Job Insecurity and Mental Health Outcomes: An Analysis Using Waves 1 And 2 of HILDA

Marc L. Adam and Paul Flatau*

Abstract

The issue of job insecurity and its impact on employee's sense of well-being remains an under-researched topic. The objective of this paper is to utilise the HILDA dataset to show how job insecurity impacts on mental health outcomes. An important feature of the HILDA survey is that it enables an examination of the relationship between the level of job insecurity and mental health outcomes at a given point in time as well as how changes over time in job insecurity impact on mental health outcomes for the employed. The results suggest that a strong and significant relationship exists between job insecurity and employee mental health outcomes.

1. Introduction

The existing literature on the nexus between labour markets and mental health outcomes focuses on the negative effects of unemployment on an unemployed individual's physical and mental health outcomes. Loss of employment can have significant negative financial and social impacts

*Department of Economics, Murdoch University

(e.g., loss of social status and social support networks), which in turn result in a deleterious impact on personal health and well-being. In terms of mental health outcomes, unemployed individuals may experience or exhibit increased depressive symptoms, decreased perceptions of competence, decreased self-esteem, a higher risk of suicide and higher levels of abusive behaviour toward others (Price, Friedland, Choi and Caplan 1998).

Mathurs and Schofield's (1998) informative summary of the Australian medical literature relating to the impact of unemployment on mental health outcomes supports the hypothesis that unemployment causes deterioration in mental health and well-being outcomes among those affected. The extent of that deterioration may be dramatic. Morell, Taylor, Quine and Kerr (1993) and Morrell, Taylor and Kerr (1998), for example, provide evidence that unemployment is a predisposing factor that increases the risk of suicide, especially in males. O'Brian, Feather and Kabanoff (1994) report that unemployed Australian youth experience higher levels of depression, lower life satisfaction and lower levels of perceived competence than youth in employment (see also Morrell, Taylor, Quine, Kerr and Western 1994). Using evidence from both the 1995 National Health Survey and the 1997 Mental Health Survey, Flatau et al. (2000) provide evidence of a significant inverse relationship between unemployment and mental health outcomes across all age cohorts using both general self-assessed measures of well-being and specific mental health diagnoses of depression and nerves, nervousness, tension. In a longitudinal design, Kennedy (2003) examined the effect of labour force status on the mental health of immigrants and found that causality ran from unemployment to mental health rather than the reverse. Interestingly, Winklemann and Winklemann (1998) conclude that the non-pecuniary impact of unemployment has much more severe effects on 'life satisfaction' than the pecuniary effect. There is also evidence to suggest that there is an adjustment to unemployment so that the long-term unemployed are less unhappy than the short-term unemployed (Clarke and Oswald 1994).

The unsurprising general conclusion from these studies, therefore, is that unemployment adversely impacts on mental health outcomes. What remains to be determined, however, is the impact that job insecurity among the employed may have on mental health outcomes. This is the focal point of the present paper. Job insecurity involves fundamental and involuntary changes regarding the safety and continuity of an individual's employment. In other words, job insecurity involves perceived uncertainty concerning the continuation of employment or features of the job (Hellgren, Goslinger, Chirumbolo, De Witte, Naswall and Sverke 2000).

The effect of job insecurity on mental health outcomes in Australia is examined in this paper using the Housing, Income and Labour Dynamics in Australia (HILDA) Survey Waves 1 and 2. This survey includes two measures of job insecurity together with self-reported mental health and wellbeing scales. HILDA's panel design allows for the examination of changes over time in labour market conditions and mental health outcomes. We examine the impact of job insecurity on mental health and well being outcomes using cross section regression models and a differenced regression model which makes full use of the longitudinal feature of HILDA. The cross section models provide an analysis of the relationship between job security and mental health at a given point in time. They also allow the testing of stability of this relationship over time in separate cross-section regressions of Wave 1 and Wave 2.

The structure of the paper is as follows. In section 2 we provide a brief outline of the literature in relation to job insecurity and mental health and well-being impacts. Section 3 then describes the HILDA data and the job insecurity and mental health measures used in the empirical analysis. In section 4 we provide descriptive statistics results of the relationship between job insecurity and mental health and present our regression results, while our conclusions are summarised in section 5.

2. Job Insecurity and Mental Health-Related Outcomes

While there is a large literature on the effect of unemployment on mental health outcomes only a relatively small number of overseas studies have directly examined the relationship between job insecurity and mental health outcomes. Much of this literature has focused on the *fear* of impending job loss. The psychosocial stress induced in workers by the fear of unemployment has a significant negative impact on individual health outcomes (Hellgren et al. 2000). In their studies of individuals anticipating job change as a result of impending mass layoffs, Schnall et al. (1992) and Ferrie et al. (1995) conclude that the anticipation of job loss affects mental and physical health even before actual job loss has taken place although risk varies according to individual and workplace factors. In the situation of loss with prior notice, people's lives are often affected through prolonged insecurity at work and at home with increased stress, tension, anxiety, sadness and resentment (Gago 1996). Moore et al. (2003) also argue that workers experiencing a chronic downsizing environment fare worse than those exposed to a single one time exposure to layoffs. The argument may

be that the process of downsizing has repercussions on all employees beyond simply the individuals who are laid off.

Sverke, Hellgren and Naswall (2002) divide the consequences of job insecurity into four main categories: Job attitudes; organisational attitudes; health; and work related behaviour. Significant and negative correlations were found between job insecurity and each of the above four categories in their study, with the strongest reported relationship being found in respect to job and organisational attitudes. Increased psychological distress from a decline in job security is reported in a large number of studies (Burchell 1994; Bussing 1999; De Witte 1999; Hellgren, Sverke and Isaksson 1999; Lim 1996; Dekker and Schaufeli 1995; Mohr 2000; Probst 2000). Greater feelings of mental, emotional and physical exhaustion are also reported as a consequence of increased job insecurity (Dekker and Schaufeli 1995; Kinnunen et al. 1999). An increase in poorer physical health outcomes as a consequence of higher self-assessed levels of job insecurity is also reported in the international literature (Burchell 1994; Heaney, Israel and House 1994; Dooley, Rook and Catalano 1987; Kuhnert, Sims and Lahey, 1989; Roskies and Louis-Guerin 1990).

While much of the evidence is confined to cross-sectional studies a small number of longitudinal studies have also shown a causal relationship between job insecurity and mental and physical health related effects (Burchell 1994; Dekker and Schaufeli 1995; Hellgren and Sverke 2003). In addition to the mental and physical health effects of job insecurity, perceptions of job insecurity among employees also lead to higher levels of job dissatisfaction (Ashford, Lee and Bobko 1989; Davy, Kinicki and Sheck 1991); a reduction in organisational trust (Ashford, Lee and Bobko 1989); an increase in non-cooperative behaviour at work (Lim 1996); and, lower safety motivation and compliance (Probst and Brubaker 2001).

There is a growing interest in job insecurity in Australia. However, much of this literature has focussed on the issue of changes in the level of job insecurity over time (e.g., Wooden 1999; Kelley, Evans and Dawkins 1998; Borland 2002) rather than the impact of job insecurity itself on mental and physical health outcomes and worker organisational effects. In this latter area, relatively little work has been done. One exception is Kelly, Evans and Dawkins (1998) who argue that job security is linked to declining job satisfaction. In a forerunner of the present paper, Dockery (2003) uses HILDA's 'per cent likelihood of losing job in the next 12 months' variable as a measure of job insecurity. Interestingly, the study found that the effect of feeling moderately insecure was, in fact, markedly more detrimental to a sense of wellbeing than the effect of being highly job insecure. The conclusion reached by Dockery (2003) was that due to

the cross-section nature of the data used (HILDA Wave 1 only), and the unexpected nature of the findings, the issue of job security and wellbeing required further analysis. A key aim of this paper is to re-examine this issue using the first two waves of HILDA and alternative measures of mental health and job security.

3. Data and Method

3.1 The Household, Income and Labour Dynamics in Australia (HILDA) Survey

This study makes use of Waves 1 and 2 of the Household, Income and Labour Dynamics in Australia (HILDA) survey to examine the relationship between job insecurity and mental health and well-being. Wave 1 of the HILDA survey was conducted for a sample of 11,693 Australian households identified as 'in-scope', with interviews being completed across all eligible members for 6,872 households (66 per cent response rate). In total, 7,682 households were interviewed with 15,123 eligible persons, of which 13,965 completed the Person Questionnaire (PQ) and 13,158 completed the Self-Completion Questionnaire (SCQ). The HILDA Annual Report (2003) demonstrates that the HILDA sample bears close resemblance to the wider population of Australia (exceptions include the under-representation of Sydney in the sample). [1]

All individuals from the 7,682 responding households in Wave 1 were followed into Wave 2. Of the 7,682 reporting households from Wave 1, 69 moved out of scope (due to death or moves overseas) and an additional 713 households were added to the sample as a result of changes in household composition. Overall, there were a total of 8,326 households in the Wave 2 sample, of which 7,245 responded (87 per cent). Table 1 describes the Wave 2 person outcomes by Wave 1 person outcomes. There were 11,993 respondents to both Wave 1 and Wave 2 surveys.

Attrition bias is an important aspect of longitudinal surveys. There was 13.2 per cent attrition between Wave 1 and Wave 2 in HILDA. Attrition was found highest in the following groups (HILDA 2003):

- Living in Sydney, Melbourne, rural Western Australia or Tasmania;
- Aged 15 to 34 years;
- Single or living in a de facto marriage;
- Born in a non-English-speaking country;
- Low levels of education;
- Living in an apartment, flat or unit; or
- Unemployed in Wave 1.

Table 1. Wave 1 and 2 Respondent Outcomes, HILDA

	Wave 2				
Wave 1	Respondent	Non-respondent	Lost in tracking	Out of scope	Child
Respondent	11,993	1591	233	152	-
Non-respondent	222	812	92	32	-
Child	250	58	133	9	4337
New entrant	576	205	-	-	346
Total	13,041	2666	458	193	4683

Source: HILDA (2003).

3.2 Measuring Mental Health and Well-being: The SF–36 and MCS

Our measure of mental health outcomes is based on the SF–36 which is a widely used self-completion measure of general health status and has proven test-retest reliability and sound psychometric qualities (Ware and Gandek 1998; Ware, Snow and Kosinski 1993). It is a generic measure, as opposed to one that targets a specific age, disease, or treatment group. The SF–36 measures eight domains of health: mental health, general health perceptions, physical functioning, role limitations due to physical health, bodily pain, vitality, social functioning, and role limitations due to emotional problems. Our measure of self-assessed mental health outcomes is based on Mental Component Summary scale (MCS). Factor analysis of correlations among the eight SF–36 scores have consistently identified two factors interpreted as 'physical' and 'mental' dimensions of health status (Ware, Kosinski and Keller 1994). The mental health dimension is referred to as the Mental Component Summary scale (MCS). The MCS is a psychometrically-based combination of all eight summary scales, but most heavily weighted on the mental health, role-emotional, and social functioning scales. The MCS scale is standardised to have a mean of 50 and standard deviation of 10. Sanderson and Andrews (2002) define 'moderate poor mental health' as a MCS of less than 40 while severe poor mental health is taken as a score less than 30.[2]

The MCS was derived in the following way. First, each SF-36 scale is standardised using a z-score transformation using SF-36 scale means and standard deviations from the general Australian population (see Table 2) (ABS, 1997).[3] Next, unadjusted mental component scores were calculated by using the factor score coefficients from the general Australian population

as weights (ABS 1997). Finally, the unadjusted mental component scores were transformed to a normal (50, 10) scoring.

Table 2. General Australian Mental Health Weights

	ABS National Health Survey 1995		
SF-36 Scales	Factor Scales	Mean Score	SD
Mental health	0.49	82.6	23.9
Role-emotional	0.36	79.9	35.1
Vitality	0.27	76.8	25.0
Social functioning	0.27	71.6	20.3
General health	0.05	64.5	19.8
Bodily pain	-0.12	85.0	22.5
Role-physical	-0.13	82.9	32.3
Physical functioning	-0.24	75.9	17.0

Source: ABS(1997)

We have chosen as our job security measure from the HILDA survey the item 'I have a secure future in my job'. An alternative measure is used for comparison 'Per cent chance of losing job in the next 12 months'. The first job security variable uses a scale of 1 to 7 where a '1' indicates strongly disagree with the statement .

We have chosen as our job security measure from the HILDA survey the item 'I have a secure future in my job'. An alternative measure is used for comparison 'Per cent chance of losing job in the next 12 months'. The first job security variable uses a scale of 1 to 7 where a '1' indicates strongly disagree with the statement 'I have a secure future in my job' and a '7' indicates strongly agree with the statement. Hence, a '1' indicates a high self-assessed level of job insecurity while a '7' indicates a high self-assessed level of job security. The alternative job security variable is measured from 1 to 100 reflecting the self-assessed per cent chance of losing one's job. The (alternative) variable may be problematic in that it requires a respondent to think in percentage terms without any absolute yardstick as

in the base variable case and refers to a specific time period (one year). Some employees may have contracts organised of over one year, but the sense of insecurity can still be high due to workplace or occupation-specific and other market factors. Furthermore, an analysis of the distribution of responses to the per cent change of losing one's job indicates that responses are lumpy around a small number of points namely, 0 (very large number of observations), 1, 5, 10, 20, 50 and 100 per cent chance of losing one's job. The uneven nature of the distribution of responses makes use of the variable difficult. A possible advantage of the alternative measure, however, may be that it captures an immediate sense of insecurity among workers facing job loss.

4.   Results

Table 3 presents estimates of the prevalence of 'moderate' and 'severe' poor mental health (using the Sanderson and Andrews, 2002 typology noted above) among HILDA respondents in Waves 1 and 2 for selected demographics and socio-economic groups. Mental health is assessed on the basis of the MCS scale. Poorer mental health outcomes are more prevalent among younger rather than older age cohorts. Of particular interest are the mental health scores across labour force states. Across both waves of HILDA, poorer mental health outcomes are more common for people not in work as compared to those in employment. Over 30 per cent of unemployed persons are located in the severe and moderate poor mental health categories compared with around 20 per cent of full-time employed persons. Poor mental health outcomes are also prevalent among those in the not in the labour force group. Noticeably, mental health outcomes are poorer for the marginally attached NILF group rather than the non-NILF group.[4] The results indicate no significant difference in the mental health of persons employed full-time as compared with those employed part-time.

Table 3. The Incidence of Moderate (MCS<30) to Severe (MCS <40) Mental Health Outcomes Amongst Selected Groups, Waves 1 and 2, HILDA per cent.

|	Wave 1		Wave 2	
	MCS<30	MCS<40	MCS<30	MCS<40
Gender				
Male	11.7	21.9	15.8	25.2
Female	11.5	23.8	14.5	25.8
Age				
20-24	12.4	25.6	17.4	27.9
25-34	16.4	27.2	21.4	33.4
35-44	13.6	25.2	19.2	29.6
45-54	13.0	25.2	14.3	25.2
55-64	9.9	20.5	14.6	25.1
65+	8.7	19.3	11.3	21.3
Job Status				
Employed full-time	11.0	20.5	15.3	23.8
Employed part-time	10.1	20.7	13.2	22.6
Unemployed, looking for full-time work	14.6	29.1	25.6	36.8
Unemployed, looking for part-time work	20.0	39.5	21.6	35.2
Not in the labour force, marginally attached	13.8	29.1	19.5	34.9
Not in the labour force, not marginally attached	12.3	25.1	13.6	26.1

Source: HILDA Survey: Waves 1 and 2

We now turn to our main point of interest an exploration of the relationship between job security and mental health outcomes. The relationship between job security and mental health outcomes is depicted in Figure 1. The estimates reveal a marked association between job security and mental health outcomes: those with higher job security (a reading closer to 7) report better mental health outcomes and those with poorer job security (a reading closer to 1) report worse mental health outcomes.

We are also interested in whether a positive relationship between job security and mental health outcomes is evident when we consider changes in job security and changes in mental health outcomes between waves 1 and 2 of HILDA. Figure 2 maps out mean changes to the MCS scale against changes in self-assessed job security levels. Again the association between changes in job security and mental health outcomes is marked with those who reported a significant improvement in job security also experiencing higher mental health outcomes. However, the change analysis reveals an asymmetry in the relationship. Those who moved towards more positive

job security outcomes appeared to have stronger mental health changes (in absolute terms) than those who moved in the opposite direction in terms of job security. In other words, those who felt more job-insecure between waves 1 and 2 of HILDA suffered a smaller change in mental health outcomes than those who experienced a positive change in their self-assessed level of job security.
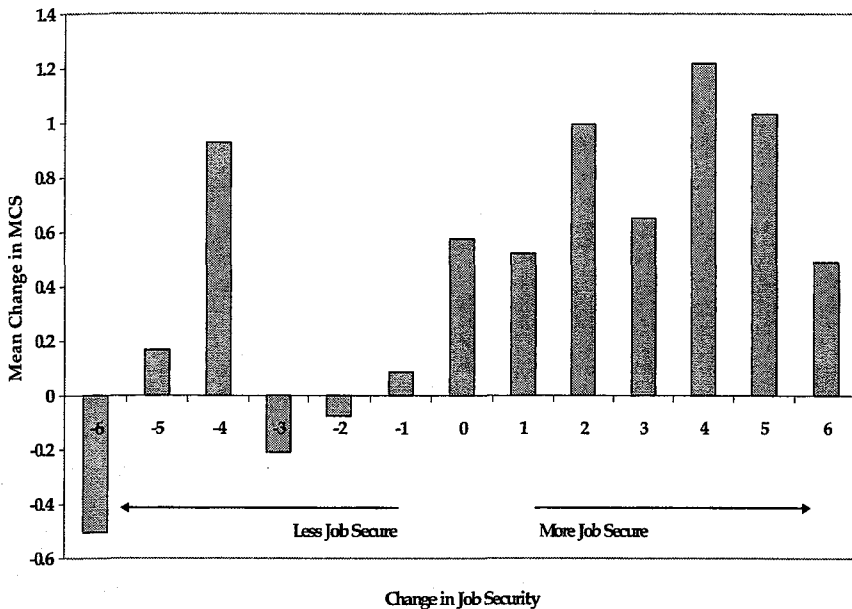
Figure 1. Mean Mental Health Outcomes, Job Security (Base Measure), HILDA Waves 1 and 2
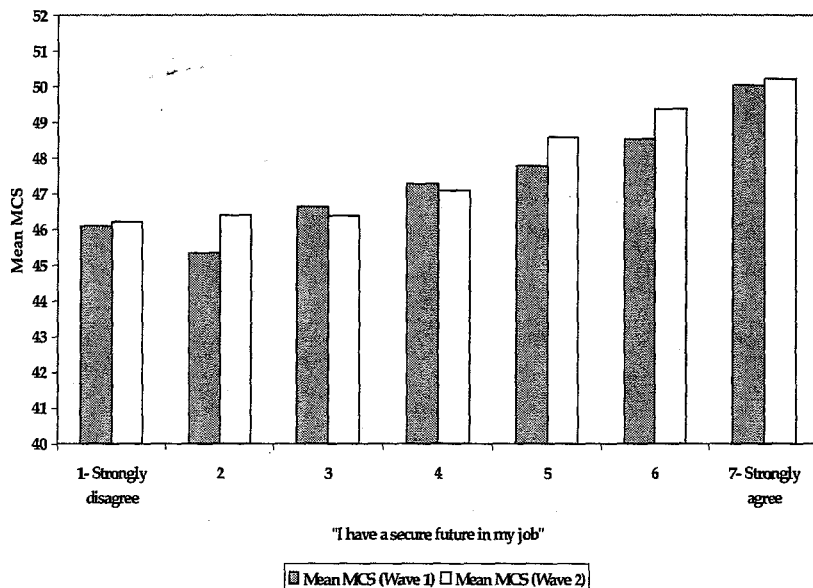
Source: HILDA Waves 1 and 2

As a point of comparison we undertook the same analysis using the alternative job security variable based on the 'per cent chance of lowing job in the next 12 months' question (see Figures 3 and 4). For the alternative measure of job security the relationship between job insecurity and mental health outcomes is less apparent. In line with base measure of job security, mean MCS scores are highest for low to moderate levels of job insecurity (less than 20 per cent chance of losing one's job) but beyond these low levels of job insecurity, no clear relationship is apparent in respect to the impact of job security on mental health outcomes. The relationship between job security and mental health outcomes becomes even less secure when

Figure 2. Change in Mean Mental Health Outcomes between Waves 1 & 2 of HILDA by Change in Job Security (Alternative Measure)
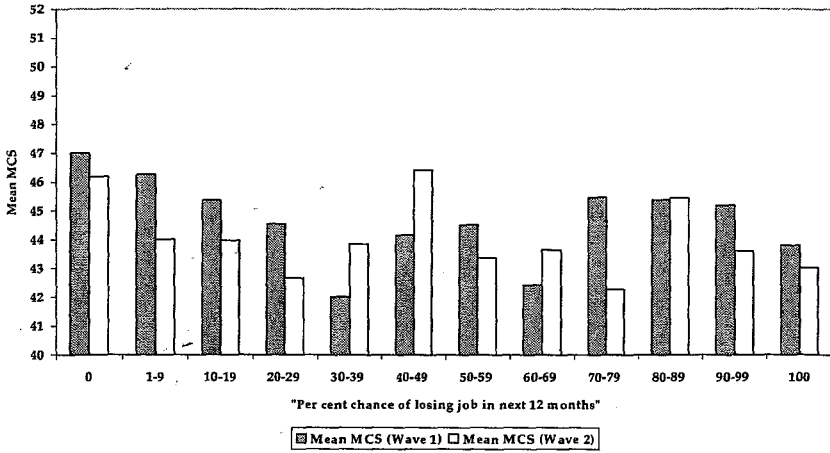

Source: HILDA Wave 1 and Wave 2

considering the impact of a change in job security on mental health outcomes (see Figure 4).[5]

The descriptive statistics results indicate a close relationship between job security and mental health outcomes. Is this effect maintained after controlling for confounding influences? The hypothesis we wish to test is that a positive relationship between mental health outcomes and job security remains even after controlling for confounding influences. Our first set of results is based on cross-section OLS models of the relationship between mental health and job insecurity outcomes. The analysis is restricted to those employed (i.e., those that have measured job security outcomes) with non-missing MCS scores. The results are presented for the (base) job security variable as the dependent variable.

Figure 3. Mean Mental Health Outcomes by Job Security (Alternative Measure), HILDA, Wave 1 and Wave 2

Source: HILDA Wave 1 and Wave 2

Figure 4. Change in Mean Mental Health Outcomes between Waves 1 & 2 of HILDA by Change in Job Security (ALternative Measure)
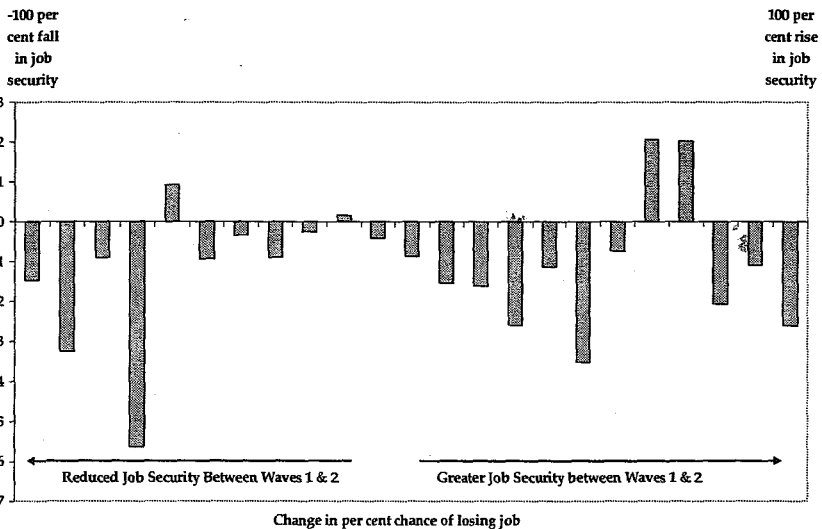
Source: HILDA Wave 1 and Wave 2

The variables used in the statistical analysis of the HILDA dataset are defined below in Table 4. A standard set of socio-demographic variables is included in the analysis, namely, gender, age, married, family formation, children, education, income, long-term health condition, state of residence, region and country of birth. In addition to the job security variable we also included a set of employment-related effects to determine whether work conditions may have an impact on mental health outcomes (controlling for confounding factors) in addition to job security. The employment-related variables are employed part-time, occupation and under- and over-employment. The latter variables measure the extent to which employees are working below or above their desired hours of work. We would anticipate that where employees are not working their desired

The variables used in the statistical analysis of the HILDA dataset are defined below in Table 4. A standard set of socio-demographic variables is included in the analysis, namely, gender, age, married, family formation, children, education, income, long-term health condition, state of residence, region and country of birth. In addition to the job security variable we also included a set of employment-related effects to determine whether work conditions may have an impact on mental health outcomes (controlling for confounding factors) in addition to job security. The employment-related variables are employed part-time, occupation and under- and over-employment. The latter variables measure the extent to which employees are working below or above their desired hours of work. We would anticipate that where employees are not working their desired hours of work mental health outcomes may be lower than what would otherwise be the case.

The cross-section OLS results for Waves 1 and 2 are presented in Table 5. The overall fit of the model is poor (R squared around 0.09 for both waves). In terms of individual variables, however, there are a number of significant effects evident. Older employed persons (those aged 65 and over) exhibit stronger mental health outcomes than younger employed persons. Female employees exhibit significantly lower mental health outcomes than their male counterparts. There are positive mental health impacts from marriage but negative impacts from those who have young children (perhaps reflecting stresses from work-family imbalances). Income has a positive impact on mental health outcomes while long-term health conditions have a negative impact. State of residence and regional effects are minimal.

The key point of interest is in examining the effect of job security on mental health outcomes. Our findings support the hypothesis that job security is positively linked to mental health outcomes. In both the Wave

1 and Wave 2 regressions, the job security coefficient is significant and the sign is positive. A one point increase in the job security measure (e.g., from 1 to 2) is associated with around a 0.67 increase in the MCS measure in Wave 1 and a 0.75 increase in Wave 2.[6] There is a 6 point difference between being very job insecure (a value of 1) and being very job secure (a value of 7). This difference translates to a 4.0 to 4.5 point difference in the MCS score, which is a very large difference relative to other effects evident from the regression.

Job insecurity is not the only employment-related effect evident from the OLS results. The existence of overemployment leads to significant negative mental health outcomes. This impact is reflective of high work stresses on mental health outcomes. The same is not true of underemployment where the effect on mental health outcomes is negative but insignificant. Overemployment exists when employees wish to work fewer hours while underemployment exists when employees wish to work longer hours. Inter-occupational differences in MCS scores are negligible.

Our final set of results is based on an OLS model of differences in mental health outcomes between Waves 1 and 2 modelled against differences in job security and *self-assessed* major changes in outcomes between Waves 1 and 2 (see Table 6). A fixed panel model of differences in MCSs was also estimated (see Table 7). The sample for the analysis is those who had been employed at the time of the interviews in the two waves and who had non-missing job security and mental health outcomes in both waves. The major changes included in the OLS analysis are married or reconciled with a partner since Wave 1; pregnancy, additions to the family, injury, death of a family member or friend since Wave 1, victim of violence or property crime since wave 1, being fired from previous job since Wave 1 (but subsequently finding work), changed jobs since Wave 1, promoted since Wave 1 and financial improvement or financial worsening since Wave 1.

Our results indicate that an improvement in job security outcomes results in an improvement in mental health outcomes. The impact was only significant at the 10 per cent level in the OLS model but was very strong in the fixed panel model. There were, surprisingly, only a few other major significant effects. A self-assessed worsening in financial outcomes resulted in a significant decline in mental health outcomes while an improvement did not have a corresponding positive effect. Changing jobs resulted in improved mental health outcomes.

Table 4. Regression Variables

Dependent Variable	.
SF-36 Mental Component Summary (MCS)	The MCS is a summary measure of mental health derived from the SF-36 using principal components analysis (see Ware, 1994). The MCS is a psychometrically based combination of all eight SF-36 summary scales but most heavily weighted on the mental health, role-emotional, and social functioning scales. The MCS is a continuous measure standardised to represent the general Australian population with a mean of 50 and standard deviation 10. The MCS score is turned into a differenced variable by taking Wave 1 outcomes from Wave 2 outcomes.
Explanatory Variables	
Job Security	This is a continuous variable created using information from the response "I have a secure future in my job". It records a subjective view of job security ranging from one to seven.
Gender	The dummy variable male equals 1 for a female respondent and 0 otherwise.
Age	Age dummies 15-19, 20-24, 25-34, 35-44, 45-54, 55-64, 65+ (default).
Married	This is a dummy variable which equals 1 for 'yes' to married.
Family formation	Couple without children, couple with children, sole parent, other related family unit, group and other family and single person (default).
Children	This is a set of two dummy variables to control for people who have a child aged 0 to 14. The first dummy variable is for people with children aged four or below. The second dummy variable is for children aged 5 to 14.
Education	Postgraduate degree, graduate diploma, bachelor degree, advanced diploma, diploma, certificate III or IV, certificate I, II or undefined, year 12 and lower than year 12 (default).
Income	This was taken as the imputed total financial year income, measured in dollars. This includes income from wages and all other sources.
Long-Term Health Condition	This is a binary variable used to control for long-term health conditions. The variable equals 1 for 'yes' to 'has a long-term health condition or disability' and 0 for 'no' to this question.
State	State of residence: New South Wales (NSW) (default), Victoria (VIC), Queensland (QLD), South Australia (SA), Western Australia (WA), Tasmania (TAS), Northern Territory (NT), Australian Capital Territory (ACT).
Region	City (default), inner regional, outer regional, remote and very remote.
Country of birth	Australian born (default), English-speaking countries of birth and non-English speaking countries of birth.
Employed part-time	Dummy variable indicating whether the employee was employed for less than 35 hours.
Occupation	A set of six dummy variables for ASCO 1-digit occupational classifications. The categories are professional, associate professional, tradesperson and related workers (default), advanced clerical and service workers, intermediate production and transport workers, elementary clerical, sales and service workers and 'other'.
Overemployed	A set of four dummy variables indicating whether employees would like to work less hours than they currently work. The categories are 1 to 9 hours, 10 to 19 hours, 20 to 29 hours, 30 plus hours.
Underemployed	A set of four dummy variables measuring different levels of time-related underemployment representing the number of additional hours a person would like to work per week. The categories are 1 to 9 hours, 10 to 19 hours, 20 to 29 hours, 30 plus hours.
Major events between Waves 1 & 2	The experience of a major event between waves 1 and 2. The variable records a 1 for 'Yes' to the event/transition and 0 for 'No' to the event/transition.

Table 5. OLS Models, Mental Health Component Score, Waves 1 and 2, HILDA, Employed Persons

	Wave 1				Wave 2			
	Coeff.	Std. Err.	t-ratio	Sig.	Coeff.	Std. Err.	t-ratio	Sig.
Constant	48.735	0.967	50.38	0.000	49.121	0.996	49.31	0.000
Job security								
I have a secure future in my job (1-7)	0.672	0.055	12.30	0.000	0.748	0.058	12.91	0.000
Female	-1.182	0.236	-5.01	0.000	-1.228	0.243	-5.05	0.000
Age								
Aged 15-19	-4.038	0.950	-4.25	0.000	-4.591	0.974	-4.71	0.000
Aged 20-24	-4.283	0.905	-4.73	0.000	-5.022	0.935	-5.37	0.000
Aged 25-34	-4.552	0.841	-5.41	0.000	-4.869	0.871	-5.59	0.000
Aged 35-44	-4.275	0.840	-5.09	0.000	-4.041	0.868	-4.66	0.000
Aged 45-54	-2.923	0.836	-3.50	0.000	-3.412	0.864	-3.95	0.000
Aged 55-64	-1.140	0.856	-1.33	0.183	-1.446	0.883	-1.64	0.102
Married	1.186	0.294	4.04	0.000	1.093	0.305	3.59	0.000
Family formation								
Couple without children	1.206	0.399	3.02	0.003	0.424	0.401	1.06	0.290
Couple with children	0.777	0.398	1.95	0.051	-0.140	0.397	-0.35	0.725
Sole parent	0.201	0.457	0.44	0.659	-0.626	0.462	-1.36	0.175
Other related family unit	0.029	0.995	0.03	0.977	0.056	0.992	0.06	0.955
Group and other family	0.672	0.601	1.12	0.264	-0.790	0.738	-1.07	0.285
Children								
Number of children aged 0-4	-3.515	1.205	-2.92	0.004	-3.863	1.170	-3.30	0.001
Number of children aged 5-14	0.538	0.576	0.93	0.350	-1.279	0.618	-2.07	0.039
Education								
Postgraduate degree	-0.851	0.593	-1.44	0.151	-0.236	0.611	-0.39	0.700
Graduate diploma	-0.027	0.480	-0.06	0.956	-0.097	0.502	-0.19	0.846
Bachelor degree	-0.813	0.368	-2.21	0.027	0.091	0.389	0.23	0.815
Advanced diploma, diploma	-0.193	0.390	-0.49	0.621	-0.071	0.404	-0.18	0.861
Certificate III or IV	-0.743	0.309	-2.40	0.016	0.019	0.324	0.06	0.954
Certificate I, II or undefined	-0.392	0.382	-1.03	0.305	0.013	0.394	0.03	0.974
Year 12	-0.484	0.353	-1.37	0.170	0.489	0.361	1.35	0.176
Financial year income	5.209E-06	3.284E-06	1.59	0.113	8.382E-06	3.297E-06	2.54	0.011
Long-term health condition	-2.200	0.279	-7.88	0.000	-1.520	0.316	-4.82	0.000
State of residence								
VIC	0.175	0.256	0.68	0.496	0.254	0.271	0.94	0.349
QLD	-0.135	0.287	-0.47	0.638	-0.167	0.294	-0.57	0.570
SA	0.469	0.370	1.27	0.205	0.436	0.381	1.14	0.253
WA	-0.010	0.355	-0.03	0.977	1.329	0.362	3.67	0.000
TAS	1.503	0.609	2.47	0.014	1.388	0.626	2.22	0.027
NT	-0.378	1.251	-0.30	0.762	-0.377	1.200	-0.31	0.753
ACT	0.559	0.663	0.84	0.399	0.811	0.672	1.21	0.228
Region								
Inner regional	0.242	0.239	1.01	0.313	0.591	0.254	2.33	0.020
Outer regional	0.454	0.345	1.31	0.189	-0.048	0.345	-0.14	0.890
Remote	0.286	0.734	0.39	0.697	-0.344	0.766	-0.45	0.653
Very remote					0.929	1.439	0.65	0.518

Country of birth

English-speaking countries of birth	0.345	0.318	1.08	0.279	-0.103	0.328	-0.31	0.754
Non-English speaking countries of birth	0.013	0.319	0.04	0.967	0.028	0.333	0.08	0.933
Employed part-time	- 0.115	0.265	-0.43	0.665	-0.223	0.254	-0.88	0.379
Occupation								
Manager or administrator	-0.157	0.429	-0.37	0.715	-0.066	0.489	-0.14	0.892
Professional	-0.790	0.390	-2.03	0.043	-0.721	0.429	-1.68	0.093
Associate professional	-0.464	0.403	-1.15	0.249	-0.549	0.427	-1.28	0.199
Advanced clerical, sales or service	0.195	0.596	0.33	0.744	0.766	0.639	1.20	0.230
Intermediate clerical, sales or service	-0.297	0.377	-0.79	0.430	-0.311	0.419	-0.74	0.458
Intermediate production and transport	-0.059	0.434	-0.14	0.891	-0.017	0.464	-0.04	0.970
Elementary clerical, sales or service	-0.474	0.495	-0.96	0.339	-0.549	0.491	-1.12	0.264
Labourer or related worker	-0.733	0.520	-1.41	0.158	0.510	0.486	1.05	0.295
Under- and Overemployment								
Underemployed 1-9 hours	-0.548	0.407	-1.35	0.178	-0.629	0.424	-1.48	0.139
Underemployed 10-19 hours	-1.042	0.424	-2.46	0.014	-0.007	0.454	-0.01	0.988
Underemployed 20-29 hours	-0.864	0.783	-1.10	0.270	-1.295	0.769	-1.68	0.092
Underemployed 30 hours	-1.984	1.398	-1.42	0.156	-1.790	1.466	-1.22	0.222
Overemployed 1-9 hours	-0.758	0.337	-2.25	0.025	-1.661	0.358	-4.64	0.000
Overemployed 10-19 hours	-1.629	0.303	-5.37	0.000	-1.989	0.314	-6.32	0.000
Overemployed 20-29 hours	-2.022	0.460	-4.39	0.000	-2.446	0.479	-5.11	0.000
Overemployed 30 hours or more	-1.555	0.674	-2.31	0.021	-2.340	0.532	-4.40	0.000

Dependent Variable: SF-36 Mental Health Component Score

	Wave	R Squared	0.0863		Wave 2	R Squared	0.0986
		R Sq adj.	0.0798			R Sq adj.	0.0856
		N=7303				N=6294	

Table 6. OLS, Change in Mental Component Summary Score Between Waves 1 and 2, HILDA, Employed in Both Waves

	Coeff.	Std. Err.	t-ratio	Sig.
Constant	0.375	0.152	2.47	0.013
Change in job security (1-7)	0.110	0.063	1.74	0.082
Married since Wave 1	0.591	0.689	0.86	0.391
Reconciled since Wave 1	-0.821	0.551	-1.49	0.136
Pregnancy since Wave 1	-0.781	0.576	-1.36	0.175
Addition to the family	-0.226	0.729	-0.31	0.756
Injury - self since Wave 1	0.366	0.474	0.77	0.440
Injury - family since Wave 1	0.315	0.299	1.05	0.292
Death-family or friend since Wave 1	-0.299	0.288	-1.04	0.300
Victim of violence since Wave 1	-0.171	0.937	-0.18	0.855
Victim of property crime	0.130	0.455	0.28	0.776
Was fired from previous job since Wave 1	0.764	0.691	1.11	0.269
Changed jobs since Wave 1	1.093	0.326	3.35	0.001
Promoted since Wave 1	-0.043	0.384	-0.11	0.912
Financial improvement since Wave 1	0.145	0.589	0.25	0.806
Financial worsening since Wave 1	-3.269	0.737	-4.43	0.000

Dependent Variable: Change in SF-36 Mental Health Component Score Between Waves 1 & 2

R Squared   0.009

R Sq. adj.   0.006

N= 5473

Table 7. Fixed Panel Regression Model, Change in MCS Summary Score, Waves 1 and 2, HILDA, Employed in Both Waves

	Coeff.	*Std. Err.*	*t-ratio*	*Sig.*
Constant	1.242	0.929	1.340	0.181
Change in job security	**1.471**	**0.041**	**35.32**	**0.000**
Female	-0.038	0.255	-0.150	0.882
Age				
Aged 15-19	-0.753	1.607	-0.47	0.639
Aged 20-24	-1.383	1.494	-0.93	0.354
Aged 25-34	-1.941	1.373	-1.41	0.157
Aged 35-44	-0.787	1.372	-0.57	0.566
Aged 45-54	-1.396	1.369	-1.02	0.308
Aged 55-64	-1.022	1.403	-0.73	0.466
Married	-0.104	0.443	0.240	0.814
Family Information				
Couple without children	0.506	0.269	1.880	0.059
Couple with children	0.346	0.733	0.470	0.637
Sole parent	0.946	1.734	0.550	0.585
Other related family unit	0.080	1.270	0.060	0.950
Children				
Number of Children Aged 0-4	-3.302	1.831	-1.800	0.071
Number of Children Aged 5-14	-0.512	1.059	-0.480	0.629
Education				
Postgraduate Degree	1.012	1.125	0.900	0.368
Graduate Diploma	-0.429	0.871	-0.490	0.622
Bachelor Degree	0.585	0.684	0.860	0.392
Advanced Diploma, Diploma	-0.777	0.708	-1.100	0.272
Certificate III or IV	-1.103	0.562	-1.960	0.050
Certificate I II or Undefined	-0.001	0.703	0.000	0.999
Year 12	0.588	0.644	0.910	0.361
Financial Year Income	0.000	0.000	-0.550	0.580
Long-term health condition	0.697	0.547	1.270	0.203
State of residence				
VIC	-0.0883	0.481	-0.18	0.854
QLD	-0.448	0.532	-0.84	0.400
SA	-0.191	0.675	-0.28	0.777
WA	1.893	0.639	2.96	0.003
TAS	0.602	1.06	0.57	0.570
NT	3.72	2.15	1.73	0.083
ACT	0.907	1.156	0.78	0.433

Region

Inner regional	0.823	0.453	1.82	0.069
Outer regional	-0.073	0.627	-0.12	0.908
Remote	-0.359	1.281	-0.28	0.779
Very remote	-2.366	3.376	-0.7	0.483
Employment part-time	0.259	0.466	0.560	0.578

Occupation

Manager or administrator	-0.234	0.744	-0.32	0.753
Professional	-1.114	0.568	-1.96	0.050
Associate professional	-0.6	0.586	-1.02	0.307
Advanced clerical, sales or service	-0.648	0.601	-1.08	0.281
Intermediate clerical, sales or service	0.113	0.416	0.27	0.786
Elementary clerical, sales or service	-0.294	0.408	-0.72	0.472
Labourer or related worker	0.072	0.743	0.1	0.923

Under- and Overemployment

Underemployed 1-9 hours	-0.128	0.828	-0.16	0.877
Underemployed 10-19 hours	0.258	0.882	0.29	0.770
Underemployed 20-29 hours	2.088	1.526	1.37	0.171
Underemployed 30 hours	-5.423	2.716	-2	0.046
Overemployed 1-9 hours	-0.699	0.641	-1.09	0.276
Overemployed 10-19 hours	-0.297	0.564	-0.53	0.598
Overemployed 20-29 hours	-0.543	0.897	-0.61	0.545
Overemployed 30 hours or more	-0.603	0.924	-0.65	0.514

5.   Policy Implications and Conclusions

Over the last two decades, changes to the Australian labour market have seen a decline in job security. The decline in job security has prompted researchers to argue that it coincides with falling job satisfaction and possibly also the wellbeing of workers (Kelly, Evans and Dawkins 1998; Dockery 2003). Most recent has been the contentious implementation of the Government's 'WorkChoices – A New Workplace Relations System' where businesses that employ up to and including 100 employees are exempt from unfair dismissal laws. In addition, for businesses with more than 100 employees, an employee must work six months before they are able to claim unfair dismissal. These latest changes are expected to add to the already difficult problems workers face in an increasingly insecure workplace environment. This study has set about establishing the empirical link between these changes to individual's security in the workforce and their self-assessed mental health.

Establishing a link between job insecurity and mental health has generated a number of overseas studies, but it remains a relatively new area of study in the Australian context. The overall conclusion from our analysis is that job security plays an important role in the determination of mental health outcomes of Australians. The analysis used a number of quantitative techniques to support this robust finding. The findings imply that there is a growing need to address mental health issues in the workplace, especially in light of the implementation of new Industrial Workplace Reforms.

Good mental health is not just the absence of poor mental health. This notion is important to our analysis, since good mental health results in a vitality for active living and, consequently, work and social contact. In respect to the work situation, absences of good mental health can lead to lower productivity levels. It may also affect desirable work skills of communication and leadership. A number of studies showed the effect of high levels of job insecurity on behavioural work outcomes, such as non-cooperation (Lim 1996), lower trust (Ashford, Lee and Bobko 1989) and concern for safety (Probst and Brubaker 2001). From the results, it would therefore be expected that these outcomes are also synonymous with poorer mental health conditions.

The adverse consequences of reductions in mental health stem also beyond the organisation. There are consequences to family and social networks, accumulated strain for the individual and, perhaps, in an economic sense a decline in value of human capital which may affect future employment outcomes.

Much remains to be learned about the causes, treatment and prevention of mental health problems (United States Department of Health and Human Services 1999). Significant research has focused on the adverse health consequences of unemployment and job loss. Active policies designed to improve job matching and labour quality mitigate against such health concerns. The results of this suggest that just as deleterious to mental health as unemployment, is an insecure work environment. The lesson for employers and policy analysts is that they need consider the mental health of employees as seriously as their physical safety.

Notes
[1] See for example the Australian Bureau of Statistics (ABS) estimates from the Monthly Population Survey for October 2001, or August 2001 in the case of Indigenous status and employment status (as cited in HILDA, 2003). The HILDA and ABS estimates are for people aged 15

years or above.

[2] We also undertook an analysis of mental health outcomes using only the mental health dimension score but the results from this analysis are not radically different from the MCS results and are not reported here.

[3] The SF – 36 mean, standard deviation and factor weightings for the Australian general population have been taken from and assumed equivalent to the ABS 1995 National Health Survey: SF – 36 Population Norms Australia.

[4] The HILDA definition of marginal attachment (based on ABS definitions) is persons not in the labour force who want to work and be actively looking for work but not available to start work in the reference week; or want to work though not actively looking for work, but would be available to start work within four weeks.

[5] We also examined the impact of a final measure of job insecurity, namely, actual job loss. The job loss variable was constructed on the basis of those people who lost their job between Waves 1 and 2 or were not currently working at the time of the Wave 2 interview. Our results were contrary to expectations. Both those who had not suffered a job loss and those who did suffer a job loss suffered a very small decline in their mental health scores. However, those who were not impacted on by adverse labour market outcomes appeared to suffer a marginally greater loss in mental health than those who were.

[6] The alternative measure of job security (per cent chance of losing one's job) also provides similar results without the same level of robustness (results not presented here).

References

Ashford, S. Lee, C. and Bobko, P. (1989) 'Content, Causes, and Consequences of Job Insecurity: A Theory-Based Measure and Substantive Test', *Academy of Management Journal*, 32: 803-829.

Astbury, J. (1999) *Gender and Mental Health*, Key Centre for Women's Health, University of Melbourne, Global Health Equity Initiative Project, Australia.

Australian Bureau of Statistics (ABS) (2001) 'Labour Statistics, Concepts, Sources and Methods', Cat. No. 6102.0, *AGPS*, Canberra.

Australian Bureau of Statistics (ABS) (1997) 'SF-36 Population Norms Australia', *1995 National Health Survey,* ABS Catalogue No. 4399.0, ABS, Canberra, October.

Borland, J. (2002) 'Perceptions of Job Security in Australia, Melbourne Institute of Applied Economic and Social Research' *Melbourne Institute of Applied Economic and Social Research*, Working Paper 16/02, The University of Melbourne.

Brown, S. Bulanda J. and Lee, G. (2003) 'The Significance of Nonmarital Cohabitation: Marital Status and Mental Health Benefits among Middle-Aged and Older Adults', *Department of Sociology and Centre for Family and Demographic Research*, Bowling Green State University, Ohio.

Burchell, B. (1994) 'The Effects of Labour Market Position, Job Loss and Unemployment on Psychological Health', In D. Gallie, C. Marsh, and C. Vogler (eds.) *Social Change and the Experience of Unemployment*, Oxford University Press, Oxford, pp 188-212.

Burchell, B. Day, D. Hudson, M. Lapido, D. Mankelow, R. Nolan, J. Reed, H. Wichert, I. and Wilkinson, F. (1999) *Job Security and Work Intensification: Flexibility and the Changing Boundaries of Work*, York Publishing, York.

Bussing, A. (1999) 'Can Control at Work and Social Support Moderate Psychological Consequences of Job Insecurity? Results from a Quasi Experimental Study in the Steel Industry', *European Journal of Work and Organisational Psychology*, 8: 219-242.

Cascio, W. (1995) 'Whither Industrial and Organization Psychology in a Changing World of Work?', *American Psychologist*, 50: 928-939.

Clark, A. and Oswald, A. (1994) 'Unhappiness and Unemployment', *Economic Journal*, 104: 648-59.

Davy, J. Kinicki, A. and Scheck, C. (1991) 'Developing and Testing a Model of Survivor Responses to Layoffs', *Journal of Vocational Behavior*, 38: 302–317.

Dekker, S. and Schaufeli, W. (1995) 'The Effects of Job insecurity on Psychological Health and Withdrawal: A Longitudinal Study', *Australian Psychologist*, 30: 57-63.

De Witte, H. (1999) 'Job and Psychological Well-being: Review of the Literature and Exploration of Some Unresolved Issues', *European Journal of Work and Organisational Psychology*, 8: 155-177.

Dockery, M. (2003) 'Happiness, Life Satisfaction and the Role of Work: Evidence from two Australian Surveys', *Melbourne Institute of Applied Economic and Social Research*, Working Paper 24/03, The University of Melbourne [Online] Available: www.melbourneinstitute.com.au/hilda/conf-hd05.pdf.

Dollard, M. and Winefield, A. (2002) 'Mental Health: Overemployment, Underemployment, Unemployment and Healthy Jobs', *Australian e-Journal for the Advancement of Mental Health (AeJAMH)*, 1(3).

Dooley, D. Rook, K. and Catalano, R. (1987) 'Job and Non-Job Stressors and their Moderators'. *Journal of Occupational Psychology*, 60: 115-132.

D'Souza, R. Strazdins, L. Lim, L. Broom, D. and Rodgers, B. (2003). 'Work and Health in a Contemporary Society: Demands, Control and Insecurity', *Journal of Epidemiology and Community Health*, 57: 849-854.

Eisenberg, P. and Lazarsfeld, P. (1938) 'The Psychological Effects of Unemployment', *Psychological Bulletin,* 35: 358-90.

European Council of Ministers Conference. (2001) *Statement of Meeting of Health Ministers of Member States*, Brussels [Online] Available: http://europa.eu.int/rapid/start/cgi/guesten [accessed 15 November 2005].

Feather, N. (1990) *The Psychological Impact of Unemployment*, Springer-Verlag, NewYork.

Feather, N. (1992) 'Expectancy-Value Theory and Unemployment Effects', *Journal of Occupational and Organizational Psychology,* 65: 315–30.

Ferrie, J. Shipley, M. Marmot, M. Stansfeld, S. and Smith, G. (1995) 'Health Effects of Anticipation of Job Change and Non-Employment: Longitudinal Data from the Whitehall II Study. *British Medical Journal,* 311: 1264-1269.

Flatau, P. Galea, J. and Petridis, R. (2000) 'Mental Health and Well-being and Unemployment', *The Australian Economic Review,* 33(2): 161-81.

Fryer, D. (1985) 'Stages in the Psychological Response to Unemployment: A (Dis)Integrative Review', *Current Psychological Research and Reviews,* Fall: 257-273.

Gago, J. (2000) 'Mental Health Effects of Short-Term Versus Long-Term Unemployment', *European Conference on the Impact of Unemployment on Mental Health*, Paper No. 5, Bilbao.

Gallo, W. Bradley, E. Siegal, M. and Kasl, S. (2001) 'The Impact of Involuntary Job Loss on Subsequent Alcohol Consumption by Older Workers: Findings From the Health and Retirement Survey', *The Journals of Gerontology,* 56B(1): 53-59.

Goldberger, A. (1981) 'Linear Regression After Selection', *Journal of Econometrics, 15*: 357-366.

Greene, W.H. (2000) *Econometric Analysis*, 4th Edition, Prentice-Hall International, London.

Gujarati, D. (1995) *Basic Econometrics,* 3rd Edition, McGraw Hill International, Singapore.

Halford, W. and Learner, E. (1984) 'Correlates of Coping with Unemployment in Young Australians', *Australian Psychologist*, 19: 333-344.

Heaney, C. Israel, B. House, J. (1994) 'Chronic Job Insecurity Among Automobile Workers-Effects on Job Satisfaction and Health', *Social Sciences Medical*, 38: 1431-53.

Heckman, J. (1979) 'Sample Bias as a Specification Error', *Econometrica, 47*: 153-161.

Heckman, J. (1980) 'Sample Selection Bias as a Specification Error With an Application to the Estimation of Labor Supply Functions', In J. P. Smith (ed.) *Female Labor Supply: Theory and Estimation*, Princeton University Press, Princeton NJ, pp.206-247..

Hellgren, J. Goslinger, S. Chirumbolo, A. De Witte, H. Naswall, K. and Sverke, M. (2000) 'Can Satisfaction with the Union Reduce the Negative Effects of Job Insecurity? A Study within Three European Countries', *Papers Presented at the 27ᵗʰ International Congress of Psychology in Stockholm,* Report No.1, National Institute for Working Life and authors, Sweden.

Hellgren, J. and Sverke, M. (2003) 'Does Job Insecurity Lead to Impaired Well-Being or Vice Versa? Estimation of Cross-Lagged Effects using Latent Variable Modelling', *Journal of Organisational Behaviour*, 24(2): 215.

Hellgren, J. Sverke, M. and Isaksson, K. (1999) 'A Two-Dimensional Approach to Job Insecurity: Consequences for Employee Attitudes and Well-Being'. *European Journal of Work and Organisational Psychology*, 8:179-195.

HILDA. (2003) 'Annual Report 2003', *Melbourne Institute of Applied Economic and Social Research,* The University of Melbourne, Australia.

Jahoda, M. (1981) 'Work, Employment and Unemployment: Values, Theories and Approaches in Social Research. *American Psychologist,* 36: 184-191.

Jenkins, R. (2001) 'Making Psychiatric Epidemiology Useful: The Contribution of Epidemiology to Government Policy', *Acta Psychiatrica Scandiavica*, 103: 2-14.

Karasek, R. (1979) 'Job Demands, Job Decision Latitude, and Mental Strain: Implications for Job Redesign', *Administrative Science Quarterly,* 24: 285-308.

Kelley, J. Evans, M. and Dawkins, P. (1998) 'Job Security in the 1990s: How Much is Job Security Worth to Employees?', *Australian Social Monitor,* 1, September 1-10, Australia.

Kennedy, S. (2003) 'Immigrant Mental Health and Unemployment', *Social and Economic Dimensions of an Aging Population,* Research Paper No. 92, McMaster University, Canada.

Kinnunen, U. Mauno, S. Natti, J. and Happonen, M. (1999) 'Perceived Job Insecurity: A Longitudinal Study Among Finnish Employees', *European Journal of Work and Organisation Psychology,* 8: 243-60.

Knight, E. Ofsthun, N. Teng, M. Lazarus, M. and Curhan, G. (2003) 'The Association Between Mental Health', *Physical Function and Hemodialysis Mortality,* Blackwell Synergy, [Online] Available: http://www.blackwell-synergy.com/links/doi/10.1046/j.1523-1755.2003.00931.x/.

Kuhnert, K. Sims, R. and Lahey, M. (1989) 'The Relationship Between Job Security and Employees Health, *Group and Organisation Studies*, 14: 399-410.

Lazarus, R. and Folkman, S. (1984) *Stress, Appraisal, and Coping,* Springer, New York.

Lim, V. (1996) 'Job Insecurity and its Outcomes: Moderating Effects of Work-Based and Non-Work-Based Social Support', *Human Relations,* 2: 171-194.

Lucksted, A. Dixon, L. and Sembly, J. (2000) 'A Focus Group Pilot Study of Tobacco Smoking Among Psychosocial Rehabilitation Clients', *Psychiatric Services,* 51(12): 1544-1548.

Mackay, R. and Stevenson, L. (1996) 'A Test of the Hopelessness Theory of Depression in Unemployed Young Adults', *British Journal of Clinical Psychology,* 35: 117-132.

Mathurs, C. and Schofield, D. (1998) 'The Health Consequences of Unemployment: The Evidence', *Medical Journal of Australia,* 168: 178-82.

Mohr, G. (2000) 'The Changing Significance of Different Stressors After the Announcement of Bankruptcy: a Longitudinal Investigation with Special Emphasis on Job Insecurity'. *Journal of Organisational Behaviour,* 21: 337-359.

Moore, S. Grunberg, L. Anderson-Connolly, R. and Greenberg, E. (2003) 'Physical and Mental Health Effects of Surviving Layoffs: A Longitudinal Examination', *Institute of Behavioural Science: Research Program on Political and Economic Change,* Working Paper PEC 2003-0003, University of Colorado, America.

Morell, S. Taylor, R. Quine, S. and Kerr, C. (1993) 'Suicide and Unemployment in Australia', *Social Science and Medicine,* 36:749-56.

Morrell, S. Taylor, R. Quine, S. Kerr, C. and Western, J. (1994) 'A Cohort Study of Unemployment as a Cause of Psychological Disturbance in Australian Youth', *Social Science and Medicine,* 38: 1553-64.

Morrell, S. Taylor, R. and Kerr, C. (1998) 'Unemployment and Young People's Health', *Medical Journal of Australia,* 168: 236-40.

O'Brian, G. Feather, N. and Kabanoff, B. (1994) 'Quality of Activities and the Adjustment of Unemployed Youth', *Australian Journal of Psychology,* 46(1): 29-34.

OECD (1997). 'Is Job Insecurity on the Increase in OECD Countries', *Employment Outlook,* Paris.

Parker, S. Chiel, N. and Wall, T. (1997) 'Work Characteristics and Employee Well-Being Within a Context of Strategic Downsizing', *Journal of Occupational Health Psychology,* 2: 289-303.

Price, R. Friedland, D. Choi, J. and Caplan, R. (1998) 'Job-Loss and Work Transitions in a Time of Global Economic Change', in X. Arriaga, and S. Oskamp (eds.) *Addressing Community Problems,* Sage Publications, Thousand Oaks, CA: 195-222

Probst, T. (2000) 'Wedded to the Job: Moderating Effects of Job Involvement on the Consequences of Job Insecurity', *Journal of Occupational Health and Psychology,* 5: 63-73.

Probst, T. and Brubaker, T. (2001) 'The Effects of Job Insecurity on

Employee Safety Outcomes: Cross-Sectional and Longitudinal Explorations', *Journal of Occupational Health Psychology*, 6(2): 139-159.

Purcell, K. and Purcell, J. (1998) 'In-Sourcing, Outsourcing and the Growth of the Contingent Labour as Evidence of Flexible Employment Strategis', *European Journal of Work and Organizational Psychology*, 7(1).

Questad, K. Patterson, D. Boltwood, M. Heinboch, D. Dutcher, K. De Lateur, B. Marvin, J. and Covey, M. (1988) 'Relating Mental Health and Physical Function at Discharge to Rehabilitation Status at Three Months Postburn', *Department of Health and Human Resources*, National Library of Medicine, Pub Med, 9(1): 87-9, [Online} Available: http://www.ncbi.nlm.nih.gov/entrez.

Rosenberg, M. and Hovland, C. (1960) *Attitude Organisation and Change*, Yale University, New Haven.

Roskies, E. and Louis-Guerin, C. (1990) 'Job insecurity in managers: Antecedents and Consequences', *Journal of Organisational Behavior*, 11: 345-359.

Roskies, E. Louis-Guerin, C. and Fournier, C. (1993) 'Coping with Job Insecurity: How Does Personality Make a Difference?', *Journal of Organisational Behavior*, 14: 617-630.

Sanderson, K. and Andrews, G. (2002) 'Prevalence and Severity of Mental Health-Related Disability and Relationship to Diagnosis', *Psychiatric Services,* 53: 80-86.

Schnall, P. Landsbergis, P. Pieper, C. Schwatz, J. Dietz, D. Gerin, W. Schlussel, Y. Warren, K. and Pickering, T. (1992) 'The Impact of Anticipation of Job Loss on Psychological Distress and Worksite Blood Pressure', *American Journal of Industrial Medicine,* 21(3): 417-32.

Seyle, H. (1956) *The Stress of Life*, McGraw-Hill, New York.

Siegrist, J. (1996) 'Adverse Health Effects of High Effort/Low–Reward Conditions', *Journal of Occupational Health Psychology,* 1: 27-41.

Siegrist, J. (1998) 'Adverse Health Effects of Effort-Reward Imbalance at Work', In C. Cooper (ed) *Theories of Organisational Stress.* Oxford University Press, Oxford.

Stewart, W. (2001) *An A to Z of Counselling Theory and Practice*, Nelson Thornes, Third Edition, United Kingdom.

Strazzera, E. Genius, M. Scarpa, R. and Hutchinson, G. (2001) *The Effect of Protest Votes on the Estimates of Willingness to Pay for Use Values of Recreational Sites* (Nota di Lavoro 97.2001): Fondazione Eni Enrico Mattei.

Sverke, M. Hellgren, J. Naswall, K. (2002) 'No Security: A Metaanalysis and Review of Job Insecurity and its Consequences', *Journal of Occupational Health Psychology,* 7(3): 242-264.

United States Department of Health and Human Services. (1999) *Mental Health: A Report of the Surgeon General-Executive Summary,*

Rockville, MD, Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Centre for Mental Health Services, National Institute of Health, National Institute of Mental Health.

Van der Vliet, C. and Hellgren, J. (2002) 'The Modern Working Life: Its Impact on Employee Attitudes, Performance and Health'. *SALTSA Report No. 4: 2002*, Stockholm: National Institute for Working Life.

VicHealth, (1999). 'Mental Health Promotion Plan Foundation Document: 1999-2002', *Victoria Health Promotion Foundation,* Melbourne.

Ware, J. (2000) 'SF – 36 Health Survey Update', *SPINE*, 25: 24, pp. 3130-3139, Quality Metric, Boston, Massachusetts.

Ware, J. and Gandek, B. (1998) 'Methods for Testing Data Quality, Scaling Assumptions, and Reliability: The IQOLA Project Approach', *Journal of Clinical Epidemiology*, 51: 945-952.

Ware, J. Kosinski, M. and Keller, S. (1994) *Physical and Mental Health Summary Scales: A User's Manual,* The Health Institute, New England Medical Centre, Boston, Massachusetts.

Ware, J. Snow, K. and Kosinski, M. (1993) *SF – 36 Health Survey Manual and Interpretation Guide,* MA: The Health Institute, New England Medical Centre, Boston.

Warr, P. (1987) *Work, Unemployment and Mental Health*, Clarendon Press, Oxford.

Watson, N. (2004) 'Income and Wealth Imputation for Waves 1 and 2', *HILDA Project Technical Paper Series,* No. 3/04, Melbourne Institute of Applied Economic and Social Research, University of Melbourne.

Watson, N. and Wooden, M. (2000) 'The Household, Income and Labour Dynamics in Australia (HILDA) Survey: An Introduction to the Proposed Survey and Design and Plan', HILDA Project and Discussion Paper Series, 1/00, Australia.

Winkelmann, L. Winkelmann, R. (1998) 'Why are the Unemployed So Unhappy? Evidence from Panel Data', *Econometrica*, 65: 1-15.

Wooden, M. (1999) 'Job Insecurity and Job Instability: Getting the Facts Straight', mimeo, *National Institute of Labour Studies,* Flinders University.