

Perceptions of job security in Australia*

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Melbourne Institute Working Paper No. 16/02

ISSN 1328-4991
ISBN 0 7340 1540 2

September 2002

* This project has been supported by ARC Grant A79930726. I am grateful for excellent research assistance from John-Paul Cashen, to Anne Leahy and John Nielsen for assistance with the Melbourne Institute Phone Survey, and to participants in a seminar at the Melbourne Institute.

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Abstract

This study examines workers' perceptions of job security in Australia between August 1999 and May 2002. It uses a new quarterly survey that asks probabilistic questions on the likelihood of involuntary job loss, and of finding a similar job if involuntary job loss occurs. Workers' perceptions of job security are shown to display significant variation by gender, age, education, and recent job mobility, to vary pro-cyclically with business cycle conditions, and to have decreased significantly from late 2001 onwards – in the period following September 11 and several major corporate collapses in Australia. A comparison with perceptions of job security in the United States finds that there is a cross-country difference in perceptions about the probability of involuntary job loss that appears correlated with the institutional environment in those countries. Finally, there is some evidence that workers' expectations about the environment for making major household expenditure are related to their perceptions of job security.

1. Introduction

In recent times in most industrialized countries there has been substantial interest in workers' job security. Initial concern about this issue seems to have derived from anecdotal evidence and media reports that a decrease in job security occurred during the 1990s. There is now an extensive body of literature that has examined time-series patterns in the incidence of involuntary job loss for a range of countries (for example, Neumark, 2000, Farber, 2001, Gregg and Wadsworth, 1995, and Borland and McDonald, 2001).

One specific dimension of job security that has received attention is workers' perceptions of job security. Perceptions of job security are important since workers' behaviour – such as in setting wage demands, and making labour supply and savings decisions - is likely to be based on their beliefs about future job security. For example, a potential explanation for declines in the NAIRU in the United States that has been explored is that a decrease in perceptions of job security has caused workers to moderate wage demands (see Katz and Krueger, 1999). Beliefs about job security are also likely to have a significant effect on the job satisfaction and welfare of individual workers (Kelley et al., 1998). Hence changes in job security may cause changes in the average level or in the distribution of welfare amongst workers.¹

The objective of this study is to examine the determinants of perceptions of job security in Australia. It uses a new quarterly data source available from August 1999 onwards that asks probabilistic questions on the likelihood of involuntary job loss and

voluntary job mobility. A strength of the data source is that the questions on perceptions of job security are the same as in the US Survey of Economic Expectations (SEE); hence direct cross-country comparisons can be made.

The work reported in this study makes three main contributions to the existing literature. First, it represents a significant addition to international knowledge about determinants of perceptions of job security through analysis of the relation between individual worker and job characteristics and workers' perceptions of job security in Australia. An important innovation in the study is the use of a probabilistic measure of job security. Recent work (Manski and Straub, 1999) has emphasized the value of this type of measure of subjective perceptions, but to date it does not seem to have been used in studies of job security outside the United States. Second, the capacity to make direct comparisons between findings for Australia and the United States means that a cross-country perspective on the determinants of perceptions of job security can be provided. Third, the study examines the relation between job security perceptions and other dimensions of worker behaviour. This allows some preliminary understanding of the broader economic impacts of job security perceptions to be developed.

Thus far the international literature on perceptions of job security is fairly limited. Most work has been undertaken for the United States. Aaronson and Sullivan (1998) and Schmidt (1999) examine qualitative response data on job security from the US General Social Survey (GSS). Both find that perceptions of job security are lowest for those working in blue-collar jobs, with low education attainment, and who are black. Perceptions of job security appear to have declined significantly in the early

1990s relative to other periods. Interestingly, the decline in job security has been associated with a process of ‘democratization’ whereby it is high skill workers who have experienced the largest decreases in job security. Manski and Straub (1999) examine an alternative probabilistic data source on perceptions of job security and likely job search outcomes if unemployed available from the US SEE between 1994 and 1998. That study also finds evidence of a relationship between various measures of perceptions of job security and factors such as education attainment and race. With the probabilistic measure it is also possible to derive composite measures – for example, of workers’ perceptions of their overall likelihood of job mobility.²

In Australia there have been two main studies of perceptions of job security. Both have been primarily concerned with the issue of whether perceptions of job security declined in the 1990s. Both studies have been based on surveys with qualitative type questions on job security. Kelley et al. (1998) examine the period between 1989 and 1996 and find that over this period there was a decrease in the proportion of workers who believed that their job was ‘very’ or ‘fairly’ secure. Wooden (1999) examines responses to a question on whether workers think their ‘current job is safe’ over the period 1975 to 1998. Using that data source there appears to have been some decline in perceptions of job security in the early 1990s, but this effect had dissipated by the mid and late 1990s.

This study uses data from a probabilistic measure of job security in Australia available for the period from August 1999 onwards. Section 2 of the paper describes the method of measurement of perceptions of job security. Section 3 describes the data sample, and discusses issues regarding the ‘quality’ of the information on

perceptions of job security. In section 4 findings from empirical analysis are presented. The section includes descriptive information on the distribution of responses to questions on perceptions of job security, and on mean responses for disaggregate workforce groups; results from regression analysis of the determinants of perceptions of job security; analysis of perceptions of the likelihood of voluntary job mobility; a comparison with findings from United States research using the SEE; and descriptive information is presented on the relation between workers' perceptions of job security and other dimensions of behaviour. Concluding remarks are in section 5.

Several main findings emerge from the study. First, workers do not perceive job loss to be a high probability event. The likelihood of job loss in the next 12 months is stated on average to be 12.2 per cent. This represents a relatively large over-estimate of the actual rate of involuntary job loss - about 3 to 4 per cent. The average probability attributed to the joint event of job loss and not finding a similar job is stated to be about 5 ½ per cent. The distribution of perceptions of the probability of involuntary job loss is highly concentrated – primarily at zero per cent. However, there is much greater dispersion in perceptions of the probability of finding a similar job. Second, it is shown that perceptions of job security display significant variation by gender, age, education, occupation, and recent job mobility. However, there is substantial heterogeneity between individual workers so that little of the overall variation can be explained by those covariates. Third, perceptions of job security vary pro-cyclically with business cycle conditions, although the relation is only statistically significant for perceptions of the joint event of job loss and not finding a similar job. There is some evidence of a significant downward shift in perceptions of job security from late 2001 onwards – in the period following September 11 and several major

corporate collapses in Australia. Hence, it appears that perceptions may be influenced by ‘environmental’ factors as well as actual rates of involuntary job loss. Fourth, a comparison with perceptions of job security in the United States finds that there is a cross-country difference in perceptions about the probability of involuntary job loss that is particularly pronounced for younger and less educated workers, and seems correlated with the regulatory and institutional environment in those countries. Fifth, there is some evidence that worker perceptions of job security are related to other dimensions of behaviour – for example, workers with better job security outlooks are more likely to believe that it is a good time for making major household expenditure.

2. Measurement of job security

Survey questions on perceptions of job security on which this study is based are:

Question 1: I would like to ask you about your employment prospects over the next 12 months. What do you think is the percent chance that you will lose your job during the next 12 months?

Question 2: If you were to lose your job during the next 12 months, what is the percent chance that the job you eventually find and accept would be at least as good as your current job, in terms of wages and benefits?

Question 3: What do you think is the percent chance that you will leave your job voluntarily during the next 12 months?

These questions are very similar to questions on the US SEE (see for example Manski and Straub, 1999, p.450). Question 1 differs only in the words “I would like to ask you...” instead of “I would like you to think...”. Questions 2 and 3 are the same.³

Probably the main distinguishing feature of these questions is that they are probabilistic. Manski and Straub (1999, p.450) effectively summarise the strengths and weaknesses of this method of eliciting expectations:

“Probabilistic questioning can yield responses that are interpersonally comparable and that fully characterize expectations, provided that respondents are able to formulate and express subjective probabilities with reasonable care”.

The first strength of the probabilistic approach is that a probability measure provides a scale that should have the same meaning to all respondents. Hence responses are interpersonally comparable. This contrasts with qualitative approaches where respondents for example might be asked to choose between thinking it ‘likely’ or ‘not likely’ that they will lose their jobs. With this approach there can be no presumption that different respondents interpret the same response to have the same meaning. The second strength of the probabilistic approach is that it provides cardinal information on beliefs. Again, this contrasts with qualitative approaches where only ordinal information can be obtained.

The main caveat about the probabilistic approach is that respondents must understand the concept of probability (or ‘percent chance’), and be able to express beliefs about future events using this method. Where these conditions are not satisfied then problems will arise. One example would be where some respondents do not understand the concept of probability and hence provide a response that is uninformative about their beliefs. Where there is a systematic component in such responses this may impart serious bias. Such an outcome would, for example, occur

in a situation where all respondents who do not understand the concept of probability choose to answer ‘zero’. In this study, survey respondents are allowed not to answer the questions on perceptions of the likelihood of involuntary and voluntary job separation. This should minimize the problem of ‘noise’ in responses.

3. Sample description

The data for this study are from the Melbourne Institute (MI) phone survey. This is a monthly phone survey of about 1400 individuals. The potential sample of respondents is drawn from the White Pages phone directory, and is stratified by state and by metropolitan/rural locality to obtain a sample that is representative on those dimensions. Survey weights are produced that – when applied to the sample of respondents – provide a survey population that should be representative of the Australian population in its gender and age composition, and in its distribution between states and metropolitan/rural localities. The response rate to the survey is about 20 per cent from the set of ‘viable’ phone numbers that are initially called.⁴ The survey obtains information on demographic and labour force characteristics of respondents, as well as expectations of their future expenditure and savings behaviour, and other events.

Attention is restricted in this study to a sample of wage and salary earners who were employed at the time of the survey, and who were aged 18-64 years. From the ten quarterly surveys that are available from August 1999 to May 2002, there are 6254 respondents who answered at least one of the three questions on job security.

One important issue regarding data quality is non-response and choice of appropriate weights. Appendix Table 1 provides information on non-response rates to each of the job mobility questions over the whole set of surveys and for each individual survey. The rate of non-response to each question is generally in the range of 1 to 5 per cent. For example, for the whole period the average rate of non-response to the question on involuntary job loss (Question 1) is about 2.6 per cent. The rate of non-response to each question shows some slight upward tendency across the survey periods.

Appendix Table 2 shows means of the three questions for alternative weighting methods for surveys in August 1999, 2000, and 2001. Means are calculated for unweighted responses, responses weighted by the MI phone survey weights, and responses weighted by MI phone survey weights and adjusted for non-response within gender/age groups. It is apparent that there is generally a considerable difference between weighted and unweighted mean estimates, but that the correction for non-response does not much affect the estimates from the alternative survey weighting methods. For the remainder of this study the method of using MI phone survey weights with an adjustment for non-response is applied. (Each equation has a separate set of weights to adjust for non-response. This is because the number and composition of non-respondents differed across questions.)

Appendix Table 3 presents information on the distribution of characteristics of survey respondents. The distributions by categories such as gender, age, education attainment, and state of residence seem representative of aggregate workforce distributions. Respondents are drawn very evenly from each of the twelve surveys

included in the sample. The other main point to note is the relatively high rates of non-response (or non-classifiable responses) to questions on household income and employment status.

4. Perceptions of job security

This section presents the main empirical evidence on perceptions of job security. The first sub-section presents descriptive information on worker's perceptions of the likelihood of involuntary job loss (Question 1), the likelihood of obtaining a similar job as their current job were they to suffer job loss (Question 2), and a combined measure of the perception of the likelihood of involuntary job loss that is associated with non-employment or being unable to obtain a similar job ([Question 1] multiplied by [100 minus Question 2]). The second sub-section presents findings from regression analysis of the determinants of perceptions about involuntary job loss. The third sub-section broadens the focus to consider perceptions of the likelihood of voluntary job mobility, and aggregate job mobility. The fourth sub-section compares findings from this study with those for the US from the SEE. The fifth sub-section explores the relation between workers' perceptions of job security and other dimensions of behaviour.

a. Descriptive statistics

In this sub-section the focus is presentation of descriptive information on workers' perceptions of the risk and consequences of involuntary job loss. Information on the

distributions of workers' perceptions of the likelihood of involuntary job loss, and of obtaining a similar job as their current job, is shown in Figures 1a and 1b. The distribution of responses to a composite event of the probability of involuntary job loss and not finding a similar job (equal to: $[\text{Question 1}] \times [100 - \text{Question 2}]$) is shown in Figure 1c. Table 1 presents means and quartile measures of responses to each of these questions.⁵

'Bunching' of responses is a notable feature for both questions 1 and 2. This occurs primarily at multiples of five or ten: 0, 5, 10, 20, 25, 30, 40.... It is also worth noting however that the bunching does not account for all observations – particularly in the range from zero to ten, and around 100, other responses are recorded.

The average perceived probability of involuntary job loss by workers over the whole sample period was 12.2 per cent. In all time periods responses are heavily concentrated at zero probability – for the whole sample 60.3 per cent of observations are at zero. Responses above zero tend to be mainly within the range of one to ten per cent; although there are also a quite large number of workers who indicate a probability of job loss of 50 or 100 per cent. The perceived probability of job loss compares with an actual rate of job loss due to retrenchment of about 3 to 4 per cent, and due to retrenchment, ill-health and seasonal factors of about 10 per cent (Borland, 2001). Hence, it appears that, even using the broadest definition of job loss, on average workers over-estimate the likelihood of involuntary job loss.

Over one-half of workers believe that they would obtain a similar job as their current job (at least as good in terms of wages and benefits) were they to experience job loss.

For this question responses are concentrated at zero, 50 per cent, and 100 per cent – although overall there is less concentration of responses than for the question on job loss. This seems to suggest that workers hold quite divergent views about their prospects should they lose their current jobs.

Manski and Straub (1999) show that an implication of standard search-theoretic models of unemployment is that the distribution of responses to Question 2 should be uniform. The distribution of responses in Figure 1b does not seem compatible with a uniform distribution – in particular, the bunching of responses of multiples of five would lead to the rejection of that hypothesis. Nevertheless, the distribution does seem fairly evenly dispersed across the range from zero to 100. For example, the (10, 25, 50, 75, 90) quantiles of the distribution of Question 2 are (24.4, 29.6, 49.6, 59.4, 78.1) whereas they would be (10, 25, 50, 75, 90) if the distribution is uniform.

Combining information from Questions 1 and 2 it can be seen that on average workers attribute a 5.6 per cent chance to the joint outcomes of job loss and being unable to obtain a similar job. The distribution of responses for this composite outcome is heavily concentrated at zero (about 69 per cent of respondents), and between one and ten per cent (about 20 per cent of respondents).

Information on workers' perceptions of the likelihood and consequences of job loss by survey date is reported in Table 2. Beliefs about the likelihood of job loss remained relatively stable over 1999 and 2000. In 2001 there was initially a large decrease in the perceived likelihood of job loss; but by November this had increased to its highest level over the sample period and remained at that level in the first half of

2002. Importantly, the November 2001 survey was conducted after the events of September 11, and also following some major corporate collapses in Australia such as HIH Insurance and Ansett Airlines. Beliefs about the probability of finding a similar job have remained fairly stable over the whole sample period. Beliefs about the joint event of job loss and not obtaining a similar job have shown a U-shaped pattern across time. From August 1999 to February 2001 the average probability fell from 6.9 per cent to 3.8 per cent; but then over the remainder of 2001 through to May 2002 the average probability increased to 6.8 per cent. This pattern appears to correlate to some extent with the business cycle – in the first time period the national rate of unemployment fell from 7.1 per cent to 6.4 per cent; however, at the end of the second period the rate of unemployment showed little change at 6.3 per cent (ABS, *Labour Force Australia*, catalogue number 6203.0, Table 2).⁶ Hence, although movement over the first time period is consistent with a decrease in the rate of unemployment, the decline in job security over the second time period does not match with the relatively stable rate of unemployment.

Perceptions about job loss from disaggregated workforce groups are shown in Table 3. Strong differences are apparent between workers by age, education attainment, occupation category, household income, and recent job mobility.

Perceptions of the likelihood of job loss decrease with age; but also the perception of the probability of finding a similar job if job loss occurs falls with age. Of these two opposing effects, the second effect is found to dominate. Hence, workers' perceptions of the probability of job loss and not finding a similar job rise with age – in fact doubling from 4.2 per cent to 8.0 per cent.

The perceived probability of job loss declines with education attainment, and the likelihood of finding a similar job rises. Hence workers' perceptions of the likelihood of job loss and not finding a similar job are strongly inversely related to education attainment – 10.2 per cent for a worker with primary school education against 4.0 per cent for a worker with a post-graduate degree.

Workers in blue-collar occupations generally express a belief that they are more likely to experience involuntary job loss and to not find a similar job than for white collar workers. For example, whereas on average a worker in the managerial/administrator category attributes a 5.3 per cent chance to the joint event of job loss and not finding a similar job, for tradespersons and labourers the corresponding probabilities are respectively 9.1 and 6.7 per cent.

Findings for the relation between perceptions of job security and household income are very similar to those for education attainment. For workers living in households with less than \$20,000 per annum the perceived likelihood of job loss and not finding a similar job is 10.9 per cent; whereas for workers in households with annual income above \$100,000 the probability is 3.6 per cent.

Perceptions of the risk and consequences of involuntary job loss show a strong pattern of variation with recent job mobility. Workers in the same job as 12 months ago attach a lower likelihood to job loss, but also believe they are less likely to obtain a similar job, than workers who are not in the same job. For the joint event of job loss and not finding a similar job, the first effect dominates the second – workers in the

same job as 12 months ago on average attach a probability of 5.5 per cent to this event; whereas for workers not in the same job as 12 months ago that probability is 6.1 per cent.

Differences also exist between other disaggregate categories. By gender, males have a higher perceived probability of job loss, and lower probability of obtaining a similar job, than females. Some variation exists between workers who reside in different states, and in different housing types. Interestingly, there does not appear to be any substantial difference in perceptions about job loss between workers in full-time and part-time jobs, or by type of wage payment. For example, for full-time workers the average perceived likelihood of job loss and not finding a similar job is 5.5 per cent; and for part-time workers is 5.1 per cent.

b. Regression analysis

This sub-section reports findings from multi-variate analysis of predictors of perceptions of job security. Two types of regression analysis are undertaken – a weighted least squares (WLS) approach; and a quantile regression approach. (The same approaches are used in Manski and Straub, 1999.) These alternative approaches yield results that are qualitatively very similar. Hence the focus is on discussing results from the WLS approach. These results are presented in Table 4. Results from the quantile regression approach – where regressions were estimated for the 25th, 50th, and 75th percentiles – are presented in Appendix Table 4 but are not discussed.

As explanatory variables for worker perceptions of job security the same set of covariates as for the descriptive analysis are included. Two variables – household income, and hours of work – are not included due to the large number of survey respondents who did not answer questions on these topics.⁷ It is important to note that the explanatory power of the regressions is relatively low – hence there is a very high degree of heterogeneity in perceptions of job security.

Findings from the regression analysis are very similar to those obtained from analysis of the descriptive statistics. Significant effects on perceptions of job security are found for gender, age, education attainment, occupation, and recent job mobility. First, females are more confident than males of obtaining a similar job if they experience job loss, although there is no significant difference in perceptions of the probability of job loss. Overall this translates into about a 0.8 per cent lower probability being attached to the probability of job loss and not finding a similar job by females than males. Second, the perceived likelihood of finding a similar job shows a strong significant decrease with age, but the probability of job loss does not show such a pattern. For the composite event of job loss and not finding a similar job a significant effect by age does exist - for example, workers aged 55 to 64 years believe they are about 4.4 per cent more likely than workers aged 18 to 24 years to experience the joint event of job loss and not finding a similar job. Third, the main effect of education attainment is on workers' beliefs about the probability of finding a similar job should they experience involuntary job loss. Workers with more years of education are generally more likely to believe they will find a similar job. The effect carries over to the joint event of job loss and not finding a similar job - workers with at least high school completion believe they are about 2 to 4 per cent less likely than

workers without high school completion to experience that outcome. Fourth, tradespersons have significantly higher average beliefs about the likelihood of experiencing job loss and not finding a similar job – but this is the only occupation group for which a significant effect exists. Finally, workers in the same job as 12 months ago believe that are significantly less likely to lose their jobs, but also significantly less likely to find a similar job, than workers who were not in the same job at that time. For the composite event of job loss and not finding a similar job these effects operate in different directions – overall it is workers in the same job as 12 months ago who believe they are about 1.3 per cent less likely to experience job loss and not find a similar job than workers not in the same job.

The regression analysis also provides some evidence on the determinants of time-series movements in perceptions of job security. First, the rate of unemployment measure enters each regression with the expected sign. A higher rate of unemployment is associated with a positive effect on probability of job loss, negative effect on likelihood of finding a similar job, and positive effect on probability of job loss and not finding a similar job. However, only for the composite event of job loss and not finding a similar job is the effect statistically significant. Second, it appears that perceptions of job security are significantly lower in the period from November 2001 onwards than in the preceding two years. However, there is no significant difference in the perceived probability of finding a similar job. There is a quite substantial and statistically significant increase of 1.4 per cent in the composite measure of the perceived likelihood of involuntary job loss and not finding a similar job in that time period. Hence, it appears that worker perceptions of job security may

be influenced by ‘environmental’ factors as well as actual rates of involuntary job loss.

c. Voluntary job separations

A further perspective on job security is available from workers’ perceptions of their likelihood of voluntary job separation. This is because some part of voluntary job separations may be workers who switch jobs in order to avoid job loss. In other words, workers who expect to quit in order to avoid dismissal. As Manski and Straub (1999, p.468) have noted, the sum of a worker’s perceived likelihood of involuntary and voluntary job loss provides an upper bound on the probability of exogenous job destruction.

Figures 2a and 2b and Table 1 present information on the distribution of workers’ responses on the probability of voluntary job separation (Question 3), and on the sum of responses on the probability of involuntary job loss and voluntary job separation (Question 1 plus Question 3). Information on responses disaggregated by workforce characteristics has also been calculated and is discussed, although the full details of results are not presented.⁸

The average probability attributed by workers to the likelihood that they will voluntarily leave their jobs is 23.5 per cent. Hence the overall average perception of the probability of either voluntarily or involuntary job separation is 35.7 per cent. This compares with actual rates of voluntary and overall job separation of about 15 and 25 per cent respectively in Australia in the period since the mid-1970s (Borland,

2001). It therefore seems that workers also tend to over-estimate the likelihood that they will voluntarily leave their job during the next year.

Similar to the findings for the questions on involuntary job loss there is considerable ‘bunching’ of responses to the voluntary job separation question. A majority of responses (about 52 per cent) are again at zero; but there are also a large proportion of responses at 50 per cent and 100 per cent (about 12 and 6 per cent respectively).

Amongst disaggregated workforce groups the main differences are by age, education attainment, and home ownership status. First, workers aged 18 to 35 years perceive a higher likelihood of voluntary job separation than older workers. The inverse relation with age is the same as for involuntary job mobility – hence the relation between perceptions of the overall likelihood of job mobility and age is strongly inverse. For example, workers aged 18 to 24 years believe that there is about 50 per cent probability of job separation in the next 12 months; whereas for workers aged 60 to 64 years the probability is only about 30 per cent. Second, by education attainment it is workers with higher levels of attainment who perceive that they are most likely to voluntarily leave their jobs. In particular, workers with levels of attainment of high school completion or above express a higher likelihood of voluntary job separation (about 25 per cent) than workers who have not completed high school (about 15 per cent). This is the opposite pattern to beliefs about the likelihood of involuntary job mobility. Hence, perceptions of the overall likelihood of job separation do not vary greatly by education attainment. Third, workers who own or are purchasing their own home believe they are less likely to voluntarily leave their jobs (about 20 per cent chance) than for example workers who are renting (about 30 per cent chance). This is

the same pattern as for beliefs about involuntary job mobility – hence beliefs about the overall likelihood of job separation are also lower for home-owners or purchasers than other groups.

d. Comparison with United States findings

The use of the same questions on perceptions of the probability of job loss in the MI phone survey as in the US SEE makes possible comparisons between Australia and the United States. This is done using the responses to the MI phone survey reported in this study, and responses to the US SEE reported in Manski and Straub (1999).

One point to note is that – although the questions are (almost) identical – the survey periods differ; the Australian data are from August 1999 onwards whereas the United States data cover the period between 1994 and 1998.

The average belief about the probability of involuntary job loss is somewhat higher in the United States than Australia - 14.7 per cent against 12.2 per cent for Australia.

Table 5 shows that this cross-country difference is particularly pronounced for younger and less educated workers. The average per cent chance of finding a similar job should involuntary job loss occur is quite close between the two countries - 57.0 per cent in the United States, and 55.2 per cent in Australia. From Table 5 it appears that there is greater dispersion between beliefs about the probability of finding a similar job between age groups in Australia than the United States.

There are several possible explanations for why the data comparison shows that workers in the United States attach a higher likelihood to the outcome of involuntary

job loss. One possibility is that the difference reflects an actual cross-country difference in rates of involuntary job loss. Support for this explanation can be found - for example, Kuhn (2001, Table 17) presents data that suggest rates of worker displacement in the United States are slightly higher than in Australia. A difference in involuntary job loss might be due to different regulatory and institutional regimes in each country – for example, stricter employment protection policy and higher union density in Australia than the United States (Nickell and Layard, 1999). A second possibility relates to sample differences – the different sample periods, or the exclusion of self-employed from the Australian data (Manski and Straub, 1999, Table 3 shows that self-employed attach a lower average per cent chance to the possibility of involuntary job loss).⁹

Why might there be differences between Australia and the United States in the amount of dispersion in beliefs about job search outcomes between workers of different ages? One possible explanation is the effect of differences in the aggregate rate of unemployment between the countries. For the period covered by the United States data the rate of unemployment averaged about 5.3 per cent, whereas for the sample period of the Australian data the average rate of unemployment was about 6.7 per cent (OECD, Employment Outlook). In both countries the cyclical sensitivity of unemployment is greater for younger than older age workers, and for low than high education attainment workers. Hence, to the extent that job finding probabilities are related to unemployment rates (by age or education attainment), then we would expect greater disparities in job finding probabilities between age or education groups where the rate of unemployment is higher. This is consistent with the findings on beliefs about job search outcomes in Australia and the United States. Another

possible explanation might be differences in institutional structure. It is often argued that Australia has a system of minimum (award) wages that are more binding than minimum wage regulations in the United States (Nickell and Layard, 1999). It is generally predicted that the impact of those minimum wage provisions in Australia will be to decrease the number of jobs for low skill (younger and less educated) workers. It would then follow that there should be a larger differential in employment rates between Australia and the United States for low skill than high skill workers. This might explain why low skill workers in Australia attach a lower probability to the likelihood of finding a similar job than in the United States.

e. Relationship to consumption behaviour and labour market outcomes

An important motivation for research on perceptions of job security is the possibility that those perceptions may affect individual behaviour and aggregate labour market outcomes. Table 6 presents some preliminary evidence on the relation between workers' perceptions of job security and consumption expenditure.

There is an inverse relation between workers' perceptions of job security and the proportion of their household income spent on debt. For example, workers whose household spends between 76 and 100% of income on debt have an average likelihood of job loss and not finding a similar job of 8.7 per cent; whereas for workers whose household spends between 0 and 25% of income on debt the corresponding probability is 5.6 per cent. The difference is due both to a higher perceived probability of job loss and lower probability of finding a similar job.

Workers whose expectations about the environment for making major household are more positive have a better job security outlook. For example, workers who believe it is a good time to make those expenditures have an average likelihood of job loss and not finding a similar job of 5.2 per cent; whereas for workers who believe it is a bad time to make major household expenditures the corresponding probability is 6.7 per cent. The difference is due both to a higher perceived probability of job loss and lower probability of finding a similar job.

The descriptive evidence does suggest the possibility that perceptions of job security are related to consumption patterns. This evidence cannot, of course, be taken to indicate a causal relation. For example, it seems likely that the relation between perceptions of job security and proportion of income spent on debt may reflect that lower skill workers with low income are both more likely to experience involuntary job loss and to have high debt levels. The finding on the relation between worker perceptions of job security and beliefs about whether it is a good/bad time to make major household expenditure, however, seems less susceptible to this type of criticism. And overall, the results suggest that further investigation of the effects of perceptions of job security would be of interest.

5. Conclusion

This study has presented a range of information on workers' perceptions of job security in Australia for the period from August 1999 onwards. The study uses a

probabilistic measure of beliefs about the likelihood of job loss, of finding a similar job should job loss occur, and of voluntary job mobility.

On average workers perceive the likelihood of job loss in the next 12 months to be about 12 per cent, and the likelihood of voluntary job mobility in the next 12 months to be about 23 per cent. This compares with actual annual rates of about 5 to 10 per cent, and 15 per cent, respectively. Hence it appears that workers over-estimate the likelihood of job loss and mobility. About 45 per cent of workers believe they would not find a similar job were they to experience job loss. Hence, the average per cent chance attributed to the joint event of job loss and not finding a similar job is about 5 $\frac{1}{2}$ per cent.

Perceptions of job security display substantial heterogeneity. Nevertheless, there is found to be significant variation in perceptions by gender, age, education, and recent job mobility. For example, the average perceived probability of job loss and not finding a similar job is lower for females than males, is strongly decreasing with age, decreases with education attainment, and is lower for workers who have not changed jobs in the past 12 months than for workers who have changed jobs. Perceptions of job security appear to vary with pro-cyclically business cycle conditions in the way that would be expected; however, the significant decrease in job security in the period after late 2001 suggests that perceptions are also sensitive to other ‘environmental’ changes that are not necessarily manifested in macroeconomic outcomes.

A comparison with perceptions of job security in the United States finds that there is a higher perceived probability of job loss there than in Australia, and that the difference

is particularly pronounced for younger and less educated workers. One possibility is that the cross-country difference in perceptions of the likelihood of involuntary job loss might be due to different regulatory and institutional regimes.

Descriptive evidence suggests the possibility that worker perceptions of job security are related to consumption patterns. For example, workers whose expectations about the environment for making major household are more positive have a better job security outlook. While this evidence cannot, of course, be taken to indicate a causal relation, the results suggests that further investigation of the effects of worker perceptions of job security would be of interest.

Endnotes

1. Neumark (2000, pp.12-13) suggests other reasons for an interest in perceptions of job security. First, data on perceptions of job security may act as a 'check' on data on actual rates of involuntary job loss. Second, as an ex-ante measure of job security, data on perceptions may be a useful predictor of future rates of involuntary job loss.
2. An overview of other international evidence on perceptions of job security is OECD (1997).
3. All the questions on the Australian survey were intended to be exactly the same as on the US SEE. The difference is because the survey organization made a decision to change the requested question wording in order to enhance respondent understanding.
4. Not all the phone numbers initially contacted will be viable – for example, the initial set of numbers will include businesses. The response rate of 20 per cent seems relatively low compared to the SEE where Manski and Straub (2000, p.456) record response rates of about 50 per cent.
5. Information is presented for all respondents to each question. Hence the sample differs slightly between questions. Adopting the alternative approach of restricting the sample to workers who responded to both questions yields virtually the same findings.
6. Unemployment rates are calculated as the average over three months – the survey month and the two prior months. For example, the rate corresponding to August 1999 is the average for June to August 1999.
7. Moreover, questions on hours of work are only asked of workers in the same job as 12 months ago. Hence restricting to workers who responded to the hours of work question means that the 'whether in same job as 12 months ago' variable must also be excluded.
8. Available on request from the author.
9. A final possibility may be differences in probabilistic sophistication between survey respondents. It is of interest that for question 2 respondents to the Australian survey are much more likely than US respondents to use the zero and 100 per cent categories; whereas US respondents are more likely to use intermediate responses. For example, 36 per cent of Australian respondents make either a zero or 100 per cent response compared to 19 per cent of US respondents. This may suggest a greater degree of probabilistic sophistication amongst US than Australian respondents. (The US SEE contains a set of questions that require beliefs to be expressed in probability format, whereas in the MI phone survey this is the only probability format question. Hence, it may be that US respondents 'learn' during the survey to make more sophisticated use of the per cent chance scale.) Such a difference might – for question 1 which is asking about a low probability event – have the effect of 'biasing' Australian responses towards zero more than US responses.

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Table 1: Responses to questions on job security – Mean and quantile responses (Weighted – Adjusted for non-response) - Employed wage and salary earners aged 18-64 years - Pooled data for August 1999 – May 2002

	Mean	25 th percentile	50 th percentile	75 th percentile
Q.1	12.2	0	0	10
Q.2	55.2	15	60	90
Q.1*[100-Q.2]	5.6	0	0	2
Q.3	23.5	0	0	50
Q.1 + Q.3	35.6	0	11	60

Table 2: Responses to questions on job security – Mean responses (Weighted – Adjusted for non-response) - Employed wage and salary earners aged 18-64 years

	Q.1	Q.2	Q.1*[100-Q.2]
1999 – August	12.8 (1.20)	51.0 (1.74)	6.9 (0.81)
1999 – November	12.7 (1.12)	56.1 (1.66)	6.1 (0.74)
2000 – February	11.9 (0.99)	58.1 (1.58)	5.4 (0.62)
2000 – May	12.4 (1.02)	53.3 (1.61)	5.8 (0.63)
2000 – August	11.9 (1.04)	56.7 (1.63)	5.2 (0.56)
2000 – November	12.0 (1.12)	54.6 (1.70)	4.6 (0.57)
2001 – February	9.1 (0.92)	54.5 (1.69)	3.8 (0.51)
2001 – May	12.6 (1.10)	56.9 (1.64)	5.6 (0.62)
2001 – August	9.8 (0.96)	55.2 (1.67)	4.6 (0.58)
2001 – November	13.9 (1.11)	57.1 (1.66)	5.8 (0.62)
2002 – February	13.4 (1.11))	54.6 (1.72)	6.6 (0.73)
2002 – May	13.4 (1.15)	53.9 (1.69)	6.8 (0.79)

Note: Standard errors in parentheses.

Table 3: Responses to questions on job security – Mean responses (Weighted – Adjusted for non-response) - Employed wage and salary earners aged 18-64 years - Pooled data for August 1999 – May 2002

	Q.1	Q.2	Q.1*[100-Q.2]
Gender			
Male	12.7 (0.42)	53.4 (0.66)	6.3 (0.28)
Female	11.6 (0.46)	57.1 (0.70)	4.9 (0.26)
Age			
18-24 years	14.3 (1.00)	65.3 (1.25)	4.2 (0.44)
25-34 years	10.8 (0.59)	61.9 (0.94)	4.4 (0.31)
35-44 years	12.6 (0.56)	53.8 (0.85)	6.1 (0.36)
45-49 years	12.7 (0.87)	48.9 (1.34)	7.1 (0.59)
50-54 years	12.0 (0.93)	39.8 (1.45)	8.0 (0.73)
55-64 years	10.9 (1.00)	31.6 (1.64)	8.0 (0.86)
Education attainment			
Primary	17.2 (3.09)	35.9 (4.60)	10.2 (2.26)
Secondary – Incomplete	13.9 (0.74)	46.6 (1.10)	7.8 (0.54)
Secondary – Complete	11.6 (0.62)	53.4 (0.99)	5.4 (0.37)
Certificate – Non-trade	7.9 (1.44)	57.2 (3.23)	3.5 (0.77)
Certificate – Trade	15.2 (1.48)	52.7 (2.03)	7.8 (1.00)
University or tertiary degree/diploma	11.7 (0.49)	59.7 (0.75)	4.8 (0.28)
Post-graduate degree	10.9 (1.02)	60.8 (1.60)	4.0 (0.47)

Occupation			
Managers and Administrators	10.7 (0.81)	55.1 (1.36)	5.3 (0.51)
Professionals	10.7 (0.56)	58.9 (0.90)	4.6 (0.33)
Para-Professionals	11.8 (0.98)	53.4 (1.53)	5.6 (0.62)
Tradespersons	17.2 (1.30)	52.4 (1.67)	9.1 (0.88)
Clerks	11.8 (0.84)	52.3 (1.29)	5.8 (0.53)
Salespersons and Personal Service Workers	12.9 (0.82)	58.4 (1.25)	5.0 (0.44)
Plant and Machine Operators and Drivers	11.3 (1.34)	43.8 (2.22)	6.1 (0.89)
Labourers and Related Workers	14.7 (1.12)	52.5 (1.71)	6.7 (0.71)
State			
NSW	12.2 (0.58)	56.1 (0.91)	5.8 (0.37)
Victoria	13.2 (0.64)	57.0 (0.95)	5.9 (0.38)
Queensland	10.9 (0.72)	52.3 (1.18)	4.7 (0.42)
WA	13.2 (0.98)	55.6 (1.41)	5.9 (0.58)
SA	11.4 (0.92)	52.2 (1.43)	6.1 (0.59)
Tasmania	10.1 (1.52)	47.5 (2.51)	4.0 (0.65)
ACT/NT	9.2 (1.79)	56.3 (3.32)	4.6 (0.98)
Home ownership			
Rent	14.4 (0.74)	61.5 (0.98)	5.5 (0.40)
Own – with mortgage	10.8 (0.44)	55.5 (0.73)	5.2 (0.27)
Own – outright	11.9 (0.54)	49.2 (0.87)	6.2 (0.37)
Other type	14.6 (2.57)	53.9 (3.31)	5.6 (1.36)

Household Income			
Less than \$20,000	20.0 (2.40)	42.7 (2.70)	10.9 (1.65)
\$20,000 to \$40,000	14.2 (0.88)	53.2 (1.28)	6.9 (0.57)
\$40,000 to \$60,000	12.0 (0.70)	51.6 (1.08)	6.0 (0.45)
\$60,000 to \$80,000	8.1 (0.69)	55.2 (1.37)	3.4 (0.39)
\$80,000 to \$100,000	9.3 (0.82)	58.8 (1.56)	4.2 (0.48)
\$100,000 plus	10.0 (0.78)	63.4 (1.33)	3.6 (0.36)
Employment status			
Full-time	10.5 (0.37)	52.6 (0.64)	5.5 (0.25)
Part-time	11.0 (0.65)	54.0 (1.09)	5.1 (0.39)
Type of payment			
Individual contract	13.2 (0.63)	61.6 (0.93)	5.6 (0.37)
Enterprise agreement	11.1 (0.53)	50.6 (0.86)	5.4 (0.33)
Safety net	11.9 (0.51)	54.8 (0.80)	5.8 (0.33)
Other	15.3 (1.96)	57.2 (2.51)	5.5 (0.94)
In same job as 12 months ago?			
Yes	10.7 (0.32)	52.8 (0.55)	5.5 (0.21)
No	17.4 (0.84)	63.7 (1.03)	6.1 (0.42)

Note: Standard errors in parentheses.

Table 4: Predictors for job security – WLS estimates - Employed wage and salary earners aged 18-64 years - Pooled data for August 1999 – May 2002

	Q.1	Q.2	Q.1*[100-Q.2]
Gender			
Female	-0.22 (0.69)	3.78* (1.03)	-0.83 (0.43)
Age			
25-34 years	-2.00* (0.97)	-3.94* (1.45)	0.64 (0.60)
35-44 years	0.83 (1.02)	-10.41* (1.52)	2.59* (0.63)
45-49 years	1.05 (1.30)	-15.00* (1.94)	3.54* (0.80)
50-54 years	0.49 (1.46)	-22.54* (2.18)	4.19* (0.90)
55-64 years	-0.18 (1.41)	-29.32* (2.11)	4.41* (0.87)
Education attainment			
Secondary – Complete	-2.19* (0.99)	2.52 (1.49)	-1.78* (0.62)
Certificate – Non-trade	-5.79* (2.35)	7.50* (3.44)	-3.98* (1.44)
Certificate – Trade	-0.16 (1.59)	5.63* (2.37)	-1.21 (0.98)
University degree/diploma	-1.58 (0.98)	8.75* (1.47)	-2.60* (0.61)
Post-graduate degree	-1.90 (1.44)	11.01* (2.17)	-3.40* (0.89)
Occupation			
Professionals	0.05 (1.08)	2.09 (1.62)	-0.23 (0.67)
Para-Professionals	1.29 (1.30)	-1.39 (1.95)	0.57 (0.81)
Tradespersons	6.88* (1.55)	-0.52 (2.32)	3.51* (0.96)
Clerks	1.64 (1.25)	-1.29 (1.87)	0.69 (0.77)
Salespersons and Personal Service Workers	2.09 (1.23)	2.19 (1.83)	0.23 (0.76)
Plant and Machine Operators and Drivers	0.29 (1.85)	-4.30 (2.76)	-0.06 (1.15)
Labourers and Related Workers	3.69* (1.48)	0.01 (2.23)	1.01 (0.93)

State			
Victoria	0.57 (0.93)	2.21 (1.39)	-0.59 (0.57)
Queensland	-3.32 (1.99)	1.69 (2.98)	-3.38* (1.23)
WA	-2.15 (1.91)	0.96 (2.85)	-1.78 (1.18)
SA	0.27 (1.29)	1.40 (1.92)	-0.79 (0.80)
Tasmania	-4.60 (3.62)	0.55 (5.46)	-5.56* (2.26)
ACT/NT	-1.08 (2.42)	-0.00 (3.63)	0.15 (1.49)
Home ownership			
Own – with mortgage	-2.83* (0.82)	-1.42 (1.23)	-0.80 (0.51)
Own – outright	-2.06* (0.89)	-4.58* (1.33)	-0.36 (0.55)
Other type	-2.71 (2.15)	-7.34* (3.20)	-0.50 (1.33)
Type of payment			
Individual contract	1.54 (0.82)	4.125* (1.23)	0.24 (0.51)
Enterprise agreement	0.02 (0.75)	-3.92* (1.12)	-0.11 (0.47)
Other	5.23* (1.72)	3.20 (2.58)	0.23 (1.08)
Same job - 12 months ago?			
Yes	-6.53* (0.78)	-5.84* (1.17)	-1.32* (0.48)
Rate of unemployment	0.97 (0.87)	-2.17 (1.29)	1.07* (0.54)
Nov.2001-May2002	1.96* (0.79)	-1.24 (1.18)	1.36* (0.49)
Constant	12.30* (5.30)	75* (7.91)	0.99 (3.28)
No. of obsvns.	5821	5709	5620
Adjusted R-squared	0.027	0.101	0.022

Notes: a) All regressions include controls for quarter of survey; b) Omitted categories are: Male, Aged 18-24 years, Highest education attainment less than high school completion, Manager or Administrator, Resides in NSW, Renting accommodation, Payment method – Safety net wage adjustments, Not in same job as 12 months ago, Survey month = August; and c) Standard errors are in parentheses. Variables significant at the 5% level are marked with an asterik.

Table 5: Perceptions of job security – Comparison between Australia and United States

	Question 1		Question 2	
	Australia	US	Australia	US
Age				
18-34	12.2	15.8	59.8	62.2
35-49	12.1	14.9	55.2	56.8
50-64	11.4	12.5	38.8	49.0
Education attainment				
No post-secondary	12.6	17.5	50.1	50.2
Some post-secondary	12.1	16.1	55.2	56.3
Bachelor degree +	11.4	12.9	59.9	60.2

Note: Australia – Data for employed wage and salary earners, August 1999 to November 2002; United States – From Manski and Straub (1999, Table 3).

Table 6: Perceptions of job security by consumption behaviour and labour market outcomes - Employed wage and salary earners aged 18-64 years - August 1999 to May 2002 – Weighted data

A. Average perceptions of job security by proportion of income spent on debt

	Q.1	Q.2	Q.1*[100-Q.2]
0-25%	13.24 (0.62)	61.59 (0.92)	5.57 (0.36)
26-50%	12.79 (0.78)	57.87 (1.14)	5.72 (0.46)
51-75%	14.41 (1.56)	54.04 (2.22)	7.82 (1.07)
76-100%	19.22 (2.89)	52.77 (3.75)	8.69 (1.77)

B. Average perceptions of job security by perception of whether good/bad time to buy major household items

	Q.1	Q.2	Q.1*[100-Q.2]
Good	11.44 (0.41)	55.00 (0.66)	5.19 (0.25)
Good/Bad	13.24 (0.86)	54.95 (1.29)	6.34 (0.53)
Bad	13.06 (0.68)	53.97 (1.02)	6.67 (0.45)

Note: Standard errors in parentheses.

Appendix Table 1: Non-response rates to questions on perceptions of job security – Employed wage and salary earners aged 18-64 years - August 1999 – May 2002 – Weighted data

	Q.1	Q.2	Q.3
Pooled	2.6	4.5	1.2
August 1999	1.7	5.7	0.7
November 1999	3.8	4.2	1.7
February 2000	1.8	5.8	0.8
May 2000	3.1	3.9	0.5
August 2000	1.5	2.9	0.3
November 2000	3.6	5.7	1.9
February 2001	3.3	4.1	1.3
May 2001	3.5	4.6	0.4
August 2001	1.7	5.2	1.4
November 2001	2.6	3.4	2.3
February 2002	1.9	3.7	1.1
May 2002	3.1	4.4	1.8

Appendix Table 2: Mean responses to questions on perceptions of job security – Alternative weighting methods

	Q.1	Q.2	Q.3
August 1999			
Unweighted	12.6	49.5	21.9
Weighted	12.8	51.1	23.7
Weighted – Adjusted for non-response	12.7	51.1	23.8
August 2000			
Unweighted	12.5	53.5	19.9
Weighted	11.9	56.8	24.3
Weighted – Adjusted for non-response	11.9	56.7	24.3
August 2001			
Unweighted	10.2	51.9	17.8
Weighted	9.8	55.3	21.1
Weighted – Adjusted for non-response	9.8	55.2	21.1

Note: Unweighted = Raw average; Weighted = Survey weights; Weighted – Adjusted for non-response = Survey weights adjusted for non-response by gender/age; and ABS weights = Adjusted by ABS employment shares by gender/age (ABS, Labour Force Survey, 6203.0).

Appendix Table 3: Characteristics of sample – Employed persons aged 18-64 years - Pooled data for August 1999 – May 2002

	Number of observations	Proportion of sample (Weighted – Adjusted for non-response)
Gender		
Male	3263	52.09
Female	2991	47.91
Age		
18-24 years	725	18.56
25-34 years	1448	30.31
35-44 years	1913	26.25
45-49 years	835	9.79
50-54 years	750	7.07
55-64 years	583	8.02
Education attainment		
Primary	80	1.00
Secondary – Incomplete	1255	17.74
Secondary – Complete	1495	25.20
Certificate – Non-trade	131	2.03
Certificate – Trade	357	5.64
University or tertiary degree/diploma	2423	40.44
Post-graduate degree	486	7.62
Not classified	27	0.34
Occupation		
Managers and Administrators	797	12.89
Professionals	1691	27.00
Para-Professionals	670	10.46
Tradespersons	502	7.90
Clerks	843	13.40
Salespersons and Personal Service Workers	899	15.65
Plant and Machine Operators and Drivers	313	4.25
Labourers and Related Workers	539	8.45
State		
NSW	1767	33.99
Victoria	1614	26.50
Queensland	1049	18.33
WA	719	8.82
SA	688	7.94
Tasmania	233	1.61
ACT/NT	122	1.94
Not classified	62	0.88

Home ownership		
Rent	1373	25.32
Own – with mortgage	2647	40.65
Own – outright	2060	30.64
Other type	124	2.45
Not classified	50	0.94
Household Income		
Less than \$20,000	197	3
\$20,000 to \$40,000	926	14
\$40,000 to \$60,000	1221	19
\$60,000 to \$80,000	799	12
\$80,000 to \$100,000	572	9
\$100,000 plus	725	13
Not classified	1814	30
Employment status		
Full-time	1283	54.30
Part-time	3529	19.85
Not classified	1442	25.85
Type of payment		
Individual contract	1526	25.66
Enterprise agreement	1948	30.22
Safety net	2361	37.21
Other	214	3.40
Not classified	205	3.50
In same job as 12 months ago?		
Yes	5005	77.12
No	1243	22.79
Not classified	6	0.09
Survey Date		
1999 – August	486	8.13
1999 – November	538	8.54
2000 – February	551	8.60
2000 – May	559	8.95
2000 – August	545	8.52
2000 – November	512	8.14
2001 – February	505	7.98
2001 – May	530	8.59
2001 – August	494	8.23
2001 – November	518	8.35
2002 – February	510	8.07
2002 – May	506	7.89

Appendix Table 4: Predictors for job security – Quantile regression estimates – Question 1 - Employed wage and salary earners aged 18-64 years - Pooled data for August 1999 – May 2002

a. Dependent variable: Question 1 -

	Quantile		
	25	50	75
Gender			
Female	0 (0.00)	0 (0.00)	-2.73* (0.85)
Age			
25-34 years	0 (0.00)	0 (0.00)	0.40 (1.37)
35-44 years	0 (0.00)	0 (0.00)	2.91* (1.35)
45-49 years	0 (0.00)	0 (0.00)	1.49 (1.57)
50-54 years	0 (0.00)	0 (0.00)	0.65 (1.62)
55-64 years	0 (0.00)	0 (0.00)	0.31 (1.72)
Education attainment			
Secondary – Complete	0 (0.00)	0 (0.00)	-2.86* (1.18)
Certificate – Non-trade	0 (0.00)	0 (0.00)	-3.34 (2.88)
Certificate – Trade	0 (0.00)	0 (0.00)	-3.94* (1.88)
University or tertiary degree/diploma	0 (0.00)	0 (0.00)	-2.31* (1.17)
Post-graduate degree	0 (0.00)	0 (0.00)	-1.13 (1.72)
Occupation			
Professionals	0 (0.00)	0 (0.00)	0.10 (1.30)
Para-Professionals	0 (0.00)	0 (0.00)	0.46 (1.56)
Tradespersons	0 (0.00)	0 (0.00)	15.64* (1.89)
Clerks	0 (0.00)	0 (0.00)	1.43 (1.52)

Salespersons and Personal Service Workers	0 (0.00)	0 (0.00)	2.62 (1.52)
Plant and Machine Operators and Drivers	0 (0.00)	0 (0.00)	0.20 (2.06)
Labourers and Related Workers	0 (0.00)	0 (0.00)	10.55* (1.86)
State			
Victoria	0 (0.00)	0 (0.00)	0.42 (1.16)
Queensland	0 (0.00)	0 (0.00)	-2.02 (2.41)
WA	0 (0.00)	0 (0.00)	-1.61 (2.16)
SA	0 (0.00)	0 (0.00)	-0.71 (1.48)
Tasmania	0 (0.00)	0 (0.00)	-2.56 (3.95)
ACT/NT	0 (0.00)	0 (0.00)	-1.62 (2.70)
Home ownership			
Own – with mortgage	0 (0.00)	0 (0.00)	-2.74* (1.04)
Own – outright	0 (0.00)	0 (0.00)	-2.04 (1.13)
Other type	0 (0.00)	0 (0.00)	-1.08 (2.67)

Type of payment			
Individual contract	0 (0.00)	0 (0.00)	3.53* (1.01)
Enterprise agreement	0 (0.00)	0 (0.00)	0.55 (0.92)
Other	0 (0.00)	0 (0.00)	8.95* (2.10)
In same job as 12 months ago?			
Yes	0 (0.00)	0 (0.00)	-10.67* (1.01)
Rate of unemployment	0 (0.00)	0 (0.00)	0.28 (1.02)
Nov. 2001 – May 2002	0 (0.00)	0 (0.00)	2.69* (0.95)
Constant	0 (0.00)	0 (0.00)	17.31* (6.30)
Number of observations	5821	5821	5821
Pseudo R-squared	0.00	0.00	0.022

b. Dependent variable: Question 2

	Quantile		
	25	50	75
Gender			
Female	1.83 (1.74)	5.67* (1.66)	3.83* (1.00)
Age			
25-34 years	-13.08* (2.81)	-2.32 (2.69)	-1.64 (1.62)
35-44 years	-25.92* (2.74)	-14.00 (2.63)	-5.82* (1.60)
45-49 years	-31.65* (3.17)	-20.31* (3.09)	-7.05* (1.91)
50-54 years	-35.57* (3.28)	-36.14* (3.17)	-13.59* (1.92)
55-64 years	-38.79* (3.52)	-49.50* (3.36)	-24.25* (2.07)

Education attainment			
Secondary – Complete	-0.04 (2.41)	5.86* (2.32)	2.55 (1.41)
Certificate – Non-trade	7.03 (5.58)	8.37 (5.42)	5.40 (3.17)
Certificate – Trade	5.65 (3.71)	9.70* (3.66)	2.46 (2.21)
University or tertiary degree/diploma	6.74* (2.38)	15.22* (2.31)	6.40* (1.41)
Post-graduate degree	14.24* (3.45)	17.15* (3.33)	6.50* (2.01)
Occupation			
Professionals	3.52 (2.62)	-0.20 (2.56)	-1.40 (1.55)
Para-Professionals	-3.47 (3.28)	-4.71 (3.10)	-0.62 (1.86)
Tradespersons	-1.80 (3.86)	-3.59 (3.8)	0.49 (2.25)
Clerks	-0.96 (3.09)	-1.98 (3.00)	-5.14* (1.84)
Salespersons and Personal Service Workers	2.85 (3.11)	1.45 (3.01)	0.06 (1.83)
Plant and Machine Operators and Drivers	-4.65 (4.26)	-10.95* (4.13)	-3.51 (2.52)
Labourers and Related Workers	-1.75 (3.77)	-1.52 (3.62)	0.60 (2.25)
State			
Victoria	3.34 (2.31)	3.46 (2.22)	-0.07 (1.34)
Queensland	4.15 (4.95)	7.61 (4.76)	-2.25 (2.94)
WA	4.19 (4.49)	5.54 (4.38)	-3.65 (2.67)
SA	2.16 (3.04)	1.87 (2.93)	0.25 (1.74)
Tasmania	-0.03 (7.78)	13.52 (7.90)	-6.91 (4.76)
ACT/NT	-0.05 (5.37)	-6.03 (5.72)	-0.43 (3.84)

Home ownership			
Own – with mortgage	-3.09 (2.09)	-1.02 (2.02)	-0.36 (1.23)
Own – outright	-5.85 (2.27)	-5.40* (2.18)	-4.81* (1.32)
Other type	-10.36 (5.98)	-10.53 (5.54)	-2.50 (3.40)
Type of payment			
Individual contract	6.09 (2.11)	4.67* (1.97)	0.11 (1.18)
Enterprise agreement	-2.40 (1.91)	-6.49* (1.81)	-4.51* (1.10)
Other	6.80 (4.11)	2.02 (4.04)	-2.45 (2.40)
In same job as 12 months ago?			
Yes	-8.93 (2.02)	-6.23* (1.95)	-3.39* (1.18)
Rate of unemployment	-2.43 (2.09)	-6.15* (2.07)	-0.39 (1.28)
Nov. 2001 – May 2002	-1.58 (1.94)	-4.39* (1.85)	0.40 (1.13)
Constant	61.08 (12.70)	102.90* (12.75)	96.95* (7.89)
Number of observations	5709	5709	5709
Pseudo R-squared	0.097	0.096	0.029

c. Dependent variable: Question 1*[100-Question 2]

	Quantile		
	25	50	75
Gender			
Female	0 (0.00)	0 (0.00)	-1.36* (0.28)
Age			
25-34 years	0 (0.00)	0 (0.00)	-0.03 (0.44)
35-44 years	0 (0.00)	0 (0.00)	1.26* (0.44)
45-49 years	0 (0.00)	0 (0.00)	0.91 (0.51)
50-54 years	0 (0.00)	0 (0.00)	0.54 (0.53)
55-64 years	0 (0.00)	0 (0.00)	1.06 (0.57)

Education attainment			
Secondary – Complete	0 (0.00)	0 (0.00)	-1.69* (0.39)
Certificate – Non-trade	0 (0.00)	0 (0.00)	-1.92* (0.94)
Certificate – Trade	0 (0.00)	0 (0.00)	-1.90* (0.62)
University or tertiary degree/diploma	0 (0.00)	0 (0.00)	-1.66* (0.38)
Post-graduate degree	0 (0.00)	0 (0.00)	-0.89 (0.56)
Occupation			
Professionals	0 (0.00)	0 (0.00)	-0.06 (0.42)
Para-Professionals	0 (0.00)	0 (0.00)	0.32 (0.51)
Tradespersons	0 (0.00)	0 (0.00)	4.98* (0.61)
Clerks	0 (0.00)	0 (0.00)	0.79 (0.50)
Salespersons and Personal Service Workers	0 (0.00)	0 (0.00)	0.78 (0.50)
Plant and Machine Operators and Drivers	0 (0.00)	0 (0.00)	0.14 (0.68)
Labourers and Related Workers	0 (0.00)	0 (0.00)	0.94 (0.60)
State			
Victoria	0 (0.00)	0 (0.00)	-0.06 (0.37)
Queensland	0 (0.00)	0 (0.00)	-0.83 (0.79)
WA	0 (0.00)	0 (0.00)	-0.59 (0.71)
SA	0 (0.00)	0 (0.00)	-0.07 (0.48)
Tasmania	0 (0.00)	0 (0.00)	-1.13 (1.30)
ACT/NT	0 (0.00)	0 (0.00)	0.36 (0.91)

Home ownership			
Own – with mortgage	0 (0.00)	0 (0.00)	-0.26 (0.34)
Own – outright	0 (0.00)	0 (0.00)	-0.32 (0.37)
Other type	0 (0.00)	0 (0.00)	0.20 (0.88)
Type of payment			
Individual contract	0 (0.00)	0 (0.00)	0.58 (0.33)
Enterprise agreement	0 (0.00)	0 (0.00)	0.50 (0.30)
Other	0 (0.00)	0 (0.00)	0.54 (0.71)
In same job as 12 months ago?			
Yes	0 (0.00)	0 (0.00)	-1.28* (0.33)
Rate of unemployment	0 (0.00)	0 (0.00)	0.29 (0.34)
Nov. 2001 – May 2002	0 (0.00)	0 (0.00)	1.17* (0.31)
Constant	0 (0.00)	0 (0.00)	2.87 (2.06)
Number of observations	5620	5620	5620
Pseudo R-squared	0.00	0.00	0.015

Notes: a) All regressions include controls for quarter of survey; b) Omitted categories are: Male, Aged 18-24 years, Highest education attainment less than high school completion, Manager or Administrator, Resides in NSW, Renting accommodation, Payment method – Safety net wage adjustments, Not in same job as 12 months ago, Survey month = August; and c) Standard errors are in parentheses. Variables significant at the 5% level are marked with an asterik.