour market programs (LMPs) significantly reduces the chances of being unemployed and that magnitude of these effects are quite different from that suggested by simple control group comparisons.

Previous Australian evidence on this issue is limited. Most empirical studies have used transitions as revealed by the matched gross flow data from the monthly Labour Force Surveys [Brooks and Volker (1984), Foster (1981), Trivedi and Baker (1983)]. Using grouped data, these studies contain no information about the role of individual's characteristics or events such as labour market program participation. Studies using individual data include Aungles and Stewart (1984), Brooks and Volker (1986) and Brooks (1986). The analysis in this paper is most closely related to the latter two papers which were based on data from the Australian Youth Survey (ALS).

Survey of Employment and Unemployment Patterns (SEUP)

In May 1994, the government handed down a White Paper on Employment and Growth entitled *Working Nation*, in which the key initiative was the Job Compact, a number of assistance measures targeted at the long term unemployed (LTU), including individual case management, access to a range of labour market programs and a firm job offer for six to twelve months.

The Job Compact includes an evaluation and monitoring strategy, of which the centrepiece is a longitudinal survey of jobseekers people conducted by the Australian Bureau of Statistics (ABS). The scope of the survey is the population of persons aged 15 to 59 resident in private dwellings, but the samples are drawn from three subgroups: Jobseekers, General Population Reference Group - a random sample of the population aged 15 to 59, and Known Job Compact Participants - a sample of persons who had commenced a Job Compact, job placement or training program

between July 1994 and February 1995. Initial socio-demographic data was collected between April-June 1995. The panel has then been revisited in September each year for the duration of the survey. Information collected with respect to a (i) point in time, and (ii) the reference period which is the preceding 12 months.

The point in time variables refer to the situation at the beginning or end of a reference period, but are subject to change over time, such as labour force status, educational attainment and family type. The reference period is made up of a series of “episodes” of working, looking for work and neither working nor looking for work. These three types of episodes correspond to, but are not identical to, the more usual classification of employed, unemployed and not in the labour force. The principal difference is that all the states are not mutually exclusive - persons looking can be working at the same time. To emphasise this, the paper uses the SEUP terminology ‘looking (for work)’ instead of unemployed throughout. For each type of episode the start and finish dates are recorded together with a range of variables reflecting the person’s activity such as occupation while working, active steps to find work, earnings, reason declined job etc.

Transitions between labour market states

This paper uses the data from the first wave of the survey for which the reference period is September 1994 to September 1995. Taking two points in time, the start and end of the reference period, individuals are classified into four states viz. working full time, working part time, looking for work and absent (neither working nor looking). Corresponding to these four states 16 flows, transitions between states j and k , T_{jk} , $j, k = 1, 2, 3, 4$, can be observed. These flows can be expressed as transition probabilities, $p_{jk} = T_{ij} / \sum_j T_{jk}$, the probability that an individual in state j , at the beginning of the period is found in state k , at the end of the period.

The transition probabilities for the Jobseeker sample are given in Table 1. The key features are:

- (i) a high degree of state dependence, i.e. a strong tendency to remain in the initial state as indicated by the diagonal entries being relatively large;
- (ii) this persistence being particularly high for those initially looking for work of which 67 per cent were also looking at the end of the period;
- (iii) the transition probabilities between states are higher for similar states (e.g. full time and part time) than for dissimilar states (e.g. full time and absent). This is reflected in the probabilities declining with the distance from the diagonal.

Table 1: Transition frequencies for Jobseekers at May 1995 - Proportion of persons in State i in September 1994 who were in State j in September 1995

Type of activity September 1994	Type of activity, September 1995				Total
	Working		Looking	Absent	
	Full-time	Part-time			
Working full-time	0.34	0.13	0.45	0.08	1.0
Working part-time	0.15	0.45	0.30	0.10	1.0
Looking	0.13	0.10	0.67	0.10	1.0
Absent	0.12	0.16	0.42	0.30	1.0
Total	0.17	0.16	0.53	0.14	1.0

Source: ABS Cat. No. 6286.0, p.19

The 67 per cent survival rate in the looking state implies, assuming an exponential duration distribution, an expected remaining duration of looking for work (for those looking at a particular point in time) of three years.

The published tables also show how the transition probabilities vary with four individual characteristics: sex, age, country of birth and geographic location. These detailed tables in ABS (1997) show that the largest differences in transition probabilities are associated with age. Older persons are much more likely to remain unemployed and to remain absent from the labour market than younger persons. Being overseas born in a non-MES country has a similar effect but the magnitude is less than age. Still smaller differences can be discerned by sex and geographic location with one exception in that females are more likely to remain absent than males.

Other differences are often very small. For example, the probability of remaining looking is 69 per cent for males and 63 per cent for females, but females have a somewhat higher probability of remaining working than males.

The published tables on which these comments are made, control for one variable in turn; in other words they report the transition probabilities conditional on each of the four variables in turn. But observing that there are some differences between, for example, males and females, does not necessarily imply that gender is the critical factor. The differences could be due to other underlying factors, correlated with gender, which influence the probabilities of transitions.

Multivariate analysis of labour market transitions

To take account of this point, and since these other factors are of interest in their own right, a set of regression models were estimated for each flow between the three states: working, looking and absent. The models are specified as logistic regressions in which the log odds of the probability of remaining in or moving to another state (p_{ij}) is a linear function of a set of observable

characteristics X_i and the unobservable factors u_i ,

$$\log(p_{ijk}/(1-p_{ijk})) = X_i' b_{jk} + u_{ijk}, \text{ for } j, k = 1, 2, 3$$

Since there are three states, there are a total of nine such models, but only six of these models are independent².

These models were estimated from the SEUP micro data file by the ABS on behalf of the authors. Two of the three SEUP subsamples were used in the analysis, the Jobseeker and Population Reference Group samples. The transition frequencies for these two sample combined are given in Table 2 below.

Table 2: Transition frequencies: Proportion of persons in state i at the beginning of reference period September 1994 who were in state j at the end of the period, September 1995. Jobseekers and Population Reference Group

Initial State	Destination state			Number of persons ('000)
	Working	Looking	Absent	
Working	0.73	0.21	0.06	3376
Looking	0.28	0.61	0.11	3430
Absent	0.25	0.33	0.42	1588
Number of persons ('000)	3814	3341	1239	8394

Source: SEUP, unpublished data

Table 3 gives the results for three of the more interesting cases, transitions to and from working. In the above notation these models estimate b_{12} , b_{21} and b_{31} .³ The other parameters are partially implied by the fact that a person must transit to one of the three states. For example, having estimated b_{12} , and invoking the assumption that $b_{11} = b_{13}$, the latter parameters are given by $b_{11} = b_{13} = -b_{12}$.

Of the four variables referred to above, only age remains an important factor affecting transitions when a range of other variables are included. The other three, gender, country of birth and

² In a situation with three outcomes a multinomial logit model would have been a more natural specification. However, due to the limited access to the data all the computations had to be done with the SAS statistical package which does not include a multinomial logit routine. Estimating nine bi-variate models when only six of the models are independent means that the estimates are not unique.

³ In computing the estimates the first outcome was taken to be that the event in question did not take place (did not transit from i to j) while the second outcome is that the event did take place (did transit from i to j). SAS takes p to be the probability of the first event, transition from i to a state other than j and estimates the regression model $\log(p/(1-p)) = X'b$. It is more natural to express the estimates in terms of their effect on the probability of a transition from i to j. Since $\log((1-p)/p) = -X'b$, a negatively signed parameter has a positive effect on the probability of transition from i to j. In other words, the sign should be reversed to facilitate the interpretation. Note that this is different from most other econometric software which effectively defines p to be the probability that the

location have only small effects in comparison to many other variables of greater interest. In what follows, the explanations and discussion of the results is grouped under five sub-headings which take up the more important findings.

Since the estimated parameter reflects the effect on the log odds of a particular transition, it is common to tabulate how the predicted probabilities vary according to the values taken by some or all of the variables included. This method of presentation is not well suited to the present case with six models each having a large number of parameters. To calculate the approximate effect on the probability, a simple rule of thumb is to divide the parameter by 4. For example, the probability that a male remains in work is approximately $0.37/4 = 0.09$ higher than for a female. This approximation is not too bad for probabilities in the 0.25 to 0.75 range, but becomes very inaccurate for a probability close to zero or one.

Table 3: Logit estimates of three models of labour market transitions, September 1994 to September 1995

Variable	Type of transition		
	working to looking	looking to working	absent to working
INTERCEPT	2.15	1.99	1.07
male	-0.37*	0.19	-0.02
age 15-19	0.15	-1.14*	-2.45*
age 20-24	0.66	-1.81*	-3.20*
age 25-34	0.70*	-1.55*	-2.80*
age 35-44	0.37	-1.23*	2.00*
married/de facto	-0.33	0.06	0.63
birthplace			
Australia	-0.17	0.29	0.39
MES country	-0.17	0.21	0.55
arrived post 1991	-0.49	0.21	0.09
Aboriginal/TS Islander	-0.14	-0.15	0.90
youngest child less than 6	0.80*	-0.52	-0.06
first language English	-0.38	-0.22	1.36
English usually spoken at home	-0.01	-0.38	0.19
English proficiency			
speaks very well, well or fair	-0.54	-0.27	1.68
does not speak well or not at all	-0.37	-0.20	2.17
has a disability	0.21	0.01	-0.05
disability impedes employment	-0.13	0.68*	0.41
capital city or major urban	-0.19	0.00	0.20
changed state or area of usual residence	-0.12	-0.39	-0.22
years of labour force status			
working	0.16	-0.18*	-0.26*
looking for work	-0.49*	0.14*	0.17
neither working or looking	0.13*	0.00	0.15
member of trade union	0.77*	-0.68*	-1.61*
training course attended			
in house training	0.67*	-1.69	-2.01*
external training	-0.03	-0.04	-0.22*
currently studying	0.36	0.24	0.38
level of educational attainment	0.02	-0.04	-0.04
years of education:			
spouse	0.08	0.07	-0.14
father	0.05	-0.05	-0.15
place of highest qualification attained			
Australia	-0.13	-0.22	-0.63
MES country	0.05	0.17	0.92

Table 3 cont

Variable	Type of transition		
	working to looking	looking to working	absent to working
level of government benefits received	-0.59*	0.70*	0.46*
labour force status at the start of reference period			
looking for part-time work	-	-0.13	-
working full-time	-0.82*	-	-
labour force status of spouse			
working full-time	0.29	0.93*	0.51
working part-time	0.37	-0.19	-0.80
unemployed	0.02	0.25	-0.09
Participated in Labour Market Program:			
employment support	-	0.08	-
employment training	-	-1.17*	-
skill training	-	-0.09	-
wage subsidy program	0.71	-1.13*	-
Labour Market Program	0.91		
registered with CES at the start of reference period	-	-0.23*	-
duration of initial state	0.12* ⁴	0.04 ⁵	0.08 ⁶
Summary statistics:			
Association of predicted probabilities and observed responses			
Concordant	87.2%	86.1%	84.1%
Discordant	12.6%	13.8%	15.7%
Tied	0.2%	0.2%	0.2%
Somers' D	0.745	0.723	0.684
Gamma	0.747	0.724	0.686
Tau-a	0.248	0.292	0.254
c	0.873	0.862	0.842
Number of observations	3376	3430	1588

*denotes significance at one percent level

Note: The parameter estimates give the effect of each variable on the inverse of the log odds of a transition between the initial state and the destination state relative to a transition to the two other states. Thus a negative coefficient implies that the corresponding variable has a positive effect on the probability that the particular transition takes place.

⁴ Duration of working episode before the start of reference period.

⁵ Duration of looking episode before the start of reference period.

⁶ Duration of neither working or looking for work episode before the start of reference period.

Income related factors

Both the level of government benefits and whether the spouse is working, full or part time, typically have both a large and significant effect on the type of transition. These effects are in the expected direction; higher government benefits increases the probability of changing from working to looking, decreases the probability of transitions from looking and absent to working. The income of the spouse has the largest effect on the probability of changing from looking to working and this is the only transition for which this variable is statistically significant.

Duration and employment history

Duration dependence is reflected in the parameters attached to the variables that measure the duration of the initial state. With reference to the estimated parameters in Table 3, the relevant variable of the transition from working to looking has a coefficient of 0.12, which means that people are less likely to leave work to look for a job, the longer their tenure in their most recent job. By implication, remaining in the working state is increasing in duration. Thus, the estimate implies positive duration dependence and this is also the case for the other two states. Duration dependence is strongest for the working state, but considerably weaker and not statistically significant for the looking state.

True duration dependence is not easily distinguished from population heterogeneity. In this data set, the variables most closely associated with spell duration are the previous labour market history variables - years working, looking and absent. With respect to the odds of transition from looking to working, years working has a positive and years looking a negative effect. These effects are also much larger than the duration effect. Labour market history has an even larger effect on other types of transitions the most notable being a positive effect of years looking on working to looking. Thus, the results strongly suggest that a history of past unemployment is positively associated with present unemployment, but not through a duration dependence effect *per se*.

Labour Market Programs

The specification of the effect of LMP differs according to the initial state of a person. For persons who were looking at the start of the period, the analysis classifies labour market programs into four types. Whether an individual participated in a particular type during the reference period was indicated by a dummy variable. An additional dummy variable indicates whether the person was registered with the CES at any time during the period. For persons who were working at the start, the effect of LMP participation is represented by two dummy variables reflecting whether a person was on a wage subsidy or any other type of LMP at the start of the reference period. Finally, for those absent at the start, no variable was included to represent LMP participation.

This is but one of the many ways in which LMP participation could have been represented. The basic principle underlying the specification is that the transition from i to j is postulated to depend on factors prevailing at the time that state i was observed or likely to have occurred before the transit to state j took place.

All parameters relating to LMPs are given in Tables 4 and 5. As shown in Table 4, two of four types of LMPs, employment training and wage subsidy programs, have a positive and statistically significant effect on the odds of transits from looking to working. The estimated effects would have to be considered large. Using the divide by 4 rule, participation in Employment Training or a Wage Subsidy Program increases the probability finding a job (transition from looking to working) by about 0.3. In addition, CES registration has an additional positive effect. The findings as regards transitions from the working state are similar (Table 5); those who were participants in a LMP at the start of the period were more likely to also be working at the end of the period. However, none of these parameters are statistically significant.

Table 4: Summary of the estimated effect of labour market program participation and CES registration on the log odds of transitions from the looking state

Labour Market Program	looking to working	looking to looking	looking to absent
Employment Support	0.08	-0.054	0.060
Employment Training	-1.17*	1.069*	0.437
Skill Training	-0.09	-0.014	-0.266
Wage Subsidy	-1.13*	0.711-	0.230
CES Registration	-0.23*	0.255*	-0.058

**denotes significance at one percent level*

Note: A negative coefficient implies a positive effect

Table 5: Summary of the estimated effect of labour market program participation at the beginning of the reference period on the log odds of transitions from the working state

Labour Market Program	working to working	working to looking	working to absent
Wage Subsidy	-0.72	0.71	0.60
Other LMP	-0.72	0.91	-0.37

Note: A negative coefficient implies a positive effect

Other factors

One of the most striking findings is that trade union membership has a large significant effect on most types of transitions. Trade union membership increases the odds of changing from looking and absent to working and decreases the odds of changing from working to looking, i.e. to remain in or to find a job. The magnitudes of these effects are also quite large, of the same order as LMP participation. This effect may be causal in nature. Trade union membership may, for example, assist job search. Alternatively, it is a reflection of unobservable characteristics. Persons with a stronger commitment to work would tend to remain in a union even if they are temporarily out of work.

Another variable which also has a surprisingly large effect, is attending an in-house (but not external) training course. Like trade union membership, this increases the chances to remain in and to find a job.⁷ As with trade union membership whether this effect is due to the training or a reflection of unobservable characteristics, remain an open question.

The instantaneous probability of ceasing to look for work

⁷ Those who did not transit to the working state would not have attended an in-house training course, the parameters and the models for transitions from looking and absent largely reflect this fact and the training attendance variables should not have been included in those models.

Another common method for analysing transition data is to focus on the elapsed duration of the current state. In these models conditional nature on a transition is explicitly recognised by estimating the probability of a transition conditional on remaining in the initial state.

The primary unit of observation is the duration of a spell in a particular state, rather than the state of a particular individual. The Jobseeker and PRG samples has a total of 20,203 spells, or episodes in the SEUP terminology, during the reference period of which 7,797 are episodes of looking for work. Of these looking episodes, just over 50 per cent are right censored, i.e. they were still in progress at the end of the reference period. In all cases, however, the starting date of episodes are known even if they begun before the reference period, i.e. no episodes are left censored. As shown in Table 6, almost 50 per cent of episodes had lasted for 364 days or more and thus must have begun before the reference period.

Table 6: Distribution of elapsed duration of looking for work at the end of the reference period, September 1995

No of days	1-90	91-180	181-270	271-363	364	365-730	731+	Total
Frequency	1557	1101	1276	629	293	1177	1666	7699

This distribution of duration reflects the dominance of Jobseekers in the combined sample. The population reference group has a much larger incidence of short duration spells.

Two standard methods are used to analyse the duration of looking episodes. First, the Kaplan-Meyer's non-parametric estimates of the survival (remaining in the looking state) function and the associated hazard. Secondly, a specific parametric model is fitted to the data to estimate the factors which affect spell duration.

The non-parametric estimates of the survival function is stratified by gender and three age groups and depicted in Figure 1. Young females have the lowest survival rate followed by young males and so on with older males having the highest survival rate.

The corresponding hazard function for males is plotted in Figure 2. The hazard is declining for all the age groups meaning that the probability of leaving unemployment is declining in the duration of the spell. This finding is in line with much empirical evidence, but it should be noted that the negative duration dependence is fairly weak and more so for the older age groups. It is, for example, much weaker than the decline in exit probabilities from unemployment used by Piggot and Chapman (1985) in their costing of the Job Compact.

A significant difference between the two samples is indicated by Table 7 which gives the quartiles and mean of the survival function for the Jobseeker and PRG samples. The median duration is

estimated at 773 and 161 days, respectively, and the difference in terms of the mean is even larger - 2032 days for the Jobseekers compared to 472 days from the PRG. In both cases the large difference between mean and median is due to the influence of a significant proportion of very long spells.

Figure 1: Survival Function by Sex and Age

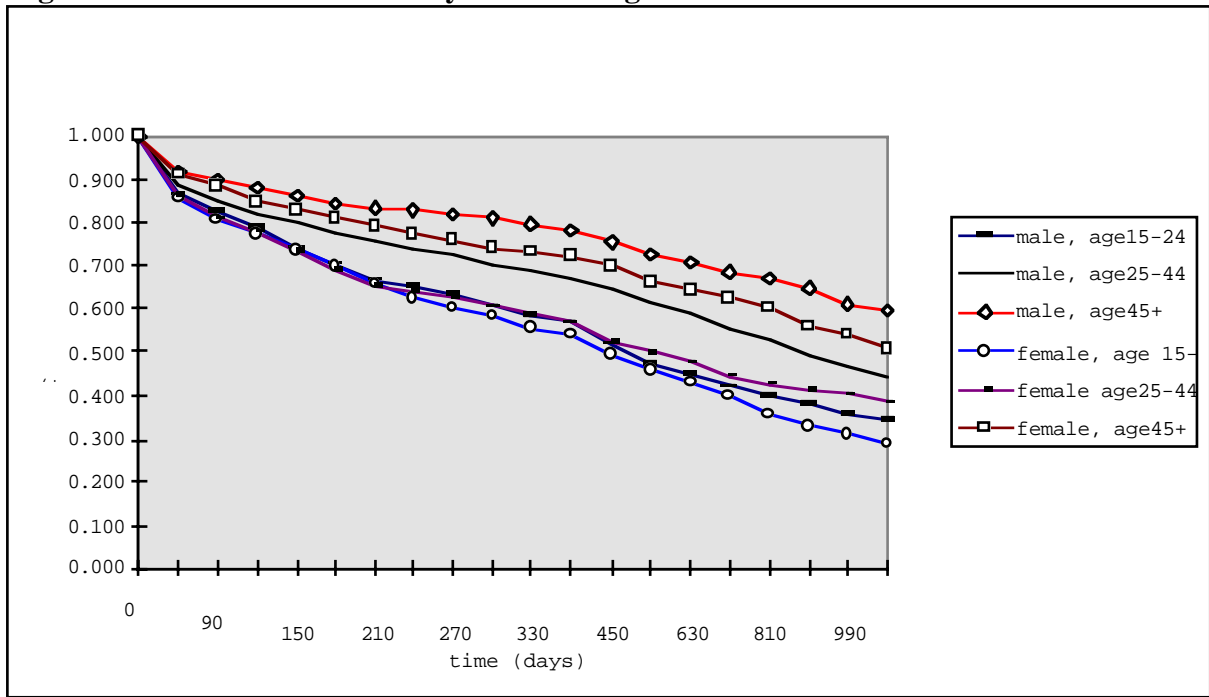


Figure 2: Hazard Function for Males by Age

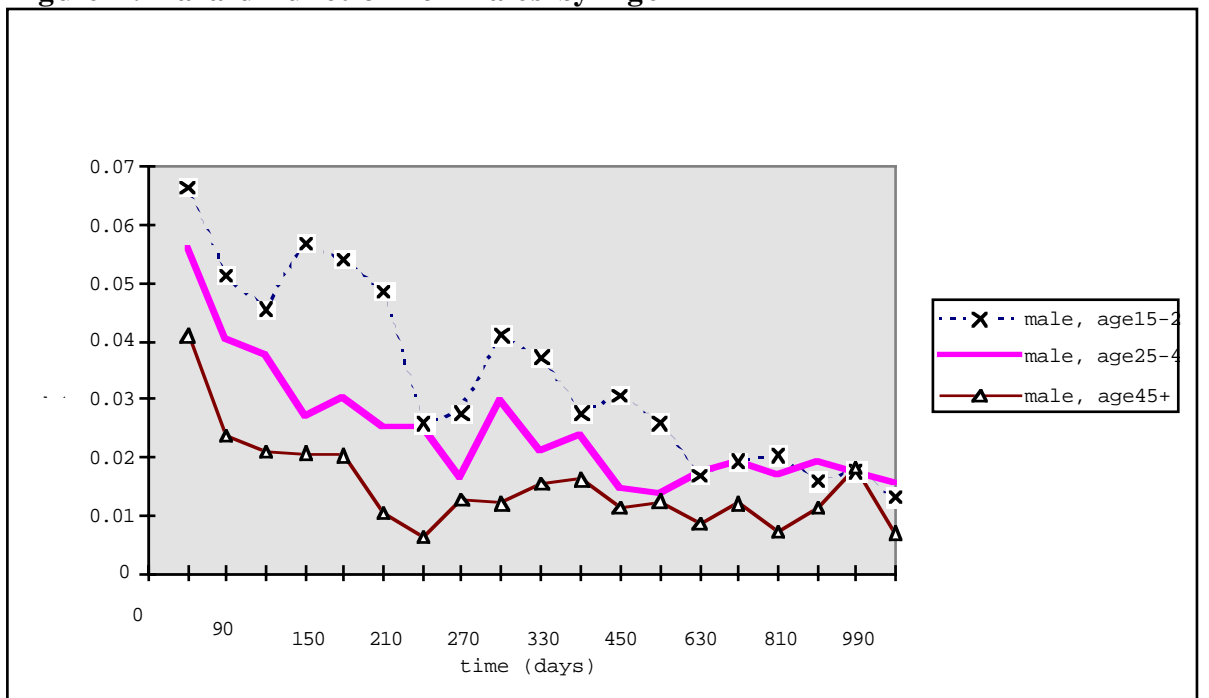


Table 7: Survival Functions: Quartiles and Means

Quartile (percent)	Sample	
	PRG	Jobseeker
75	651	2949
50	161	773
25	33	182
Mean	472	2032

In this context, and for comparison with other studies, it should be recalled that looking for work is not a mutually exclusive state. Looking for work can be concurrent with working. Persons going in and out of short term casual jobs could reasonably respond that they have been looking for work for the past 10 years. Thus, the data includes many spells that have lasted for periods of 5-10 years.

Although the empirical hazard is not strictly monotonic, the Weibull distribution should provide a close parametric approximation. The Weibull distribution has a hazard function of the form

$$h(t) = \lambda \alpha t^{\alpha-1}$$

where α is the shape parameter - the hazard is increasing, constant or decreasing as $\alpha > 1$, $\alpha = 1$ or $\alpha < 1$.

Population heterogeneity is allowed for by the scale factor λ being individual specific and is given by:

$$\lambda_i = \exp(-X_i' \beta),$$

where X is a set of covariates and the β is the associated parameter vector.

This specification assumes that the hazard rates of individuals are proportional to each other.

The estimates of the Weibull model with proportional hazards are given in Table 8 for the two samples, the population reference group and jobseekers. Because duration models are normally estimated after a logarithmic transformation, the shape parameter estimated is $\sigma = 1/\alpha$. The implied estimate of α (0.74) is less than one and the hypothesis $\alpha = 1$ can be rejected at a high level of significance for both samples. The estimates of α are roughly consistent with the weak effect of duration of the looking spell in the transition models. Interestingly, the estimates are

almost identical to the estimates obtained by Brooks and Volker (1986) using Australian gross flow data.

Table 8: Estimates of the Weibull hazard models with covariates for the Jobseeker and Population Reference Group samples

Variable	Sample	
	Population Reference Group only	Jobseekers only
INTERCEPT	8.83*	9.72*
male	-0.24	0.08
age 15-19	-2.69*	-2.41*
age 20-24	-2.06*	-1.94*
age 25-44	-1.08	-1.14*
age 45-54	-0.42	-0.56*
age 55 and over		
married/defacto	-0.08	0.22
born in Australia	0.15	0.00
husband or wife with dependants	0.31	0.18
has disability	0.25	0.35*
years working	-0.23	-0.20*
level of educational attainment	-0.09	-0.07*
labour force status of spouse		
work full-time	-0.24	-0.83*
work part-time	-0.51	-0.22
labour labour market assistance		
CES	-0.21	-0.32*
case management	1.04	0.73*
labour market program	0.54	0.62*
σ	1.32	1.31
Number of observations	384	6153
Non-censored	242	2732
Right censored	142	3421
Log likelihood	-570.79	-7458.07

**denotes significance at one percent level*

Note: A negative coefficient implies a positive effect

For the Jobseeker sample, most of the covariates are statistically significant. As regards the magnitudes, age has by far the largest effect on duration. In addition, labour market history, as represented by years worked, whether the spouse is working and labour market program participation also have quite a large effect. The Population Reference Group sample is much smaller and apart from age the covariates are not statistically significant. The magnitudes of the parameters are nevertheless fairly similar in the two samples.

The estimated hazard function for the two samples (PRG and JS) are displayed in Figure 3. Since the shape parameter (α) is estimated to be almost the same in both samples, the two hazards have the same shape and only differ by a proportionality factor. The Jobseeker hazard is much below that of the PRG indicating that the chances of persons in the former group ceasing to look for work are very much smaller.

The implications of the estimated parameters are illustrated by computing how the median expected duration varies with personal characteristics. The variation according to the two related variables, age and years worked, is shown in Table 9. A person with ten years of education, aged 15-19 and who has never worked has an expected median duration of 446 days. The expected duration is increasing in age and decreasing in years worked. Since the former effect is much larger, however, older persons, even if they have worked for many years, have much larger expected duration than young persons without work experience.

Figure 3: The Estimated Hazard Function for the Population Reference Group and Jobseekers

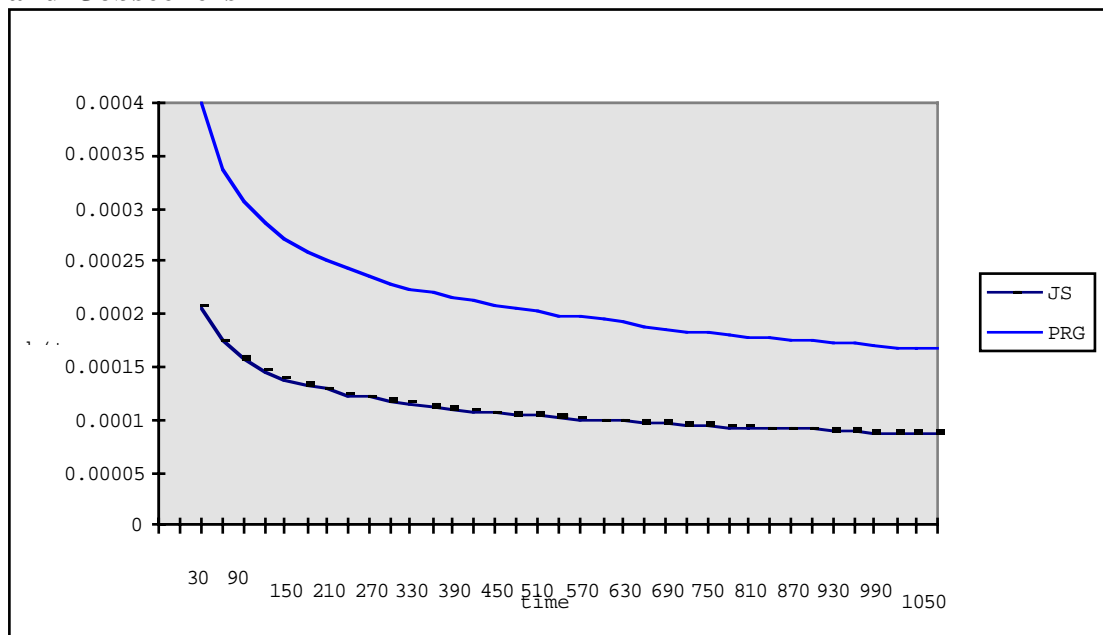


Table 9: Median Duration* of Looking for Work in days by Age and Years Worked

Age	Years Worked					
	never worked	1 year or less	2-3 years	4-5 years	6-10 years	11+ years
15-19	446	366	300	245	201	165
20-24	712	584	478	392	321	263
25-44	1580	1294	1061	869	712	584
45-54	2814	2306	1890	1548	1269	1040
55+	4914	4027	3300	2704	2216	1816

**for a person with 10 years of education*

The effects of varying the other covariates in turn are shown in Table 10 in which the base for the comparison is a person with 10 years of education, aged 25-44 and with 11 or more years worked. The variable which does most to shorten expected duration is having a spouse working. Not distinguishing the destination of a terminating looking spell makes it difficult to interpret this variable. However, the most plausible explanation is that these persons' looking spells tend to end in withdrawal from the labour force. With respect to the three intervention variables, registration with the CES significantly reduced duration while case management and labour market program participation both increase duration. The estimated effect reflect primarily spurious influences. Both variables are coded one if case management registration of participation in a LMP overlaps with a looking spell, i.e. if at any time during the looking spell, the person was under case management or participated in a LMP. This specification is simplistic and does not permit any definitive conclusions about the effect of LMPs for two main reasons. First, the estimated LMP participation effect reflect unobserved heterogeneity. Persons with long expected duration are those who are most likely to be selected into programs. Secondly, during the period of LMP participation, job search may effectively be abandoned even though persons still regard themselves as looking for work. This being the case, the looking spell would increase by the duration of the program a person participates in. To control for such effects, and thus to be able to precisely identify if LMP participation shortens the post program looking spells, requires a more detailed consideration of how job search and LMP participation interact.

Table 10: Median Duration of Looking for Work by other Personal Characteristics (days)

Variable	Sample	
	Jobseeker only	Population Reference Group only
base value*	584	185
male	632	145
married/defacto	727	171
born in Australia	584	215
husband or wife with dependants	645	252
disability impedes employment	827	237
labour force status of spouse		
working full-time	255	145
working part-time	464	111
labour market assistance		
CES registration	424	150
case management	1207	523
labour market program	1082	317

**for a person age 25-44 with 11 or more years of working and 10 years of education*

Conclusions

The data for the Jobseeker sample present a rather dismal picture. Their tendency to remain looking for work is very strong and those who find work have a smaller chance of remaining employed than the population in general. This is reflected in 67 per cent of those looking for work at one point of time were still looking one year later, and the median duration of a looking for work spell is estimated at over two years. It should be recalled, however, that the Jobseeker population is not static. Although, the definition of a jobseeker is much broader than those unemployed, like the pool of the unemployed persons would typically move in and out of this category.

The estimates of duration models reveal a hazard (of ceasing to look for work) declining with duration for both the Jobseeker and population reference group. These findings are consistent with previous Australian research [Brooks (1986), Brooks and Volker (1986)]. Both age and previous work experience have a large effect on the hazard as has participation in a labour market program. LMP participants' expected median duration of looking for work is one to two years longer than non-participants. This considerable lengthening of looking for work is likely to reflect a negative selection effect and less effective job search during program participation. Apparently, these two factors dominate any potential positive effects from participation. An important task of future research is to disentangle these factors so that a pure participation effect can be estimated.

For the sake of simplicity, this paper has used the SEUP definition of labour market states. However, the SEUP definition of looking for work, which is not an exclusive state, is not an ideal

construct for analytical purposes and makes it difficult to compare the findings of this paper with studies using the standard definition of unemployment. The problem of comparability could be partially overcome if it had been possible to explore the properties of the looking for work measure more fully. Future work using this data might use the standard definition of unemployment or some model specific definition of a labour market state.

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