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Job Insecurity and Future Labour Market Outcomes

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# **Job Insecurity and Future Labour Market Outcomes\***

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## **Abstract**

This paper uses longitudinal survey data to test the degree to which measures of job insecurity are correlated with changes in labour market status. Three major findings are reported. First, the perceived probability of job loss is only weakly related to both exogenous job separations and subsequent transitions to unemployment and inactivity. Second, while fears of job loss tend to persist across time and job spells, they do so at a highly diminishing rate, suggesting that the impacts on other outcomes (such as psychological well-being) may be quite limited. Third, quit intentions are strongly correlated with both voluntary separations and transitions to alternative employment. The desire to quit, however, does not appear to diminish greatly across successive employment spells.

**JEL classification:** J63

**Keywords:** Job insecurity, job loss, quits, HILDA Survey

Interest in the issue of job insecurity has grown markedly over recent decades, reflecting both the emergence of mass unemployment in most Western economies since the 1970s, and widespread concerns that increased uncertainty in the workplace is an unfortunate by-product of policies emphasizing more flexible labour market institutions. While the notion that there has been a secular rise in job insecurity has not gone unchallenged (e.g., Green 2006; Davis 2008), the deep economic recessions that unfolded in many developed nations in the aftermath of the global economic crisis of 2008 ensures that job insecurity and its consequences will remain an important economic and social problem for the foreseeable future.

Already there exists a sizeable body of research, mainly in the field of organizational psychology, linking job insecurity to poor outcomes for workers. Very differently, researchers in the fields of economics and industrial relations have become increasingly concerned with identifying and quantifying the importance of the various factors that influence job insecurity. One thing that is common to both strands of research is the way job insecurity is conceptualized – mainly by reference to worker concerns about the future existence of their current job (Sverke, Hellgren, and Näswall 2002).

The approach to measurement of job insecurity, however, is much more variable. Indeed, about the only feature that is shared by most (if not all) measures of job insecurity is that they are based on subjective data collected from workers. That said, economists have tended to favour single-item global measures asking respondents to indicate what they think the likelihood of job loss is in the near future. Moreover, relative to researchers from other disciplines, they are much more interested in measures that provide cardinal information rather than just an ordinal ranking of subjects. This has been reflected in the emergence, in a small number of data sets, of probabilistic measures of the expectations of job loss.

Regardless of the measure used, a common feature of most research using subjective measures of job insecurity is that rarely is any serious consideration given to whether these measures are reflected in subsequent labour market experiences. Research mostly does not test whether high levels of perceived job insecurity are associated with a greater likelihood of actual job loss. We find this surprising, especially given the severity of the economic consequences of job insecurity, both in the short- and long-term, are likely to depend on whether or not job continuity is at stake.

This paper examines the degree to which subjective measures of job insecurity, and more specifically probabilistic assessments of the likelihood of job loss, are correlated with actual labour market outcomes, and explores the nature of labour market transitions that

follow as a consequence of job insecurity and the extent to which perceived insecurity persists across different employment spells. For job insecurity measures to have real meaning in terms of labour market status, a strong correlation with involuntary job separations should be observed, with costs rising when these are associated with transitions to unemployment or inactivity as opposed to transitions to alternative employment. We also expect that the costs associated with job insecurity would be greater in the presence of high levels of persistence over time.

### **Previous Research**

While definitions and approaches to measurement vary markedly, most research has defined job insecurity in terms of the fear of job loss. In the psychology literature this is often thought of as the product of perceptions of job threats and the ability to respond to such threats (e.g., Ashford, Lee, and Bobko 1989). Slightly differently, researchers from other disciplines, and especially economics, are more likely to define it as a function of the product of the perceived probability of job loss and the cost of job loss (e.g., Green, Felstead, and Burchell 2000; Nickell, Jones, and Quintini 2002).

There is also increasing acceptance that such inherently subjective indicators are useful predictors of future well-being and behaviour. Most obviously, there is now considerable evidence suggesting that perceived job insecurity is associated with declining physical and mental health, reduced job satisfaction, and increased quit intentions (for reviews, see Sverke, Hellgren, and Näswall 2002; Wichert 2002; De Witte 2005; Green 2006; Cheng and Chan 2008).

Less clear is the extent to which perceived job insecurity is reflected in subsequent labour market outcomes. The few studies that have been conducted support the hypothesis that job insecurity often translates into subsequent job loss, though we are still a long way from achieving a consensus around the magnitude of that relationship. Campbell, Carruth, Dickerson and Green (2007), for example, using data from both the British Household Panel Survey (for the period 1996 to 1998) and the 2001 UK Skills Survey (which followed up respondents 15 months after first being interviewed), found evidence of strong statistical associations between ordinal measures of the expected likelihood of becoming unemployed in the next 12 months and subsequent unemployment. Further, this result was robust to the inclusion of other controls measuring both individual and job characteristics. In both data sources around 2.5% to 3.0% of respondents reported being “very likely” to lose their job in the next year, with the conditional difference in actual unemployment between this

category of workers and those reporting the least levels of concerns about their job security varying between 11 percentage points and 32 percentage points.

More recently, Dickerson and Green (2012) have addressed this same issue using panel survey data from both Australia (from the Household, Income and Labour Dynamics in Australia [HILDA] Survey) and Germany (from the German Socio-Economic Panel [GSOEP]). Both of these data sets have developed measures of job insecurity that appear to have been heavily informed by the work of Dominitz and Manski (1997). Key features include: (i) collection of data on both the expected likelihood of job loss and, conditional on job loss, the expected likelihood of finding another job at least as good as the one held (which can be thought of as a partial measure of the cost of job loss); (ii) provision of probabilistic, and hence cardinal, measures of the perceived probability of job loss<sup>1</sup>; and (iii) clearly distinguishing between voluntary and involuntary job separations at subsequent survey waves. They too found a strong positive relationship between expected job loss and actual job loss outcomes. More interestingly, they also report that workers tend to over-estimate their likelihood of losing their job and under-estimate their likelihood of finding a job of equal quality to the one that was lost. A worker reporting an 80% probability of job loss, for example, is estimated to only have about a 16% and 24% probability of actual job loss in Australia and Germany, respectively. In contrast, only around 54% and 43% of job losers (in Australia and Germany, respectively) who reported that they expected little difficulty in finding a good as good the one they currently held, actually secured a job paying at least 90% of their former wage.

The research reported on here adds to the existing literature by exploiting a panel survey data set to quantify the marginal impact of job insecurity measures on subsequent labour market transitions. Most importantly, we distinguish between job separations that are voluntary and involuntary, and between different types of labour market destinations. This distinguishes this work from other approaches, which tend to focus either on job loss without accounting for the nature of the separation, or on subsequent unemployment status while ignoring transitions to other labour market states. Furthermore, to our knowledge, the dynamic persistence of job insecurity levels has not yet been considered within the literature. Here we measure the relationship between the various components of job insecurity and transitions both within and across labour market states. Specifically, we assess the extent to which job insecurity increases the likelihood of a subsequent job change while accounting for the nature of any job separation (i.e., the extent to which it was voluntary as opposed to involuntary). We also assess the extent to which the various

components of job insecurity are associated with an increased likelihood of unemployment or economic inactivity.

The intention to quit is also considered within this framework. Following Manski and Straub (2000), our view is that any consideration of job insecurity is incomplete without taking into account quit intentions, especially given many workers are likely to respond to rising insecurity by seeking alternative employment. We thus measure the dynamic nature of both fear of job loss and intentions to quit and examine the extent to which such phenomena are job specific or persist across employment episodes. The analysis, therefore, provides a framework for assessing the extent to which measures of job insecurity represent meaningful indicators of labour market instability, which, in turn, will determine their relevance from a policy perspective.

## **Data and Methods**

### ***Data***

Like Dickerson and Green (2012), this paper uses longitudinal data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey to assess the extent to which individuals' expectations with respect to job insecurity are actually reflected in subsequent labour market outcomes. The HILDA Survey is a household panel survey that commenced in 2001. Modelled on household panel surveys undertaken in other countries, and described in more detail in Wooden and Watson (2007), the HILDA Survey began in 2001 with a large national probability sample of Australian households residing in private dwellings. All members of those responding households in wave 1 form the basis of the panel to be pursued in each subsequent wave (though interviews are only conducted with those household members aged 15 years or older), with each wave of interviewing being approximately one year apart. The panel commenced with 13,969 individual respondents, with numbers varying between 12,408 and 13,301 over the following eight survey waves. Deaths and unit non-response contribute to a decline in sample size, while the incorporation of new sample members because of either household members turning 15 years of age or changes in household composition have the opposite effect.<sup>2</sup>

The key measure of job insecurity used in this study is a self-reported probabilistic assessment of the likelihood of involuntary job separation (or job loss), and has been used previously in the work of both Dickerson and Green (2012) and McGuinness and Wooden (2009). The precise wording of the question is as follows:

“What do you think is the per cent chance that you will lose your job during the next 12 months? (That is, get retrenched or fired or not have your contract renewed.)”

Responses lie in the range of 0 to 100%, and interviewers are instructed to advise respondents, when queried, that 0% means they believe there is “no chance” of job loss, while a response of 100% means job loss is an “absolute certainty”. This question is closely based on a question included in the US Survey of Economic Expectations (see Manski and Straub 2000), but with the notable difference that the meaning of job loss is clearly defined.

Quit intentions are also measured using a question that employs a cardinal probabilistic scale. The wording of this question is:

“What do you think is the per cent chance that you will leave your job voluntarily (that is, quit or retire) during the next 12 months? “

The use of probabilistic, and hence cardinal, scales contrasts with the more conventional ordinal scales that employ verbal descriptors and which dominate most attitudinal surveys. As observed in the work of Manski and colleagues (e.g., Manski and Straub 2000; Manski 2004), conventional attitudinal measures provide data that may not be interpersonally comparable (since different people will interpret response options such as “very likely” very differently). Further, the data provided are only ordinal and so, even if responses can be treated as comparable across individuals, they can tell us relatively little about the magnitude of differences in those responses.

Further evidence of the superiority of probabilistic measures over ordinal measures is provided by Dickerson and Green (2012). They exploited a change in the wording of the expected job loss question administered in the GSOEP. Prior to 1999 the question employed a four-point ordinal scale with descriptors (ranging from “definitely” to “definitely not”). In 1999 the GSOEP switched to an 11-point cardinal scale. The question differs from that used in the HILDA Survey in that respondents are forced to select round numbers (i.e., 0, 10, 20 ... 100). The cardinal scale was found to have much more power in predicting actual job loss than the ordinal scale.

The sample used for the analysis to follow draws on observations from the first nine waves of the HILDA Survey, covering the period 2001 to 2009. It is restricted to persons who are working employees at time  $t$ , where an employee is defined to exclude owner managers of incorporated businesses.<sup>3</sup> We also restrict the sample to persons of working age, defined here as 15 to 64 years, and exclude all full-time students. Finally, as our analysis is focused on the question of labour market transitions and dynamic relationships, individuals must be



present in the sample for at least two consecutive waves to be included in most of the models estimated. This provides an initial working sample of 39,218 observations covering 8988 different individuals.

### ***Econometric Methods***

Two types of econometric models are estimated. With respect to assessing the link between measures of job insecurity in wave  $t$  and labour market outcomes in wave  $t+1$  we estimate a random effects probit model. The comparative case in the model relates to individuals who remained with the same employer since the following wave. We estimate separate models for each of four distinct labour market transitions, with the equations taking the following general form:

$$(1) \quad Y_{it+1} = X'_{it}\beta + JS_{it}\phi + \bar{X}'_i\lambda + \overline{JS}_i\gamma + \alpha_i + u_{it}$$

$$i = 1, \dots, N; t = 1, \dots, T$$

We consider four different outcomes labour market transitions that occur between period  $t$  and period  $t+1$ : (i) voluntary separation to a new employer; (ii) involuntary separation to a new employer; (iii) transitions into unemployment; and (iv) transition into economic inactivity.  $X_{it}$  is a vector of personal and job characteristics,  $JS_{it}$  is a measure of job insecurity in period  $t$ ,  $\alpha_i$  are the individual random effects and  $u_{it}$  is an error term which is assumed to be identically and independently distributed. In order to ensure that our models are robust to the influences of unobserved heterogeneity bias, we augment the model with Mundlak correction terms (Mundlak 1978), which has the effect of causing the model to approximate a fixed effects specification.<sup>4</sup> This augmented random effects probit model is preferred to the conditional fixed effects logit estimator on the grounds that it allows us to generate marginal effects for the covariates in the model and, more importantly, enables us to examine the relationships between job insecurity and time-invariant controls (such as gender and migrant status).

At first glance, given that our dependent variables relate to four mutually exclusive labour market transitions, a multinomial framework may seem more appropriate than estimating four separate outcome models. However, at least three of these transitions (an involuntary move to another employer and transitions to unemployment and inactivity) are likely to be either exclusively or at least partially driven by an exogenous factor (i.e., the decision of a employer to terminate an employment contract), suggesting the transitions are likely to be highly independent with respect to each other.

With respect to modelling dynamic persistence in both the fear of job loss and the intention to quit, we estimate a random effects Tobit. Given that our model contains lagged

dependent variables we must be conscious of the initials conditions problem whereby an individual's susceptibility to a particular phenomenon, be that job insecurity or unemployment, may be more heavily related to a persistent unobserved trait as opposed to past levels of unemployment or job insecurity. Specifically, it is unlikely that the series relating to job insecurity will be serially independent, and nor can we assume that the first observation within our panel marks the true beginning of the process; that is, we cannot assume that the initial condition is exogenous. It is thus necessary to separate out actual state dependence in job insecurity from the influences of unobserved factors that pre-date the panel that may have influenced an individual's likelihood of experiencing job insecurity. Failure to control for initial conditions will lead to biased estimates of the dynamic effect. We deal with the problem in this instance by including controls for the initial observation of our lagged dependent variable in our panel (Wooldridge 2002, 2005) and the means of our time-varying dependent variables (Mundlak 1978).

The Tobit model to be estimated can be written as follows:

$$(2) \quad JS_{it} = JS_{it-1}\gamma + X'_{it}\beta + JS_{i0}\phi + \overline{X}_i\eta + \alpha_i + u_{it}$$

$$i = 1, \dots, N; t = 1, \dots, T$$

$JS_{i0}$  denotes the first observation of the insecurity related variable in the panel (the initial conditions control),  $X_{it}$  contains all observed explanatory variables, and  $\overline{X}_i$  represents the means of the time varying controls (the Mundlak corrections).

## Results

### ***Descriptive Statistics***

Tables 1 and 2 provide both the mean values and distributions for the subjective likelihood of job loss and quitting over each of the nine waves of HILDA Survey data used in this analysis. The average perceived probabilities of job loss and quitting are 10.6% and 22.2%, respectively. Table 2 suggests that quit intentions, if anything, were trending slightly upwards over the first six survey waves, before falling in the last three. Expected rates of job loss, on the other hand, have moved in the other direction, reaching a trough in wave 7 (i.e., late 2007) before rising in waves 8 and 9 (Table 1). Overall though, with the exception of the marked decline in expected rates of job loss between waves 1 and 2, these rates have been fairly stable over the period observed.<sup>5</sup>

Table 1. Expected probability (%) of job loss survey wave – Summary statistics

	Mean	Distribution			
		P25	P50	P75	P90
Wave 1 (2001)	14.38	0	0	15	50
Wave 2 (2002)	10.76	0	0	10	50
Wave 3 (2003)	10.88	0	0	10	50
Wave 4 (2004)	10.18	0	0	10	50
Wave 5 (2005)	9.32	0	0	10	30
Wave 6 (2006)	9.90	0	0	10	40
Wave 7 (2007)	9.04	0	0	10	30
Wave 8 (2008)	10.00	0	0	10	40
Wave 9 (2009)	10.96	0	0	10	50

Notes: Estimates are population weighted. Sample restricted to working-age employees (and excludes owner managers of incorporated enterprises and full-time students).

Table 2: Expected probability (%) of quits by survey wave – Summary statistics

	Mean	Distribution			
		P25	P50	P75	P90
Wave 1 (2001)	21.42	0	0	50	80
Wave 2 (2002)	22.88	0	0	50	90
Wave 3 (2003)	21.26	0	0	50	80
Wave 4 (2004)	22.51	0	0	50	80
Wave 5 (2005)	22.29	0	0	50	85
Wave 6 (2006)	24.03	0	0	50	90
Wave 7 (2007)	22.42	0	0	50	80
Wave 8 (2008)	22.25	0	0	50	80
Wave 9 (2009)	20.67	0	0	40	80

Notes: Estimates are population weighted. Sample restricted to working age employees (and excludes owner managers of incorporated enterprises and full-time students).

In line with results reported for the US for the period 1994 to 1998 by Manski and Straub (2000), the respective distributions of the job loss and quit variables are highly skewed, with the majority of respondents assessing the likelihood of both voluntary and involuntary job separation to be close to zero. Indeed, the proportion reporting that the expected probability was precisely zero has, over the course of the panel, averaged 52% for quits and 60% for job loss. Such highly skewed distributions have potentially important implications for the strength of any relationship between job insecurity and labour market outcomes. Most obviously, while it may indeed be the case that there is a strong correlation

between fear of job loss and subsequent unemployment for the relatively small proportion of workers exhibiting a high fear of job loss (Dickerson and Green 2012), for the wider population of employees in employment, whose modal fear of job loss is approximately zero, the relationship is likely to be substantially weaker.

For the descriptive element of this study we define any individual with a probability of greater than or equal to 50% as having a perceived high probability of perceived job loss or quitting. While the decision to use a 50% cut-off is somewhat arbitrary, it is a useful way of identifying patterns apparent within the data. The results are consistent with the skewed distributions, with, on average, relatively low proportions – 10.7% and 28.6% respectively – reporting a high perceived likelihood of job loss and quitting.

As a preliminary indication of the link between job insecurity measures and labour market outcomes, we relate these expectations variables to subsequent labour market status approximately one year later. Table 3 thus reports the expected probability at wave  $t+1$  by labour market status at wave  $t$ , where we have averaged probabilities over eight successive pairs of survey waves. It should be immediately obvious that the level of job separations (the sum of the percentages changing employers and transitioning into unemployment or inactivity) is much higher for individuals who reported expected higher probabilities of job loss and quitting in the previous period. On average, among those workers reporting a 50% or more probability of involuntary job loss, 25.7% will have changed jobs (i.e., moved to a new employer) by the next survey wave (approximately one year later), 4.3% will be unemployed and 6.7% will have become economically inactivity. The comparable percentages for workers reporting a less than 50% probability of job loss are 13.9%, 1.2% and 3.7%. As can be seen, even among those with relatively high expected probabilities of job loss, the likelihood of becoming unemployed is relatively low. Indeed, movement out of the labour market (i.e., economic inactivity) is more likely. The key finding from Table 3, however, is not how many people lose their job, but how many do not. The majority of employees reporting high probabilities of job loss are still with the same employer a year later, and of those that do separate from their current employer, most (70% on average) will be in alternative employment a year later.

*Table 3. Average expected probability of job separation at t+1 by labour market status at t  
(% of employees at wave t)*

<i>Expectation at t</i>	<i>Labour market status at t+1</i>			
	<i>Employed: same employer</i>	<i>Employed: different employer</i>	<i>Unemployed</i>	<i>Inactive</i>
P of job loss $\geq$ 50%	63.3	25.7	4.3	6.7
P of job loss < 50%	81.1	13.9	1.2	3.7
P of quitting $\geq$ 50%	57.0	32.3	2.9	7.9
P of quitting < 50%	86.8	9.4	1.1	2.7

*Notes:* Estimates are population weighted. Rows sum to 100%. Sample restricted to working-age employees (and excludes owner managers of incorporated enterprises and full-time students).

It also not true that employees in insecure jobs (i.e., those who report high probabilities of job loss) and who do subsequently separate from their current employer mostly do so involuntarily. Table 4 reports figures on the average proportion of separations each survey wave that were involuntary, voluntary or for other reasons. It is constructed from survey responses about the main reason why workers left the job they held at the time of the previous interview. Those individuals that reported they had been laid off, retrenched or made redundant, dismissed, that their employer had gone out of business, or just that they had lost their job because no work was available, were all classified as having been subject to an involuntary job separation. Respondents who left their previous job for career or lifestyle reasons were deemed to have left voluntarily.<sup>6</sup> Remaining explanations were grouped into a third miscellaneous category.<sup>7</sup>

Table 4 demonstrates that less one-third of all job separations among individuals with a high perceived risk of job loss in the previous period were involuntary. The highest proportion of separations among individuals with high probabilities of perceived job loss were voluntary, and while some individuals may have jumped before being pushed, it is obvious from the data that most workers fearing job loss experienced relatively little difficulty in finding alternative employment.

In contrast, intentions to quit exhibit a much stronger correlation with subsequent mobility. Forty-three percent of individuals with high quit probabilities had left their employers by the following wave, which compares with around 13% of employees reporting a perceived quit rate of below 50%. Again the vast majority of moves involved a change of employer, with a substantial minority entering inactivity, and transitions to unemployment

being relatively unimportant. Further, the vast majority of separations among workers with high quit probabilities were voluntary.

*Table 4.* Expected probability of job separation at t by job separation type at t+1  
(% of employees at t)

<i>Expectation at t</i>	<i>Involuntary</i>	<i>Voluntary</i>	<i>Other</i>	<i>All job separations</i>
P of job loss $\geq$ 50%	11.9	15.7	9.1	36.7
P of job loss < 50%	2.7	12.1	4.0	18.8
P of quitting $\geq$ 50%	5.9	28.1	9.1	43.0
P of quitting < 50%	3.0	7.1	3.1	13.2

*Notes:* Estimates are population weighted. Sample restricted to working-age employees (and excludes owner managers of incorporated enterprises and full-time students).

Thus, in general, descriptive statistics suggests a relatively weak link between measures of perceived job insecurity, on the one hand, and unemployment and rates of involuntary separation on the other. This, in turn, suggests that the negative economic consequences of such phenomena may not be as pronounced as usually assumed.

We can also report that, for most of the period covered by our data, these annual transition probabilities are fairly stable. However, between wave 8 and wave 9, which roughly coincides with the economic downturn that commenced in the last quarter of 2008, there is a marked change in the composition of job separations, with, as we might expect, many more job separations being involuntary. This trend, however, is mostly concentrated on those that expected to separate from their employer at the start of the period. Among workers with high job loss probabilities in wave 8, the rate of involuntary job separations over the coming year is almost 20%, which compares with the longer-term average of less than 12% reported in Table 4. The rate of voluntary job separations, on the other hand, declines to 11.5% for this group (compared to the long-term average of 15.7%). A similar shift also occurs among those with high expected quit probabilities. Between wave 8 and 9 the rate of involuntary job separation for this group is 9.6% while the rate of voluntary separation is 22.7%. This compares with annual average rates of 5.9% and 28.1%, respectively.

### ***Econometric Analysis***

The preceding bivariate analysis suggests a relatively weak relationship between worker expectations surrounding job insecurity and adverse labour market transitions. Such

descriptive analysis, however, can be misleading as bivariate relationships often incorporate the impacts of many other variables. Multivariate analysis is, therefore, required if relationships are to be measured accurately.

We begin by taking worker perceptions on job insecurity and estimating equation (1). As noted earlier, job separations are divided into four main categories: voluntary separations leading to alternative employment; involuntary separations leading to alternative employment; separations leading to unemployment; and separations leading to inactivity.

In addition to our job insecurity variables, we include controls for gender, age, marital status, migrant status, educational attainment, recent unemployment experience, socio-economic background (represented by father's occupational status), residential location, hours of work (whether works full-time or part-time hours), trade union membership, job tenure, contractual employment status, workplace size and industry<sup>8</sup>, all of which are expected to influence an individual's likelihood of experiencing a job separation (and are described in more detail in an appendix). On the basis that workers with higher expectations regarding their employment prospects are more likely to job separate (and, more specifically, to subsequently experience a voluntary job separation), we also included a control that measures the individual's expectation of gaining at least similar quality employment in the event of an involuntary job separation. Like the measures of expected job loss and quit intentions, this variable is a probabilistic measure scored on a 0 to 100 percentage scale.

As mentioned previously, the models are estimated using data from the first nine waves of the HILDA Survey. The results are presented in Table 5. In line with the descriptive analysis, we find little evidence of a strong relationship between expected probability of job loss and subsequent unemployment, with only a small and statically weak relationship uncovered. A similarly weak statistical relationship is evident with respect to transitions to inactivity. The impact with respect to an involuntary change of employer is more pronounced, but the marginal effects are rather small, with an 80% perceived likelihood of job loss raising the probability of an involuntary employment change in the following wave by only about 5%. We also find no statistical link between the perceived fear of job loss and a subsequent voluntary change of employer. Intentions to quit, on the other hand, are associated with an increased probability of all four possible labour market transitions. Not surprisingly, the effects are largest for a voluntary change of employer, with an 80% perceived probability of quitting raising the likelihood of this event in the following wave by 14%. The effects with respect to the more negative transitions of an involuntary

employment change or a movement into unemployment or inactivity are much smaller, with an 80% perceived probability of quitting being associated with marginal effects of 1.8%, 0.1% and 4.3% respectively.

The multivariate analysis thus reinforces our earlier conclusion that both measures of perceived job insecurity are poorly correlated with what are generally perceived to be highly negative labour market transitions into unemployment and inactivity. Furthermore, while individuals who have a high perceived chance of job loss are relatively more likely to be in alternative employment by the following wave, and mainly as a consequence of an involuntary separation, the magnitude of this effect is quite small.

With respect to the additional covariates in the model, most appear to be relatively unimportant. A notable exception here is length of job tenure with, as we would expect, the likelihood of job separation (both voluntary and involuntary) declining with length of job tenure, but at a declining rate (as reflected in the positive sign on the coefficients on the quadratic terms).<sup>9</sup>

*Table 5. Random effects probit regressions of job separations: marginal effects (standard errors in parentheses)*

	<i>New employer</i>		<i>Not working</i>	
	<i>Voluntary</i>	<i>Involuntary</i>	<i>Unemployment</i>	<i>Inactivity</i>
P of quitting	0.00177*** (0.000)	0.00022*** (0.000)	0.00011*** (0.000)	0.00054*** (0.000)
P of job loss	0.00009 (0.000)	0.00067*** (0.000)	0.00006* (0.000)	0.00011* (0.000)
P or re-employment	0.00032*** (0.000)	-0.00000 (0.000)	0.00001 (0.000)	0.00008* (0.000)
Female	0.00166 (0.004)	-0.00099 (0.002)	-0.00086 (0.001)	0.02463*** (0.002)
Aged 30-39	0.01658* (0.010)	0.00764 (0.007)	0.00289 (0.004)	0.00703 (0.007)
Aged 40-49	0.00938 (0.013)	0.01239 (0.009)	0.00204 (0.006)	0.00265 (0.009)
Aged 50-59	0.04331** (0.021)	0.01259 (0.013)	0.01016 (0.011)	0.01797 (0.014)
Aged 60+	0.01537 (0.031)	0.00295 (0.016)	0.02843 (0.029)	0.11707*** (0.044)
Single	-0.00163 (0.008)	0.00144 (0.005)	-0.00282 (0.003)	-0.01263** (0.005)
Migrant (English speaking)	0.00527 (0.005)	0.00235 (0.003)	0.00085 (0.002)	0.01140*** (0.004)



	<i>New employer</i>		<i>Not working</i>	
	<i>Voluntary</i>	<i>Involuntary</i>	<i>Unemployment</i>	<i>Inactivity</i>
Migrant (non-English speaking)	-0.00680 (0.005)	-0.00204 (0.003)	0.00222 (0.002)	0.00570 (0.004)
Educ: Year 10-12	-0.06629 (0.044)	-0.00337 (0.025)	0.05397 (0.063)	0.00295 (0.031)
Educ: Cert / Diploma	-0.05867 (0.043)	-0.00893 (0.023)	0.03792 (0.045)	0.00397 (0.029)
Educ: Degree or higher	-0.03935 (0.048)	0.01318 (0.039)	0.01937 (0.039)	0.00695 (0.036)
Unemployed last year (%)	-0.00085 (0.001)	-0.00024 (0.000)	-0.00037* (0.000)	-0.00068 (0.000)
Father was professional	0.01594 (0.064)	0.02977 (0.065)	0.01557 (0.047)	0.05692 (0.104)
Urban	0.00207 (0.012)	0.00735 (0.006)	0.00077 (0.004)	-0.00379 (0.009)
Full-time employee	-0.00926 (0.008)	-0.00230 (0.005)	0.00098 (0.003)	-0.00365 (0.004)
Trade union	0.00336 (0.007)	0.01708*** (0.006)	0.00087 (0.003)	0.00250 (0.005)
Job tenure	-0.00584*** (0.001)	-0.00210*** (0.000)	-0.00117*** (0.000)	-0.00037 (0.000)
Job tenure squared	0.00011*** (0.000)	0.00005*** (0.000)	0.00003*** (0.000)	0.00002* (0.000)
Fixed-term contract	-0.00930 (0.007)	-0.00838** (0.004)	0.00160 (0.003)	-0.00232 (0.005)
Casual	0.00775 (0.009)	-0.01142*** (0.004)	0.00279 (0.003)	-0.00124 (0.005)
Workplace size <5	0.01467 (0.011)	0.03267*** (0.011)	0.00277 (0.005)	-0.00475 (0.006)
Workplace size 5-9	0.01861* (0.010)	0.01631** (0.008)	-0.00168 (0.003)	0.01057 (0.007)
Workplace size 10-19	0.01330 (0.008)	0.01390** (0.006)	-0.00347 (0.002)	0.00307 (0.006)
Workplace size 20-49	0.00477 (0.007)	0.00461 (0.005)	0.00198 (0.003)	-0.00204 (0.004)
<i>Mundlak correction terms</i>				
P of quitting (mean)	-0.00003 (0.000)	-0.00003 (0.000)	0.00008** (0.000)	0.00017*** (0.000)
P of job loss (mean)	0.00002 (0.000)	-0.00003 (0.000)	0.00014*** (0.000)	0.00031*** (0.000)
P of re-employment (mean)	0.00031*** (0.000)	0.00008 (0.000)	0.00000 (0.000)	-0.00019*** (0.000)
Age 30-39 (mean)	-0.01989* (0.010)	-0.00992 (0.006)	-0.00324 (0.004)	-0.00513 (0.007)

	<i>New employer</i>		<i>Not working</i>	
	<i>Voluntary</i>	<i>Involuntary</i>	<i>Unemployment</i>	<i>Inactivity</i>
Age 40-49 (mean)	-0.02844** (0.014)	-0.01061 (0.008)	-0.00132 (0.005)	-0.02803*** (0.009)
Age 50-59 (mean)	-0.07914*** (0.018)	-0.01247 (0.010)	-0.00516 (0.007)	-0.01691 (0.011)
Age 60+ (mean)	-0.07259** (0.031)	-0.00422 (0.016)	-0.02326** (0.011)	-0.03793** (0.015)
Single (mean)	0.00204 (0.009)	-0.00216 (0.005)	0.00695** (0.003)	0.00508 (0.006)
Educ: Year 10-12 (mean)	0.07710 (0.051)	0.00279 (0.026)	-0.03195** (0.016)	-0.02151 (0.030)
Educ: Cert / Diploma (mean)	0.07280 (0.049)	0.00867 (0.024)	-0.02664* (0.014)	-0.02060 (0.028)
Educ: Degree or higher (mean)	0.04969 (0.055)	-0.01143 (0.030)	-0.01985 (0.017)	-0.02280 (0.033)
Unemployed last year (%) (mean)	0.00170* (0.001)	0.00083* (0.000)	0.00082*** (0.000)	0.00126** (0.001)
Urban (mean)	0.00519 (0.013)	-0.01237 (0.008)	0.00173 (0.005)	0.00542 (0.009)
Full-time employee (mean)	0.01765* (0.009)	0.00642 (0.006)	-0.00244 (0.003)	-0.02015*** (0.005)
Trade union (mean)	-0.02113** (0.008)	-0.02159*** (0.005)	-0.00343 (0.003)	-0.00167 (0.005)
Fixed-term contract (mean)	0.02625** (0.010)	0.00853 (0.006)	0.00185 (0.004)	-0.00209 (0.007)
Casual (mean)	0.01550 (0.011)	0.01751*** (0.006)	0.00544 (0.004)	0.01779*** (0.006)
Workplace size <5 (mean)	0.00842 (0.012)	-0.01996*** (0.007)	-0.00077 (0.005)	0.00955 (0.008)
Workplace size 5-9 (mean)	0.00685 (0.011)	-0.01056* (0.006)	0.00673* (0.004)	-0.00877 (0.007)
Workplace size 10-19 (mean)	0.01355 (0.010)	-0.00938 (0.006)	0.00816** (0.004)	0.00016 (0.007)
Workplace size 20-49 (mean)	0.00598 (0.009)	-0.00224 (0.005)	0.00289 (0.003)	0.00318 (0.006)
Observations	29463	27441	27138	27877
No. of individuals	7818	7414	7401	7588
Log likelihood	-6642.2868	-2374.2995	-1474.4366	-3730.7463
Wald chi <sup>2</sup> (32)	2501.87	959.93	183.26	735.56

*Note:* \*\*\*, \*\* and \* denote statistical significance at the 99%, 95% and 90% confidence levels, respectively. While not reported, the four equations also included a set of industry dummies.

Given that the most likely outcome that follows perceptions of job insecurity is a change in employer, we next assess the extent to which perceptions of the likelihood of job separation are job specific. We estimate dynamic random effects Tobit models of both perceived job loss and intention to quit, with controls included for gender, age and education (equation 2). For each outcome we estimate two specifications, one containing one lag and the other two lags. We exclude lagged job characteristic controls from the model as they are likely to be highly correlated with the lagged separation variables. Furthermore, for simplicity we also opt to include a single age control and a quadratic term as we are only concerned with the degree of state persistence, with any non-linearities that might occur across age categories of little consequence. The results of these estimations are presented in Table 6. The first thing to note is that, after controlling for initial conditions, there is a strong dynamic aspect to both the expectation of job loss and the intention to quit, with the effects strongest in the model containing two lags. The marginal effects indicate, for instance, that employees reporting an 80 percent perceived fear of job loss (intention to quit) in periods  $t-1$  will have an expected fear of job loss in period  $t$  of 22 per cent (24 per cent). Nevertheless, while the results point quite clearly to the existence of dynamic effects, perceptions of expected job loss (and intentions to quit) still only have relatively small associations with those same perceptions two periods (years) later

Within the models we test for interaction effects between levels of perceived job loss and intentions to quit in prior waves and the existence of a subsequent job separation. With respect to expected job loss, the results indicate that a worker's subsequent level of insecurity falls somewhat following both voluntary and involuntary separations. Nevertheless, the marginal effects are quite small, suggesting that an individual's level of perceived job loss, or their intention to quit, will fall by less than 10 percentage points following a job separation irrespective of whether the separation is voluntary or involuntary in nature. Thus, the dynamic model suggests that individual's perceptions of job loss will persist over time, both within and across employment spells, although these decline rapidly and are lessened further as a consequence of job separations. The implication of this finding is that in addition to the economic consequences of any heightening of perceived job loss being limited, the effects on other outcomes, such as psychological well-being may also be unlikely to persist over an extended period.

Table 6. Dynamic random effects Tobit regressions of perceived likelihood of job separations: marginal effects (standard errors in parentheses)

	<i>P of job loss</i>		<i>P of quitting</i>	
	<i>1 lag</i>	<i>2 lags</i>	<i>1 lag</i>	<i>2 lags</i>
JS(-1)	0.21158*** (0.013)	0.27430*** (0.016)	0.22746*** (0.014)	0.29526*** (0.016)
JS(-2)		0.08290*** (0.015)		0.07245*** (0.016)
Female	-7.75854*** (0.709)	-7.48384*** (0.762)	-2.96787*** (1.026)	-3.86770*** (1.112)
Age	-0.04704 (0.440)	0.36916 (0.592)	-5.51858*** (0.697)	-6.75471*** (0.954)
Age squared	0.00495 (0.005)	0.00504 (0.007)	0.07314*** (0.008)	0.09302*** (0.011)
Educ: Year 10-12	-0.16967 (7.039)	9.70001 (8.665)	8.89946 (12.220)	-3.05959 (14.427)
Educ: Cert / Dip	2.31171 (6.797)	7.92866 (8.248)	21.32352* (11.817)	5.35195 (13.744)
Educ: Degree+	-6.11682 (8.005)	-0.40308 (10.006)	21.66397 (13.456)	9.07855 (16.168)
JS(-1)*Involuntary	-5.83584*** (2.249)	-4.69855 (2.987)	6.44770* (3.715)	9.24254* (4.969)
JS(-1)*Voluntary	-7.88514*** (1.887)	-9.37277*** (2.377)	-0.20455 (3.054)	0.27807 (3.830)
JS(-2)*Involuntary		-4.62936 (3.694)		5.25311 (6.257)
JS(-2)*Voluntary		-3.35133 (2.368)		-6.61934* (3.762)
Constant	-22.16324*** (4.186)	-23.04790*** (4.942)	63.27469*** (6.174)	67.09193*** (7.394)
<i>Mundlak correction terms</i>				
Y(0): Initial condition	0.33091*** (0.016)	0.27138*** (0.018)	0.34331*** (0.017)	0.29363*** (0.019)
Age (mean)	0.39579 (0.487)	-0.00093 (0.639)	1.65264** (0.761)	2.60001** (1.019)
Age squared (mean)	-0.01311** (0.006)	-0.01321* (0.008)	-0.03756*** (0.009)	-0.05325*** (0.012)
Year 10-12 (mean)	4.40807 (7.291)	-5.17665 (8.915)	-1.85548 (12.514)	8.82660 (14.755)
Cert / Dip (mean)	1.61539 (7.059)	-3.62208 (8.509)	-13.41362 (12.124)	2.61792 (14.088)
Third level (mean)	12.58383 (8.233)	6.76886 (10.224)	-4.75717 (13.728)	7.41446 (16.463)

	<i>P of job loss</i>		<i>P of quitting</i>	
	<i>1 lag</i>	<i>2 lags</i>	<i>1 lag</i>	<i>2 lags</i>
Observations	39044	28914	39070	28929
No. of individuals	8957	7059	8962	7058
Log likelihood	-83520.997	-61150.667	-98709.805	-71785.445
Wald chi <sup>2</sup> (15 or 18)	1295.84	1029.25	2446.34	1880.97

*Note:* \*\*\*, \*\* and \* denote statistical significance at the 99%, 95% and 90% confidence levels, respectively.

With respect to intentions to quit, there is no consistent evidence to support the view that this is lowered in any substantial way following a job separation. Thus quit intentions appear to persist across jobs, albeit at a rapidly declining rate. At first glance this appears consistent with the view that individuals use job mobility as a means of achieving wage growth and occupational progression (Rosen 1972; Sicherman and Galor 1990). However, the observed pattern is also in line with the view that individuals quit their jobs because of a quality poor match (Jovanovic 1979) and, consistent with the findings of McGuinness and Wooden (2009), the problems of a poor quality employment match are not eradicated as a consequence of job separations, and thus the intention to quit persists.

We can test the relative strength of these competing hypotheses by regressing a number of job quality related variables on the intention to quit measure. More specifically, we include measures of overskilling, job complexity and upskilling (i.e., skills acquisition). If workers with high quit expectations are remaining in jobs on a short-term basis in order to gain basic essential skills to facilitate career progression, then we would expect the intention to quit to be correlated with jobs that are both viewed as non complex and involving some level of skill acquisition. Conversely, if the desire of workers to job separate is a consequence of a poor job match, then we would expect some correlation between the intentions to quit and the size of any skills surplus or deficit on the side of the employee.

The variables we include to represent the concepts of overskilling, job complexity and skills acquisition are all constructed from responses to questions included in a separate self-administered questionnaire, and hence are associated with additional non-response.<sup>10</sup> They are all single-item measures scored on a 1 to 7 Likert scale (see the Appendix).

Results from the estimation of a random effects Tobit model which includes these three variables are reported in Table 7. The results are not supportive of job mobility theory; quit intentions are negatively correlated with skill acquisition, which arguably should be a necessary condition for a scenario under which planned job mobility is driven by aspirations

for career progression. The finding that workers with high quit intentions reported their jobs to be either complex and difficult or below their capabilities, points to the conclusion that the desire to job separate is more likely to occur as a consequence of mismatch, thus supporting job matching theory. For the sake of completeness, we also model the fear of job loss as a function of both mismatch and skill acquisition. The results from Table 7 indicate that while underskilling and skill acquisition are not strong determining factors driving individuals' perceived fear of job loss, overskilling is. Exactly why overskilled workers have a heightened fear of job loss is unclear. One possibility is that overeducated workers tend to earn a wage premium relative to individuals doing the same job who are well matched (McGuinness (2006); thus the high relative cost associated with surplus skills may result in such workers feeling more susceptible to redundancy at any given point in time. With respect to the other covariates in the models, the fear of job loss is positively related to being male, a recent history of unemployment, being a migrant from a non-English speaking background, and employment on a fixed-term or casual contract, and negatively related to age. A u-shaped relationship exists with length of job tenure, with the minimum in the quadratic function occurring at around 8 years. Turning to intentions to quit, these are positively related to being male, a migrant from an English speaking country, having a tertiary education qualification, being single, employment on a fixed-term or casual contract, length of job tenure, a history of long-term sickness and being employed in a medium sized enterprise. Intentions to quit were negatively related to being a migrant from a non-English speaking background, a history of unemployment and being aged 30 or over.

### **Summary and Conclusions**

This paper examines the relationship between various aspects of job instability and subsequent labour market outcomes. The rationale for the research is to assess the economic implications of job instability measures given other findings indicating that a fear of job loss is a strong predictor of subsequent job loss and has negative implications for psychological well being. It must be borne in mind that the analysis relates to a period of high economic and employment growth in Australia, leaving open the possibility that the relationships may be more pronounced during periods of recession.

Table 7. Random effects Tobit regressions of perceived probability of job separation: marginal effects(standard errors in parentheses)

	<i>P of job loss</i>	<i>P of quitting</i>
Female	-5.82864*** (0.814)	-4.38004*** (1.158)
Migrant (English speaking)	0.59059 (1.171)	4.59749*** (1.666)
Migrant (non-English speaking)	3.48613*** (1.164)	-4.77978*** (1.693)
Unemployed last year (%)	0.09050*** (0.025)	-0.14678*** (0.040)
Educ: Year 10-12	-12.20280* (6.282)	9.49427 (9.946)
Educ: Cert / Diploma	-9.38569 (6.144)	19.71255** (9.727)
Educ: Degree or higher	-12.23651* (6.708)	18.14492* (10.523)
Father was professional	9.39888 (7.789)	20.47490* (11.109)
Single	1.01120 (0.986)	4.30294*** (1.497)
Aged 30-39	1.20381 (1.227)	-4.43264** (1.839)
Aged 40-49	-1.24179 (1.637)	-10.82837*** (2.508)
Aged 50-59	-5.48874*** (2.016)	-10.18861*** (3.144)
Aged 60+	-6.90708** (2.856)	9.21534** (4.409)
Urban	-0.36187 (1.480)	-0.33677 (2.218)
FT employee	0.07220 (0.885)	0.04274 (1.337)
Trade union	-0.16523 (0.868)	-1.35746 (1.333)
Job tenure	-0.34159** (0.133)	1.47608*** (0.205)
Job tenure squared	0.02122*** (0.005)	-0.01300* (0.008)
Fixed-term contract	15.11632*** (0.881)	2.95575** (1.386)
Casual	12.57346*** (0.896)	16.03042*** (1.371)
Long-term sick	1.55154* (0.812)	3.85299*** (1.261)
Workplace size <5	1.92654* (1.161)	1.00140 (1.792)
Workplace size 5-9	0.92443 (1.035)	2.41068 (1.591)
Workplace size 10-19	-0.49030 (0.931)	1.17130 (1.426)
Workplace size 20-49	1.02960 (0.812)	4.22376*** (1.246)
Overskilling	0.99633*** (0.217)	4.75844*** (0.332)

	<i>P of job loss</i>	<i>P of quitting</i>
Skill acquisition	-0.23971 (0.205)	-3.92375*** (0.313)
Job difficult / complex	0.30665 (0.203)	1.64561*** (0.309)
Constant	-8.15824** (3.975)	32.38688*** (5.736)
<i>Mundlak correction terms</i>		
Unemployed last year (%) (mean)	0.17890*** (0.043)	0.01104 (0.067)
Educ: Year 10-12 (mean)	16.00004** (6.516)	0.82753 (10.228)
Educ: Cert / Diploma (mean)	14.93382** (6.388)	-3.24059 (10.023)
Educ: Degree or higher (mean)	19.32627*** (6.981)	11.02503 (10.858)
Father was professional (mean)	-9.10112 (7.873)	-16.23086 (11.226)
Single (mean)	0.66936 (1.306)	0.38949 (1.934)
Aged 30-39 (mean)	2.09430 (1.686)	-12.35544*** (2.464)
Aged 40-49 (mean)	6.77999*** (2.004)	-13.49308*** (3.001)
Aged 50-59 (mean)	10.50999*** (2.448)	-18.67333*** (3.731)
Aged 60+ (mean)	7.88621** (3.752)	-18.10471*** (5.632)
Urban (mean)	3.78652** (1.875)	2.40177 (2.753)
FT employee (mean)	0.01983 (1.503)	-1.67994 (2.190)
Trade union (mean)	1.72197 (1.348)	-8.47264*** (1.995)
Job tenure (mean)	-1.51956*** (0.213)	-6.54465*** (0.313)
Job tenure squared (mean)	0.01667** (0.007)	0.14070*** (0.011)
Fixed term contract (mean)	5.50848*** (1.899)	1.99564 (2.801)
Casual (mean)	1.61217 (1.628)	-1.33628 (2.387)
LT sick (mean)	5.21804*** (1.594)	1.87996 (2.349)
Workplace size <5 (mean)	-4.55628** (1.960)	-10.95442*** (2.900)
Workplace size 5-9 (mean)	-5.00398*** (1.823)	-5.72652** (2.664)
Workplace size 10-19 (mean)	-1.25416 (1.673)	0.40780 (2.440)
Workplace size 20-49 (mean)	-3.63715** (1.535)	-1.81964 (2.233)
Overskilling (mean)	3.28366*** (0.409)	1.53468** (0.599)
Skill acquisition (mean)	0.96110** (0.391)	2.07000*** (0.571)



	<i>P of job loss</i>	<i>P of quitting</i>
Job difficult / complex (mean)	1.02345*** (0.366)	1.98141*** (0.534)
Observations	46568	46599
No. of individuals	11218	11223
Log likelihood	-101428.35	-117456.43
Wald chi <sup>2</sup> (32)	2266.85	4370.57

*Notes:* \*\*\*, \*\* and \* denote statistical significance at the 99%, 95% and 90% confidence levels, respectively. While not reported, both equations also included a set of industry dummies.

We find that perceived job loss has a low marginal impact on the likelihood of redundancy and subsequent transitions to unemployment and inactivity. Feelings of job insecurity, however, are state dependent. Nevertheless, while both fears of job loss and intentions to quit persist over time, the extent of that persistence appears to decline at a fairly rapid rate. The results imply that in addition to the direct economic consequences being limited, adverse impacts with respect to well-being and job satisfaction may also be unlikely to persist at a high rate over time, both across and within job spells.

Very differently, we also find that intentions to quit are strongly correlated with voluntary separations and, in particular, subsequent transitions to alternative employment. As with the fear of job loss, quit intentions persist over time but at a declining rate, but we find no evidence that intentions to quit are diminished following a job separation. The economic implications associated with quit intentions will be dependent on their motivational drivers. If intentions to quit are driven by a desire to achieve occupational mobility, then the economic consequences are likely to be largely positive in terms of both earnings and occupational progression. However, if quit intentions are driven by a desire to escape a poor labour market match, the existing evidence suggests that the negative aspects of employment associated with mismatch are likely to persist across jobs (McGuinness and Wooden 2009). The evidence presented here is more supportive of the latter interpretation.

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## ENDNOTES

<sup>1</sup> In the HILDA Survey re-employment perceptions is also measured with a probabilistic measure similar to that used for measuring the probability of job loss. In contrast, in the GSOEP re-employment prospects is measured on a three-point ordinal and fully labeled scale. The three response options provided are “easy”, “difficult” or “almost impossible”.

<sup>2</sup> With two exceptions, new sample members only remain in the sample for as long as they co-reside with an original sample member. The exceptions are children born to an original sample member, and persons who have a child with an original sample member.

<sup>3</sup> In the official Labour Force Survey, conducted by the Australian Bureau of Statistics, such persons are defined as employees of own business and hence included with other employees.

<sup>4</sup> This correction amounts to including the means of the time varying variables as additional covariates in the model.

<sup>5</sup> The marked drop in the expected rate of job loss between waves 1 and 2 may be an artifact of the data collection. First, it could reflect a change in the wording of the relevant question. In wave 1 the definition of job loss made specific reference to “getting laid off” and “being made redundant”. These were removed from the survey instruments administered in subsequent waves. Further, in wave 1 the definition of job loss was read to all respondents, whereas in later waves the definition becomes optional text. Second, we cannot discount the possibility that the decline reflects non-random sample attrition not corrected for in the weighting process.

<sup>6</sup> Individuals in this category cited reasons such as: not satisfied with previous job; to obtain a better job / just wanted a change / to start a new business; retired or did not want to work any longer; to stay at home to look after children, the house, or someone else; to travel or have a holiday; desired a change of lifestyle; to return to (or needed more time for) study; too much travel time or too far from public transport; and migrated.

<sup>7</sup> The main reasons here were: the job was only temporary or seasonal; own sickness or disability; pregnancy or to have children; to care for kids; and spouse / partner transferred.

<sup>8</sup> Industry is controlled for with the inclusion of 18 dummy variables, which identify the 19 major industry divisions in the 2006 version of the Australian and New Zealand Standard Industrial Classification system.

<sup>9</sup> The estimated turning points in these quadratic functions occur at levels well beyond that observed for most persons in the sample; 26.5 years for voluntary separations and 21 years for involuntary separations

<sup>10</sup> On average, just over 90% of interview respondents also complete and return the self-administered questionnaire each survey wave.

## Appendix: Definition of Variables

*P of quitting*: Perceived probability that the individual will quit their current job in the following 12 months (takes values ranging between 0 and 100).

*P of job loss*: Perceived probability that the individual will lose their current job in the following 12 months (takes values ranging between 0 and 100).

*P of re-employment*: Perceived probability that the individual will be able to find another job of similar quality in the event that they lose their current employment (takes values ranging between 0 and 100).

*Voluntary*: Dummy variable that takes value 1 if individual voluntarily separated from their employer since the last wave, and zero if otherwise.

*Involuntary*: Dummy variable that takes value 1 if individual was dismissed by their employer since the last wave, and zero if otherwise.

*Unemployment*: Dummy variable that takes value 1 if individual became unemployed since the last wave, and zero if otherwise.

*Inactivity*: Dummy variable that takes value 1 if individual became economically inactive since the last wave, and zero if otherwise.

*Female*: Dummy variable that takes the value 1 if female, and zero if otherwise.

*Migrant (English speaking country)*: Dummy variable that takes the value 1 if born overseas in one of the main English-speaking countries, and zero if otherwise.

*Migrant (non-English speaking country)*: Dummy variable that takes the value 1 if born overseas in a non-English-speaking country, and zero if otherwise.

*Unemployed last year*: Continuous variable which takes values in the range 0 to 1, and measures the proportion of the 12 months preceding interview spent in unemployment.

*Education – Year 10 to 12*: Dummy variable that takes value 1 if highest qualification is completing Year 10 to 12 of high school, and zero if otherwise.

*Education – Certificate / diploma*: Dummy variable that takes value 1 if highest qualification is a certificate or diploma, and zero if otherwise.

*Education – Degree or higher*: Dummy variable that takes value 1 if highest qualification is a university degree, and zero if otherwise.

*Father was a professional*: Dummy variable that takes the value 1 if father belonged to a professional occupation, and zero if otherwise.

*Single*: Dummy variable that takes the value 1 if individual is neither legally married nor in a de facto relationship, and zero if otherwise.

*Age*: Age, in years, on the 30<sup>th</sup> June preceding interview.

*Aged 30 to 39 years*: Dummy variable that takes value 1 if individual aged between 30 and 39, and zero if otherwise.

*Aged 40 to 49 years*: Dummy variable that takes value 1 if individual aged between 40 and 49, and zero if otherwise.

*Aged 50 to 59 years*: Dummy variable that takes value 1 if individual aged between 50 and 59, and zero if otherwise.

*Aged 60 to 64 years*: Dummy variable that takes value 1 if individual aged between 60 and 64, and zero if otherwise.

*Urban*: Dummy variable that takes value 1 if individual lives in an urban area, and zero if otherwise.

*Full-time employee*: Dummy variable that takes value 1 if individual usually works 35 or more hours per week, and zero if otherwise.

*Trade union*: Dummy variable that takes value 1 if individual is a member of a trade union or employee association, and zero if otherwise.

*Job tenure*: Total number of years worked for current employer.

*Fixed-term contract employee*: Dummy variable that takes value 1 if individual reports being employed on a fixed-term contract, and zero if otherwise.

*Casual employee*: Dummy variable that takes value 1 if individual reports being employed on a casual basis, and zero if otherwise.

*Workplace size less than 5*: Dummy variable that takes value 1 if less than 5 people work at individual's workplace, and zero if otherwise.

*Workplace size 5-9*: Dummy variable that takes value 1 if 5 to 9 people work at individual's workplace, and zero if otherwise.

*Workplace size 10-19*: Dummy variable that takes value 1 if 10-19 people work at individual's workplace, and zero if otherwise.

*Workplace size 20-49*: Dummy variable that takes value 1 if 20-49 people work at individual's workplace, and zero if otherwise.

*Long-term sick*: Dummy variable that takes value 1 if individual has a long-term health condition or disability, and zero if otherwise.

*Overskilling*: Response, on a 1 to 7 Likert (disagree / agree) scale, to the item – "I use many of my skills and abilities in my current job", but with scores reversed.

*Skill acquisition*: Response, on a 1 to 7 Likert (disagree / agree) scale, to the item – "My job often requires me to learn new skills".

*Job difficult / complex*: Response, on a 1 to 7 Likert (disagree / agree) scale, to the item –  
“My job is complex and difficult”.