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Short Term Gain, Long Term Pain

Informal Job Search Methods and Post-Displacement Outcomes

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Abstract This paper examines the role of informal job search methods on the labour market outcomes of displaced workers. Informal job search methods could alleviate short-term labour market difficulties of displaced workers by providing information on job opportunities, allowing them to signal their productivity and may mitigate wage losses through better post-displacement job matching. However if displacement results from reductions in demand for specific sectors/skills, the use of informal job search methods may increase the risk of job instability. While informal job search methods are associated with lower wage losses, they lead to increased job instability and increased risk of subsequent job displacement.

Keywords Job displacement · Search methods · Job security

JEL Classification J29 · J45 · M54

Introduction

The sizeable individual welfare losses associated with worker displacement are well documented. For instance, displaced workers experience difficulties with re-employment, and after re-employment are often underemployed and face significant wage reductions (Podgursky and Swaim 1987; Kletzer 1989; Farber 1993; Jacobson et al. 1993; Burda and Mertens 2001). In addition, the experience of displacement is associated with ongoing job instability (Stevens 1997), and there is evidence displacement has negative intergenerational

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effects (Oreopoulos et al 2008). This paper examines the role of informal job search methods on the re-employment outcomes of displaced workers.

There is a long standing interest in the job search methods of unemployed workers generally (Rees 1966; Bradshaw 1973; Datcher 1983; Holzer 1987, 1988; Montgomery 1991; Osberg 1993; Addison and Portugal 2002). A specific focus of this literature is the effect of informal job versus formal job search methods. This literature has focused on two outcomes, wages and tenure. A number of papers have demonstrated that jobs found through informal job search methods, such as the use of friends/relatives, have longer associated tenure than those found through formal methods (Datcher 1983; Simon and Warner 1992). Two contrasting reasons have been suggested for this relationship. The first emphasizes that informal job contacts may alleviate uncertainty in the hiring process leading to superior job match quality. The second suggests that the use of informal networks may reflect limited labour market options, which leads to lower quit rates and hence longer tenure. Evidence on wage outcomes is more mixed. There are studies that demonstrate that use of friends/relatives is associated with higher wages, some who find no relationship and others that find a negative relationship. Loury (2006) demonstrates that a reason for this discrepancy may be variations in the quality of social networks. Together this evidence suggests that both poor and good quality social networks increase expected job tenure, but lead to variations in wage outcomes.

Little is known specifically about the role of job search methods in post-displacement outcomes, and there are a number of reasons why this is of specific interest. First, one source of the negative consequences of displacement relates to its potential to generate adverse signals of productivity to employers (Gibbons and Katz 1991; Abbring et al. 2002). Employers may suspect selectivity in the lay-off patterns of the prior employer and take displacement as a signal of undesirable working qualities in the individual. Hence, displaced workers may find themselves stigmatized in the labour market. The use of inside knowledge of job opportunities and personal references may represent one way that the displaced can reduce adjustment problems and counteract the negative information conveyed to potential employers by job loss through displacement. Moreover, in the case that displacement was genuinely unrelated to work performance, the ability to use direct employer contacts or employment referrals by friends or relatives may allow individuals to signal their 'true' productivity to potential employers. Alternatively, social networks may provide increased information about employment opportunities. In both cases the use of informal job networks would be associated with shorter post-displacement unemployment duration. Whilst, the former potential role for informal job networks, as a productivity signal, would also be expected to reduce post-displacement wage losses.

Second, it has been demonstrated that a major source of post-displacement welfare losses are due to increased job instability in subsequent employment spells (Stevens 1997). Individuals are more likely to have informal job networks in their own industry and/or occupation. Hence, the use of informal

job search methods may be associated with a greater likelihood of being re-employed in a job similar to that which the worker was displaced from. If there is a general reduction in the demand for output associated with these jobs, the use of these networks by displaced workers may contribute to further job insecurity. Hence, while access to informal job networks may alleviate immediate post-displacement problems related to the initial unemployment spell it may also lead to poor quality job matches and ongoing job instability.

This paper presents evidence from Australian longitudinal data that informal job search methods, directly approaching employers or using friends/relatives, are associated with lower wage losses between the displacement and re-employment job when compared to formal job search methods. However, re-employment through informal methods is associated with markedly higher turnover rates, and in particular, an increased likelihood of experiencing another displacement episode. Together these results suggest that informal job search methods may help to alleviate the short term consequences of displacement but may lead to more long terms problems with ongoing employment instability.

The remainder of this paper is set out as follows. Section "Background and Data" discusses the data used, Section "Results" presents the results and Section "Conclusion" concludes.

Background and Data

The data source used is the Australian Bureau of Statistics (ABS) Survey of Employment and Unemployment Patterns (herein referred to as SEUP). SEUP covers the period from the start of September 1994 to the end of August 1997. The survey was conducted in three waves:

1. Wave 1: 5th September 1994 to 3rd September 1995;
2. Wave 2: 4th September 1995 to 1st September 1996; and
3. Wave 3: 2nd September 1996 to 31st August 1997.

Whilst 7,572 people were originally interviewed, the sample size was reduced by attrition to 6,056 by the end of wave 3.[1] Individuals selected for the survey were aged 15–59 and living in a private residence as at May 1995. SEUP has an unusual sample framework. Respondents were split into two subgroups, Jobseekers and a Population Reference Group (PRG). The PRG is a random sample of the population, the Jobseekers group oversamples those who are unemployed, "it comprises individuals who were considered to be potential candidates for a labour market program at the time of recruitment" (Le and Miller 1998). It must be noted that the PRG and Jobseeker group are not mutually exclusive, the PRG contains some Jobseekers.

[1] A shortcoming of SEUP is that its relatively brief length makes it impossible to explore issues that are clearly important such as longer term wage dynamics or career problems related to job search methods.

In SEUP we observe all episodes of turnover, further information is then available on reason for ceasing the job. These include a variety of reasons of quitting behavior, end of temporary/seasonal work, ill health or injury, 'other' reasons and retrenchment. We classify workers who are 'retrenched' as displaced. This question uses the standard ABS labour force definition of retrenchment, whereby loss of work through retrenchment consists of dismissal due to business closing, dismissal for reasons of insufficient labour demand that does not involve a business closure and dismissal for poor performance for reasons unrelated to business conditions. The latter case is not generally considered a job loss due to displacement and differs in this way from the standard US definition of displacement.[2] However, Borland and McDonald (2001) report ABS findings that three quarters of ABS defined retrenchment is associated with the former two categories. It is also worth noting that this definition of displacement does not rely upon tenure in current job. For instance workers do not have to have been in employment at the firm for at least three years prior to job loss to be considered displaced. Our sample consists of all individuals who lose a job through displacement during the first two waves of SEUP. This provides 1,584 individuals. In the case of an individual experiencing multiple displacement episodes we constrain our analysis to the first episode. In line with existing research on job displacement and to avoid empirical difficulties related to re-employment selectivity amongst displaced women we focus on male displaced workers only, leaving 987 individuals. Appendix Table 7 provides selected summary statistics for this sample.

Before continuing it is worth mentioning the unemployment benefits scheme in Australia as it was at the time of SEUP. First, unemployment insurance was not means tested. Second, there was no unemployment insurance cut-off period in Australia or reduction in the replacement ratio over time. Individuals continue to have access to the same level of unemployment benefits irrespective of time in unemployment. Detailed information on unemployment insurance receipt was not available in the Confidentialised Unit Record File (CURF) version of SEUP made available to the researcher. Likewise employment programmes information was not available.

A strength of SEUP as a data source lies in its episodic structure. For each of the waves, information is gathered for every employment, unemployment, not in labour force, training and social security episode experienced by the individual within the sample period. We observe, and have the characteristics of, every labour market episode that occurs during SEUP's sample period.[3] In addition, SEUP contains detailed information on job search methods and it also identifies the method used to gain any employment episodes. Hence there is a distinction between job search methods, which relate to

[2] Also SEUP does not contain any information on plant closures or mass layoffs.

[3] One key shortcoming of SEUP is that its relatively short length makes it impossible to explore issues that are clearly important such as longer term wage dynamics or career profiles related to job search methods.

Table 1 Job search and job finding methods—displaced workers

	Number (%) using search method	Number (%) finding a job	Number (%) using a job search method who found job by that method	Number (%) employed by job finding method
Formal methods			181 (17.5%)	270 (17.3%)
Newspaper advertisement	811 (52.0%)	595 (73.4%)		
PEA	960 (61.5%)	712 (74.2%)		
Advertised/tendered for work	144 (9.2%)	112 (77.8%)		
Informal methods				
Direct employer contact	1,044 (66.9%)	787 (75.4%)	182 (17.4%)	254 (16.2%)
Friends or relatives	602 (38.6%)	446 (74.1%)	100 (16.6%)	273 (17.4%)
Other	119 (7.6%)	101 (84.9%)	20 (16.8%)	260 (16.6%)
Individuals	1,584			

Source: SEUP

ex ante search behavior (i.e. before finding a job), and job finding methods, which report the actual method used to gain a given job. The specific job search methods reported in SEUP are direct employer contact; answering newspaper advertisements; checking factory or Public Employment Agency (PEA) noticeboards (which at the time of SEUP was the Commonwealth Employment Service, CES); registering with the PEA; contacting other employment agencies; advertised or tendered for work; and contacted friends or relatives. This information is recorded for every unemployment episode; and for every employment episode a job finding method is recorded. Job search methods are not mutually exclusive. Unemployed individuals can be recorded as undertaking multiple job search methods. Only one job finding method is recorded for each employment episode.

Table 1 provides information on the *ex ante* job search method used by our sample of displaced workers, along with summary information on *ex post* job finding methods for displaced workers. Specifically, the job search method refers to any use of that job search method during the displacement-unemployment episode. Hence, it is a measure of incidence, not intensity, of use. The data suggest that the use of the PEA (61%), direct employer contact (67%) and answering newspaper advertisements (52%) are the main job search methods used by displaced workers. Green (2011) reports corresponding job search use for all unemployed job seekers in SEUP, the key differences are that displaced workers are less likely to use direct employer contact or the PEA, but are more likely to answer newspaper advertisements. Displaced job seekers do not generally follow a single strategy for seeking a job. On average, the displaced used 2.49 different search methods.[4] It is worth

[4]Green (2011) also uses SEUP and reports that all the unemployed use 2.79 different methods. Both of these figures are slightly higher than that reported by Addison and Portugal (2002) for Portugal (2.05).

noting that as this data refers to job search use during the unemployment spell, search methods that are associated with longer unemployment duration will be over-represented. In the last three columns we report data that provides some indication of the relative effectiveness of job search methods. This data suggests that there are only small differences in the effectiveness of job search methods in terms of gaining employment. Of course, the fact that individuals use multiple job methods make any inference about effectiveness of job search methods based on this type of information at best approximate.

In the following analysis we aggregate search methods. Specifically, we group the use of the PEA and advertisements into one category, 'formal' job finding methods. This is necessary due to relatively small numbers of displaced workers finding work through each of these methods separately. As a result, job finding is assigned as being due to one of four types of job search methods: formal, direct approach, friends/relatives or other. Our primary interest is in the effect of the two 'informal' job search methods, direct approach and contacting friends/relatives on job search and subsequent labour market outcomes of displaced workers. As a result, formal methods are used as the omitted category in the empirical analysis of wages and post-employment stability. In addition, individuals may exit unemployment into self-employment, business ownership or other non-employee forms of work. Although these can really be considered as having an associated job search strategy, we treat these as a separate form of job finding method rather than, for instance, treating them as censored unemployment spells.

Table 2 presents an overview of characteristics of the first re-employment job, along with information on general job stability after displacement, summarized by job finding method. It is immediately noticeable that a large proportion of these job spells finish before the end of the sample period (between 72 and 82 per cent). Moreover, the length of these job spells is relatively short, just over half a year. Job length appears particularly short for re-employment found through direct approach or friends/relatives. These job finding methods are also associated with a higher likelihood of subsequent

Table 2 Characteristics of re-employment job, displaced male workers

	How re-employment job was found			
	Formal	Direct approach	Friends	Other
Re-employed in same occupation group	0.43	0.42	0.48	0.47
Re-employed in lower skill occupation	0.31	0.21	0.23	0.30
Re-employed in same industry	0.33	0.42	0.36	0.43
Underemployed in displaced job	0.22	0.21	0.24	0.13
Underemployed in re-employed job	0.15	0.29	0.25	0.23
Separated from re-employment job (in sample)	0.73	0.82	0.77	0.72
Duration of first re-employment job (days)	239.96	197.48	184.60	230.80
Displaced from re-employment job	0.20	0.34	0.32	0.22
Observations	168	163	182	151

Source: Seup

displacement, perhaps reflecting a bias in informal job networks towards short-term or unstable jobs. A little under half of displaced workers are re-employed in the same occupation group, whilst around a quarter are re-employed in a lower skill occupation. It is noticeable that job finding through either direct approach or friends/relatives is associated with a higher likelihood of re-employment in the same industry and occupation when compared to formal job finding methods. This is supportive of the view that workers' informal job networks are stronger and/or more effective within the same industry and occupation that they were displaced from. The link between changing occupation, industry and re-employment methods are investigated in more detail below.

Results

The Wage Impact of Re-employment Method

A key issue for displaced workers is the loss of earnings that occurs across displacement and re-employment jobs. We seek to gauge the link between search methods and post-displacement wage losses. First, we examine the effect of the job finding method on the change between pre and post-displacement wages. This can be specified as:

$$ln W_i^r - \ln W_i^d = \alpha_0 + \beta X_i + \delta JSM_i + \varepsilon_i \quad (1)$$

Where the superscripts r and d refer to the re—employment and displacement episode, respectively; $\ln W_i$ is the log weekly wage of the *ith* individual; X_i is a vector of controls; JSM_i is the job finding method for the *ith* individual; and ε_i is an I.I.D. error term. Through this approach our primary aim is to examine how job search methods mitigate (or worsen) post-displacement wage losses. The controls in the vector X_i are generally standard, however one deserves further discussion. Changes in wages between displacement and re-employment jobs will be related to the loss of job, occupation and industry specific human capital. To address this we include tenure in the displacement job in the control vector.

Column 2 of Table 3 presents OLS estimates of Eq. 1. The sample for this model excludes individuals who exited to a 'non-employee' labour market state as these individuals did not generally report wage earnings.[5] There is evidence that finding re-employment via direct approach, friends/relatives or 'other' methods is associated with a higher wage change (11–13%) when compared to displaced workers who were re-employed using formal methods, the omitted category. Other estimates suggest that displaced workers with degree qualifications experience substantial wage rate growth, all other things being

[5]Furthermore, in the case that wage/salary earnings were reported it is not clear whether self-employed were receiving other remuneration, such as profits, from their employment.

Table 3 Log weekly wage change: displaced job to re-employment job, age 20–59

	Wage change	Probit (re-employed)	Heckman wage change
Direct approach	0.11*** [0.06]		0.11*** [0.06]
Friends	0.13**[0.06]		0.13** [0.06]
Other	0.12**[0.06]		0.12*** [0.07]
High school	0.11 [0.07]	0.13 [0.13]	0.12*** [0.07]
Diploma/vocational training	0.001[0.04]	0.37* [0.11]	0.05 [0.06]
Degree	0.32**[0.15]	0.33*** [0.20]	0.36* [0.10]
Urban	0.06[0.06]	0.30* [0.11]	0.10*** [0.06]
NESB	0.02[0.06]	−0.29* [0.12]	
Age 30 to 39	−0.06 [0.06]	−0.18 [0.12]	−0.07 [0.06]
Age 40 to 49	−0.08 [0.06]	−0.27** [0.13]	−0.10 [0.07]
Age 50 to 59	0.08 [0.14]	−0.67* [0.17]	0.01 [0.10]
Job seeker	0.13 [0.08]	0.44* [0.10]	0.17*** [0.09]
Tenure (years) in displaced job	−0.01** [0.005]	0.002 [0.009]	−0.01***[0.005]
Unemployment duration	0.05 [0.05]		0.04 [0.05]
Working partner		0.44* [0.13]	
Constant	−0.27**[0.11]	−0.13.[0.18]	−0.47 [0.14]
ρ			0.42 [0.16]
r^2	0.05		
Observations	623	906	623

Notes: [ ] are the standard errors. *,**, *** denote significance at the 1%, 5% and 10% level, respectively

Omitted categories in sets of dummy variables are formal methods, less than high school completion, age 20–29

equal, between the displaced and reemployment job. Having longer tenure and hence more job-specific human capital in the displaced job is associated with wage rate reductions, although the magnitude of this effect is not large. More explicitly, one may want to control for whether the worker changed occupation or industry between the two jobs. Variants of Eq. 1 were estimated that included controls for whether the worker changed industry or occupation between displacement and re-employment job. Whilst the estimates were negative signed, as would be expected, neither were statistically significant at standard levels.

If reservation wages vary across time in unemployment this may lead to a link between job search methods that have lower average associated unemployment duration and the average wages associated with gaining a job through these methods. To investigate this we included a control for duration of time in unemployment following displacement. The resultant estimates for unemployment duration are not statistically significant. Critically, the inclusion or exclusion of this control did not change the magnitude and statistical significance of the point estimates for job finding methods. This was also true of the inclusion of controls for changing industry and occupation. Hence, it does not appear that the higher wages, all others equal, related to informal job finding methods relative to formal methods are a result of variations in unemployment duration or the likelihood of changing industry/occupation across job finding methods.

A potential problem with the OLS estimates is that we do not observe re-employment wages if the displaced worker does not re-enter employment within the sample period. Furthermore, it seems unlikely that these individuals will be a random subsample of displaced workers insofar as they are more likely to possess characteristics (both observed and unobserved) that make it less probable that they will find employment. In the case that these individuals are a non-random subsample of displaced workers, OLS estimates of wages changes will be biased. To investigate this, we utilize a two-stage model that aims to control for sample selectivity in the estimates of wage change (Heckman 1979). The first stage is to estimate the probability of re-employment:

$$\Pr(E_i) = \gamma_0 + \beta X_i + \pi Z_i + \mu_i \tag{2}$$

We do not observe the underlying probability of being employed, E_i^*, instead we observe a dummy variable, E_i, defined as $E_i = 1$ if $E_i^* > 0$ and $E_i = 0$ otherwise. Equation 2 is estimated by maximum likelihood and the inverse mill's ratio is used to correct Eq. 1. This approach seeks to correct the estimates of the covariates in the wage equation for bias due to the non-random partial observability of wages.

Whilst this model can be identified by functional form alone, we choose to introduce an instrumental variable (Z). However, SEUP does not contain many obvious candidates for instruments. We use whether the individual had a working partner. This is not an uncontroversial choice but it fulfills the basic statistical requirements of an instrumental variable insofar as it has a statistically significant relationship to the probability of being re-employed (p-value = 0.000), but appears statistically unrelated to wage changes between displacement and re-employment jobs. Previously, it has been shown that the presence of a working spouse affects re-employment probability and unemployment duration, but generally a working spouse has been found to decrease re-employment probability.[6] However, previous Australian research demonstrates substantial positive correlations between female employment and male employment within households (Dawkins et al. 2005). Our data fits with this previous Australian evidence insofar as having a working partner increases the probability of male re-employment.

Column 3 and 4 of Table 3 present the estimates from the selection equation and the wage change regression that incorporates a correction for sample selection. While there are some changes in the point estimates of other covariates in this model, the job finding method estimates remain unchanged from the OLS regression.

Overall there appears to be evidence that informal job search networks, when compared to formal methods, may reduce wage losses between displace-

[6]For instance Solon (1985) finds that having a working spouse has a negative effect on gaining re-employment, but only for women, while Dynarski and Sheffrin (1990) finds that individuals with working spouses are less likely to gain re-employment if they are in receipt of unemployment insurance.

ment and re-employment spells. This appears to run counter to suggestions that employee referrals and social networks are associated with lower wages (Bentolila et al. 2010). Instead our estimates are more supportive of a view of informal job networks as allowing displaced workers to signal their productivity and providing superior information on match quality. If this latter case is true, we might expect relative flat wage-tenure profiles for displaced workers who found re-employment through friends/relatives. Unfortunately, SEUP does not have a sufficiently long duration for this to be investigated.

Re-employment Characteristics, Displacement Risk and Job Duration

Stevens (1997) presents evidence that a major source of welfare losses for displaced workers is ongoing job instability. Search methods used to enter re-employment may be a critical factor in so far as individuals are more likely to have informal job networks in the industry and/or occupations from which they were displaced. As a result, jobs found through these methods are likely to be associated with an elevated risk of displacement, particularly as firms may operate last in, first out firing policies in the face of poor demand conditions. More generally, job instability may occur due to matching difficulties inherent in the job search process (Jovanovic 1979; Pries 2004). In this case we would expect there to be a link between displacement and ongoing instability, but this would not necessarily be associated with any given job search method.

We examine these issues in two main ways, first we model the risk of turnover from re-employment job, without distinguishing between different reasons for turnover. Through this, we seek to determine if there are any general associations between search methods and job instability for the displaced. Second, we explicitly examine the impact of search method on risk of displacement in the re-employment job.

To model the likelihood of turnover from the re-employment job, we utilize a single risk proportional hazards model to estimate time until turnover from the start of the re-employment job and include job search methods as regressors. We see no reason to assume a particular functional form for the hazard function, as a result we use a discrete interval duration approach (Han and Hausman 1990). In turn, we introduce a gamma frailty term in an attempt to control for unobserved heterogeneity. To the extent that an employer-employee turnover represents a revealed poor job match and the time taken to reveal this will generally be inversely related to how 'poor' this match is, this approach provides some evidence on the link between job search method and job match quality for displaced workers.

Figure 1 presents the estimated baseline hazard from this model. This is plotted for both the baseline hazard from the homogeneous model (dotted line) and the model including a control for individual level unobserved heterogeneity (smooth line). The first thing to note is the magnitude of the probability of exit from the first post-displacement job. Even after introducing a control for unobserved heterogeneity the expected underlying probability of exit from the post-displacement job is over 30% within the first 90 days.

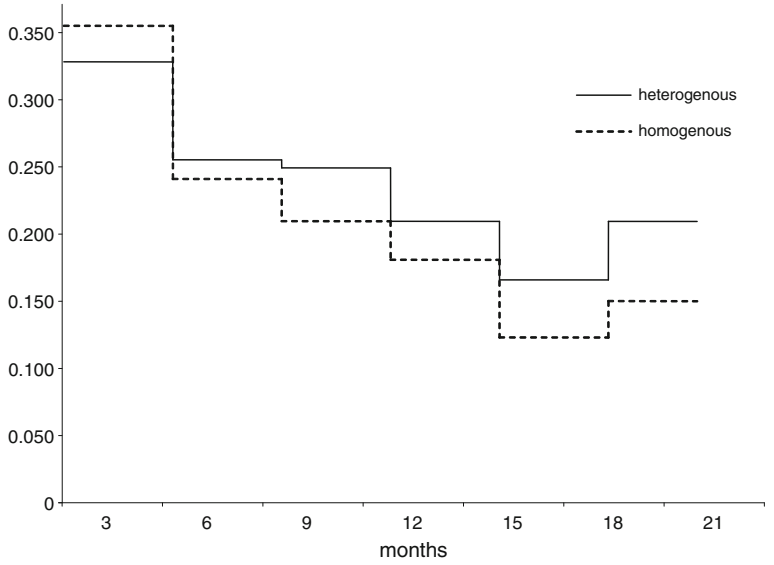

Fig. 1 Baseline hazard, separation from first re-employment job

Both models suggests a degree of negative duration dependence. The ongoing magnitude of risk of exit between 15% and 25% for the first 18 months of the post-displacement job supports the view that post-displacement employment is characterized by instability (Stevens 1997) .

Table 4 Exit from re-employment job, hazard estimates

	Coeff
JSM—direct approach	0.40**[0.19]
JSM—friends	0.42*[0.18]
JSM—other	0.17 [0.17]
High school	−0.35**[0.17]
Diploma/vocational training	−0.27***[0.15]
Degree	−0.22[0.26]
Urban	−0.14[0.14]
NESB	−0.41*[0.18]
Age 30 to 39	−0.18 [0.15]
Age 40 to 49	−0.30***[0.17]
Age 50 to 59	−0.17 [0.22]
Reemployed job characteristics	
Manufacturing	−0.32** [0.15]
Part time	0.08 [0.14]
Professional/manager	−0.46** [0.27]
Para professional	−0.11 [0.15]
Medium skill	−0.22 [0.14]
Large firm	−0.40**[0.18]
Job seeker	0.72*[0.25]
Observations	1864
Log likelihood	−1002.13

Notes: [ ] are the standard errors. *,**, *** denote significance at the 1%, 5% and 10% level, respectively

Table 4 presents the covariate estimates from this model. The results suggest that when compared to job finding through formal search methods, informal job search methods are associated with a higher risk of subsequent turnover. Hence, while results presented earlier suggested that informal job search methods were associated a reduced loss of wages, they are associated with less stable post-displacement employment. Separate models were also estimated (but not reported) including controls for whether the individual changed occupation or industry. These provided some indication that changing occupation reduces the likelihood of turnover, but had no impact on the estimates of job search method effects.

A critical issue is the extent to which individuals who are displaced face ongoing, or even an increased, risk of being displaced in later jobs. Table 5 presents results from a probit regression, where the dependent variable is a dummy that indicates whether individuals lost their first re-employment job through displacement (displacement risk). To aid interpretation all estimates are reported as marginal effects. Re-employment through informal methods, friends/relatives or direct approach, is associated with a subsequent displacement risk of between 14 and 16 percentage points higher than those re-employment jobs found through formal methods. This suggests that displaced workers who use informal job search methods to find re-employment may be exposing themselves to an increased risk of further displacement episodes. We present two variants of this model, where each include a variable indicating whether the worker changed occupation and/or industry, respectively, when

Table 5 Risk of displacement from re-employment job—marginal effects

	(I)	(II)
JSM—direct approach	0.16*[0.06]	0.16*[0.06]
JSM—friends	0.14*[0.05]	0.14*[0.05]
JSM—other	0.04 [0.06]	0.04 [0.06]
High school	−0.01[0.05]	−0.02 [0.05]
Diploma/vocational training	−0.08*** [0.04]	−0.09**[0.04]
Degree	−0.04 [0.08]	−0.06 [0.08]
Urban	0.08***[0.04]	0.08***[0.04]
NESB	−0.09*** [0.05]	−0.09*** [0.05]
Age 30 to 39	0.07 [0.05]	0.07 [0.05]
Age 40 to 49	0.03 [0.08]	0.04 [0.08]
Age 50 to 59	0.08 [0.05]	0.06[0.05]
Reemployed job characteristics		
Manufacturing	0.04 [0.05]	0.03 [0.05]
Professional/manager	−0.12[0.07]	−0.12[0.07]
Para professional	0.06 [0.05]	0.06 [0.05]
Medium skill	0.04 [0.05]	0.04 [0.05]
Large firm	−0.03 [0.05]	−0.03 [0.05]
Part time	0.03[0.05]	0.01[0.05]
Job seeker	0.02 [0.06]	0.02 [0.06]
Changed occupation	−0.09*[0.03]	
Changed industry		−0.05 [0.04]
Observations	623	623
Log likelihood	−354.87	−357.06
r^2	0.04	0.04

Notes: [ ] are the standard errors. *,**, *** denote signficance at the 1%, 5% and 10% level, respectively Omitted categories in sets of dummy variables are formal methods, less than high school completion, age 20–29 and low skill occupation

Table 6 Risk of displacement from re-employment job, changing occupation and changing industry—marginal effects

	Changed occupation	Did not change occupation	Changed industry	Did not change industry
JSM—direct approach	0.21* [0.08]	0.07 [0.08]	0.18* [0.07]	0.11 [0.10]
JSM—friends	0.12*** [0.07]	0.11 [0.08]	0.12*** [0.07]	0.19** [0.10]
JSM—other	0.05 [0.08]	−0.01 [0.09]	0.01 [0.01]	0.09 [0.10]
Observations	328	295	382	241
Log likelihood	−164.79	−179.77	−208.09	−141.07
pseudo r^2	0.08	0.04	0.05	0.06

Notes: [ ] are the standard errors. *,**, *** denote signficance at the 1%, 5% and 10% level, respectively
All other controls as per Table 5. Omitted categories in sets of dummy variables are formal methods, less than high school completion, age 20–29 and low skill occupation

they took their post-displacement job. These results suggest that those who change occupation are nine percentage points less likely to be subsequently displaced from their re-employment job. There is no evidence that changing industry reduces displacement risk. The occupation effect could occur for one of two reasons. These individuals may have moved from an occupation with declining demand, where the underlying risk of displacement is high, to another occupation for which demand is not in decline. Alternatively, the ability to move occupation may indicate the individual has more general skills and/or higher productivity, which will be associated with lower displacement risk irrespective of industry or occupation of employment.

If informal networks are stronger in the industry and occupation within which the worker has previously been employed, the use of informal job search methods may reduce the likelihood of changing occupation. If, in turn, changing occupation (or industry) reduces displacement risk, the use informal job search methods may increase the subsequent risk of displacement. Table 2 suggests that there is a relationship between job finding method and the likelihood of changing occupation/industry. To investigate this further we re-estimate the main model in Table 5 separately according to whether the individual changed occupation or changed industry. Estimates are reported in Table 6 where for brevity only the estimates of job finding method are reported. If the reason why informal job search methods increase displacement risk is due to workers re-entering jobs similar to their displaced job where there is ongoing poor demand conditions the impact on displacement risk should be larger when workers do not change industry or occupation. This does not appear to be the case. If anything the heightened risk of displacement associated with informal job search methods is higher when the worker changed occupation or industry.[7] In unreported estimates a similar strategy was adopted for turnover as a whole. Again there did not appear to be marked differences between the impact of informal job search methods on turnover risk according to whether

[7]Although some care must be taken due to the imprecision of some of these point estimates.

workers changed occupation/industry. Together these estimates suggest that the heightened turnover and displacement risk associated with informal job search methods is not due to re-employment in occupations or industries with poor demand conditions. Instead they suggest that these job search methods are associated more generally with unstable employment.

Conclusion

This paper has investigated the role of job search methods for displaced workers. The use of informal job search methods appears to generate superior wage outcomes in the initial re-employment job. There is evidence that re-employment through friends/relatives or directly approaching employers reduces wage losses between displacement and post-displacement jobs, relative to formal methods. This is supportive of the view that informal job networks allow displaced workers to signal productivity and provide superior information on match quality (Simon and Warner 1992), and runs counter to suggestions that employee referrals and social networks are associated with lower wages (Bentolila et al. 2010).

A critical issue for displaced workers is job stability. It has previously been demonstrated that recurring job loss is a major source of ongoing welfare losses for displaced workers (Stevens 1997). In our data, the first re-employment job appears to be short-lived. Approximately three quarters of re-employment jobs end within the sample period. Those who find these jobs through informal methods face a particularly high rate of turnover, and moreover a 14 to 16 percentage point increase in displacement risk. These results suggest that displaced workers who use informal job networks as a method of gaining re-employment are more likely to face ongoing labour market difficulties.

One explanation for these results is that informal job search is more likely to result in jobs that are similar to the occupation and industry from which the worker was displaced from. Whilst displaced workers who find re-employment through informal job methods are less likely to change industry and occupation, we find no evidence that this is the source of their greater probability of turnover and risk of displacement. Instead, our results suggest that jobs found through informal methods are associated generally with unstable employment. This suggests that formal job search methods, including using the public employment agency, are associated with what could be considered better job matching in the long term. This is potentially important insofar as previous research on unemployed job seekers as a whole has demonstrated that job search via public employment agencies is associated with generally negative outcomes, especially longer unemployment spells and shorter post-reemployment tenure (see for instance Blau and Robins 1990; Bishop 1993; Addison and Portugal 2002). Our departure from these findings could reflect both the type of individuals surveyed in our data set, who are in many ways disadvantaged and the particular form of unemployment we are studying. For instance, Gregg and Wadsworth (1996) found that it these types of indi-

viduals for whom using UK public employment agency was most beneficial. Further research is required to definitively establish the link between job finding through public employment agencies and longer term job stability for displaced workers. Any study of the Australian situation would be made more complex by the movement to an outsourced public employment function with non-government providers.

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Appendix

Table 7 Summary statistics, male displaced workers

Variable	Mean
Age	
15 to 29	0.508
30 to 39	0.216
40 to 49	0.174
50 to 59	0.102
Non-english speaking background	0.159
Highest educational qualification	
Less than high school	0.489
High school completion	0.160
Diploma/vocational training	0.292
Degree or higher	0.059
Capital city/urban area	0.772
Rural area	0.228
Job seeker	0.892
Displaced job characteristics	
Tenure (days)	839.095
Manufacturing sector	0.220
Primary sector	0.209
Service sector	0.571
Professional/managerial	0.079
Para professional	0.280
Medium skill	0.294
Low skill	0.347
Large firm (100+ Employees)	0.262

Source: SEUP

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