Transitions from Casual Employment in Australia

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November 2008

Suggested running title: Transitions from Casual Employment in Australia

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Acknowledgements

This paper is based on research commissioned by the Australian Government Department of Education, Employment and Workplace Relations, and uses the confidentialised unit record file from the Household, Income and Labour Dynamics in Australia (HILDA) Survey (release 5.0). The HILDA Survey Project was initiated, and is funded, by the Australian Government Department of Families, Housing, Community Services and Indigenous Affairs, and is managed by the Melbourne Institute of Applied Economic and Social Research. Additional funding to support this research was provided by the Faculty of Economics and Commerce, University of Melbourne. We gratefully acknowledge the important contributions made by each of the aforementioned organisations. Of course, the findings and views reported in this paper are those of the authors alone. We also thank Suzan Ghantous for assistance with the preparation of data.

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Abstract

A distinctive feature of the Australian labour market is a high incidence of casual employment, with almost 25% of Australian employees in 2007 classified as employed on a casual basis. The extent to which casual employment is or is not an undesirable feature of the Australian labour market, however, depends, at least in part, on the extent to which such employment is a permanent or temporary state. This paper uses longitudinal data from the HILDA Survey to examine the extent to which casual employees are able to access non-casual jobs in the future and to contrast the experiences of casual employees with that of other labour market participants. It does so in a broad context of general labour market mobility. For this purpose a dynamic mixed multinomial logit model of labour market states is estimated which reveals high annual rates of mobility from casual employment into non-casual employment. Further, among men, casual employees are found to be far more likely to make the transition into non-casual employment than otherwise comparable unemployed job seekers. For women, however, this is not the case.

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I. Introduction

Recent decades have seen increased concern in many Western economies about the rising incidence of various forms of non-standard employment, usually assumed to be associated with less stable and more precarious working arrangements (e.g., temporary employment contracts). This has resulted in a flurry of research activity concerned with identifying whether or not exposure to such forms of employment hinders or enhances future labour market prospects (e.g., Dekker, 2001; Korpi and Levin, 2001; Booth *et al*., 2002; Holmlund and Storrie, 2002; D'Addio and Rosholm, 2005; Gagliarducci, 2005; Ichino *et al.*, 2005). Findings, however, might be expected to vary widely across countries depending on both the types of non-standard employment arrangements that prevail and their incidence. The Spanish experience with temporary employment contracts, for example, has received considerable attention (e.g., Alba-Ramirez, 1998; Amuedo-Dorantes, 2000, 2001; Dolado *et al*., 2002; Guell and Petrongolo, 2007), in large part because the incidence of such contracts in that country is so great; by the early 1990s around 35% of all employees in Spain were covered by temporary employment contracts (Guell and Petrongolo, 2007, p. 154).

One country which has not received much attention, but where the incidence of non-standard employment approaches that of Spain, is Australia. Most notably, the Australian labour market is characterised by a very high level of casual employment, with Australian Bureau of Statistics (ABS) data indicating that, in August 2007, almost 25% of all employees (after excluding owner managers) were employed on a casual basis (derived from ABS, 2008, Table 12). This has given rise to a public debate about the erosion in labour standards, often resulting in an overtly simplified description of the labour market as consisting of 'good jobs' and 'bad jobs', with casual jobs usually

assumed to be among the latter, although this has been subject of debate (cf. Wooden and Warren, 2004; Watson, 2005). The public debate about good jobs and bad jobs, however, typically ignores labour market dynamics. If we accept the claim that casual jobs are inferior to non-casual jobs, casual jobs might still serve as useful entry points into the labour market for the unemployed and for labour force entrants and re-entrants. This would be especially so if employment in casual jobs could be demonstrated to enhance the prospects of obtaining more secure, non-casual employment. The principal objective of this paper is to inform this debate by mapping all labour market transitions, but with a particular focus on the relationship between non-standard employment, and especially casual employment, and future labour market outcomes.

More specifically, this paper uses longitudinal data from the first five waves of the Household, Income and Labour Dynamics in Australia (HILDA) Survey to: (i) quantify the rate of mobility between different labour market states in Australia; and (ii) estimate a model of labour market outcomes in which both casual and fixed-term contract employment are separately identified. Our approach to modelling labour market transitions differs from (and improves upon) the majority of previous research undertaken overseas by using the full sample to model all labour market transitions, rather than restricting the sample to individuals in a particular labour market state at origin. The advantage of this approach is that any individual labour market history can be simulated, using conditional probabilities, for the full sample and so allowing the question of the counterfactual to be addressed, a question which has received very little attention in the literature on progression from non-permanent or non-standard employment thus far.

The remainder of this paper is structured as follows. In Section 2 we briefly review previous research that has examined mobility into and out of casual employment in

Australia. The HILDA Survey data, which are at the centre of the analyses reported here, are then introduced in Section 3. This section also summarises the rate of transition between different labour market states, and in particular, in and out of casual employment. We then report, in Section 4, results from modelling the process of transition between different labour market states. Section 5 concludes.

II. Previous Research

An understanding of how current labour market status impacts on future employment prospects requires longitudinal data that trace the employment histories of workers over time, and unfortunately Australia has, at least historically, not been well served by high quality longitudinal data collections. The most notable exceptions are the various longitudinal youth cohort panels that have tracked relatively large samples of young people since the mid-1980s (see Marks and Rothman, 2003), and the Survey of Employment and Unemployment Patterns (SEUP), which followed a sample of persons aged 15 to 59 years (as at May 1995) over a relatively short period – three interviews conducted one year apart, with retrospective information collected at the first interview (see Le and Miller, 1998).

Gaston and Timcke (1999), for example, used data from one of the youth cohorts to track the labour market destinations of young people (all between 17 and 20 years of age in 1990) over a four-year period (1990 to 1994). They concluded that "adult labour market outcomes may, for the most part, be unrelated to early labour market experiences" and that "longer term labour market outcomes are … driven by personal preferences, unobserved heterogeneity, as well as the steady accumulation of labour market experience and acquisition of educational qualifications" (Gaston and Timcke, 1999, p. 345). Of course, this research is subject to one data driven limitation; the

findings relate specifically to the experiences of young adults and so may not be generalisable to a broader population.

The SEUP data is not subject to this particular limitation, and was initially argued to provide strong evidence of little progression from casual to permanent employment (Burgess and Campbell, 1998). Subsequent research using these same data suggests less negative conclusions. Dunlop (2001) used these data to examine mobility among low-paid workers (many of them casual employees) over a two-year period, and concluded that the majority of workers in low-paid casual jobs in September 1995 were, two years on, either still stuck in low-paid jobs or were jobless. The proportion of cases making the transition to high-paid jobs, however, was not insubstantial – 42% (in the general population sub-sample). Further, it was not that much lower than the transition rate for low-paid workers in full-time permanent jobs – about 55%.

Chalmers and Kalb (2001) made use of the full three-year period available in the SEUP data and unlike previous research, explicitly addressed the issue of the counterfactual. They found that, for persons who became unemployed in the first year of the survey, it was quicker, on average, to get to 'permanent' employment via casual employment. That is, unemployed persons who find casual jobs may indeed spend long periods without 'permanent' jobs, but the alternative – continued periods without employment – is worse.

Overall, the current body of research is still relatively underdeveloped. It has tended to focus on population sub-groups (e.g., youth or the unemployed); the question of the counterfactual has, with the notable exception of the work of Chalmers and Kalb (2001), not been considered; and the possibility that results are influenced by unobserved heterogeneity has been ignored or downplayed.

III. Data

The HILDA Survey

This paper uses data from the first five waves of the Household, Income and Labour Dynamics in Australia (or HILDA) Survey. Described in considerable detail by Wooden and Watson (2007), the HILDA Survey is an annual longitudinal household panel survey that commenced in 2001 with a large national probability sample of households designed to provide an individual sample reflecting the total population of Australians residing in private dwellings. The initial sample of respondents comprised close to 14,000 individuals aged 15 years or over from about 8,000 households. Sample sizes, however, vary each wave, reflecting deaths and non-response, as well as the incorporation of new sample members as a result of both aging (household members who turn 15 years of age become part of the target population each year) and changes in household composition. Given our interest in employment transitions, all of the analyses reported on in this paper restrict the population of interest to persons aged 15 to 64 years of age on the 30th June prior to time *t*.

Central to all of the analyses reported on in this paper is the distinction between different labour market states. Our approach begins with the standard ABS labour force framework, which, in turn, is based on International Labour Organisation conventions, and divides the population into three mutually exclusive categories: the employed; the unemployed; and those not in the labour force. Since our focus here, however, is on the employed, in the multivariate analysis we combine the unemployed and not in the labour force groups to form a single jobless category. We also distinguish between employees and self-employed persons. Note that we depart from the conventional ABS definition by treating owner-managers of incorporated enterprises as self-employed and not as employees.

Identifying and measuring casual (and fixed-term contract) employment

Critical for this study is the identification of casual employees. In most other parts of the world the meaning of casual work would closely accord with a dictionary definition, and thus cover jobs that are both non-permanent and irregular. This is not the case in Australia, where casual jobs are sometimes of long duration and in many instances the working hours arrangements are far from irregular. This reflects the lack of any precise and consistent definition of casual employment in both common and industrial law in Australia (Owens, 2001). Nevertheless, most casual jobs in Australia, at least historically, have had two main common features. First, they could be terminated without notice.[1] Second, they did not provide the same range of entitlements provided to other employees. In particular, casual employees generally do not have entitlements to paid sick leave, paid annual leave or paid public holidays. It is this latter feature of casual work that has been most frequently used to measure its incidence in Australia.

A feature of the HILDA Survey dataset is that it permits construction of estimates of casual employment using both the proxy measure based on entitlements, and self-reported perceptions about the employment contract type. With respect to the latter, the relevant question in the HILDA Survey asks respondents to classify themselves into one of three categories: (i) permanent or ongoing; (ii) casual; and (iii) fixed-term contract. A respondent can thus not have a fixed-term employment contract and also be classified as a permanent employee, as typically happens when the proxy measure is used (since

[1] This is no longer strictly true, with many casual employees having access to unfair dismissal protection. Nevertheless, it is almost certainly the case that relatively few casual employees make use of such legal means of redress following termination.

those on fixed-term employment contracts usually have access to paid annual leave and paid sick leave).

While the relative merits of a self-reported measure have been the subject of debate (cf. Campbell and Burgess, 2001; Murtough and Waite, 2001), the ability to separately distinguish fixed-term contract workers is very attractive. As a result, we opt for the self-reported classification of contractual employment status in this paper. The choice of measure, however, is not expected to have large consequences; on average, in any one year, 84% of employees that report not having paid leave entitlements also report being employed on a casual basis.

Labour market transitions

Table 1 displays the average year-to-year transition rates in labour market status for all population of persons aged 15 to 64 years. Focusing on the figures reported in the main diagonal (starting in the top left cell and finishing in the bottom right cell), it can be seen that there is a relatively high degree of persistence in labour market status from one year to the next for permanent employees, the self-employed, and persons not in the labour force.[2] That is, between 75% and 85% of persons in these groups at any point in time will still be in the same labour market state one year later. At the other end of the spectrum, the most fluid labour market state is unemployment; only a little over one-quarter of all unemployed persons will still be unemployed one year later.

Turning now to the group of central interest to this paper, Table 1 shows that the majority of casual employees – 55% on average – will still be in casual employment one year later. Nevertheless, a sizeable fraction (about 22%) will be working as permanent

[2] These figures will tend to overstate labour market stability given they do not fully take into account changes in labour market status between interview dates.

employees, while about 5% will be working on a fixed-term contract and a further 3% will be self-employed. Interestingly, the annual rates of transition between casual employee status and permanent employee status are very similar to the annual rates of transition between irregular and regular employment reported by Dekker (2001) for Britain, Germany and The Netherlands during the 1990s (21%, 26% and 21% respectively). Table 1 also provides some interesting insights into the relationship between casual employment and unemployment. While casual employees are clearly at much greater risk of unemployment than non-casual employees, the proportion of casual employees who are in unemployment one year later is still quite small – just 4%. A much larger fraction (11%), however, moves into other jobless states, possibly reflecting the weaker attachment of many types of casual workers (e.g., working students and married mothers) to the labour force.

The figures reported in Table 1 are also consistent with the view that casual employment is a commonly used port of entry into the labour market. If a person is unemployed and gains employment in the subsequent period they are more likely to be employed in casual work as opposed to non-casual employment. The same is also true of persons who enter employment from outside of the labour force, though the proportions involved here are relatively small.

We now turn to the four-year transition rates. These are reported in Table 2. A comparison with the annual transition rates reported in Table 1 reveals that the four-year transition rates out of casual employment are, as we would expect, noticeably higher. After four years almost 42% of casual employees in wave 1 had moved into permanent employment, and this rises to 54% if we include transitions into fixed-term employment and self-employment. Casual employees are still at greater risk of becoming unemployed or jobless four years on than other employees, but the greater risk factor is

unemployment; compared with persons without a job, casual employees are far less likely to be at risk of either unemployment or joblessness three years on.

IV. Modelling Labour Market Transitions

The estimation framework

Most studies into progression from non-standard employment restrict the data to the sub-group of interest at time zero, and then track their subsequent labour market outcomes. This approach is suitable for answering questions such as how long people remain in non-standard jobs, who progresses from non-standard employment to a permanent job, and who exits into unemployment, but is unable to answer the counterfactual question of what would have happened to persons working in non-standard jobs had they been in a different labour market state instead? Sometimes data from a randomised trail is available to address the counterfactual. For example, Autor and Houseman (2005) use random assignment of welfare-to-work clients to different service providers that differ substantially in their placement rates at temporary help jobs, to determine if employment through temporary help firms is better than the alternative. Unfortunately, we do not know of any experimental data available for Australia that would allow a similar approach. An alternative to using experimental data would be a quasi-experimental approach, involving propensity score matching (as in Ichino *et al.*, 2008). However, although we are predominantly interested in the progression from casual employment to permanent employment, it is important to keep in mind we seek to model *all* labour market transitions.

In addition to being able to address the counterfactual, the model should also be able to address the longstanding econometric issue regarding the nature of state dependence; i.e., the persistence in labour market status from one year to the next.

Heckman and Willis (1977) have defined two sources of dependence: a) unobserved heterogeneity, which gives rise to spurious dependence; and b) true state dependence. The implications of observed state dependence being largely the result of spurious dependence cannot be understated. If unobserved heterogeneity reflects unobserved ability and different preferences over family and career, time spent in alternative labour market states will have no lasting effect on subsequent labour market states. However, if there is true state dependence in employment status, a policy that moves people into work will have a lasting effect and will permanently increase the number of people in work. It is, therefore, important to be able to decompose observed state dependence into its true state dependence and spurious state dependence components.

A model that can address both the counterfactual and distinguish between spurious and true state dependence is a random effects multinomial logit specification with lagged labour market outcomes as explanatory variables, or a dynamic mixed multinomial logit (MMNL).[3] This approach is similar to that used by Gong *et al*. (2004), who analysed labour market mobility in urban Mexico using two separate five-wave panels. Where our approach differs from Gong *et al*. (2004) is in the treatment of the initial condition problem that arises from the inclusion of lagged outcomes (in combination with the inability to observe all individuals from the start of their working life). Rather than following Heckman (1981) and separately estimating outcomes in the initial period, we instead follow Wooldridge (2005) and specify unobserved heterogeneity conditional on the first period outcome. The same approach has been applied by Bjørner and Leth-Petersen (2007) in a study on household car ownership in

[3] See Uhlendorff (2006) for a short but lucid explanation of why estimation of a multinomial logit with lagged dependent variables is an appropriate method for modelling the transition probabilities between different labour market states.

Denmark and by Erdem and Sun (2001) in a study on brand loyalty using supermarket scanner data.

We distinguish five outcomes (or labour market states) for the dependent variable: casual employment, permanent employment, fixed-term employment, self-employment, and joblessness. Note that while we combine the unemployed and those who are not in the labour force into a single jobless category for our dependent variable, we do distinguish between them when we use past labour market states as explanatory variables. This enables us to create the proper comparison groups for our scenario analysis.

To formalise the model, let Y_{it} represent the choice by individual i in wave t and let J be the discrete choice set, where J consists of five choices. Assuming the random individual specific terms in the logit's underlying random utility specification to be independent extreme value distributed, as in the standard multinomial logit, the probability that an individual i chooses a particular state j in period t, conditional on the unobserved random effect μ_i, is

$$\text{Prob}(Y_{it} = j \mid \mu_i) = \frac{\exp\left(\begin{array}{l}\beta_j^C C_{i1} + \beta_j^P P_{i1} + \beta_j^F F_{i1} + \beta_j^{SE} SE_{i1} + \beta_j^{UE} UE_{i1} + \\ \gamma_j^C C_{it-1} + \gamma_j^P P_{it-1} + \gamma_j^F F_{it-1} + \gamma_j^{SE} SE_{it-1} + \gamma_j^{UE} UE_{it-1} + \\ \beta_j^x X_{it-1} + \mu_i\end{array}\right)}{\sum_{m=1}^{5} \exp\left(\begin{array}{l}\beta_m^C C_{i1} + \beta_m^P P_{i1} + \beta_m^F F_{i1} + \beta_m^{SE} SE_{i1} + \beta_m^{UE} UE_{i1} + \\ \gamma_m^C C_{it-1} + \gamma_m^P P_{it-1} + \gamma_m^F F_{it-1} + \gamma_m^{SE} SE_{it-1} + \gamma_m^{UE} UE_{it-1} + \\ \beta_m^x X_{it-1} + \mu_i\end{array}\right)} \quad (1)$$

where C_{it}, P_{it}, F_{it}, SE_{it}, and UE_{it} are dummy indicators for individual i being in casual employment, permanent employment, fixed-term employment, self-employment, or unemployment in wave t, respectively (with the not in the labour force state acting as the reference group), and X_{it} is a vector of control variables. The parameter vector for one of the outcome choices needs to be normalised to zero, as in any MNL. In this

analysis we use joblessness (NE) as the normalised outcome. The list of control variables is intended to capture the effects of geographic location[4], age, education and where educated, marital status (or more strictly, partnership status), the presence and age of dependent children, and work experience (measured by the total number of years in paid employment since leaving school).

We follow Bjørner and Leth-Petersen (2007) and relax the IIA assumption of independence of the errors imposed by the standard multinomial logit by letting the random effects, μ_i, be correlated across the different choices (i.e., μ is multivariate normally distributed with a fully flexible variance covariance matrix).

The probability that we observe an individual's labour market history to be $Y_i = \{Y_{i1}, Y_{i2}, Y_{i3}, Y_{i4}, Y_{i5}\}$, given unobserved heterogeneity μ_i, is

$$\text{Prob}(Y_i \mid \mu_i) = \prod_{t=2}^{5} \prod_{j=1}^{5} \text{Prob}(Y_{it} = j \mid \mu_i) * I(Y_{it} = j) \tag{2}$$

where I(·) denotes the indicator function. In a final step, the unobserved heterogeneity μ_i needs to be integrated out of the above equation to get the unconditional probability Prob(Y_i). We do so numerically by taking random draws from the multivariate normal distribution, evaluate Prob($Y_i \mid \mu_i$) for each of these draws, and then average over those to get Prôb(Y_i).[5]

The model is thus estimated by simulated maximum likelihood with the pseudo log-likelihood to be maximised defined as

$$\text{Pseudo LL} = \sum_i \ln\left(\text{Prôb}(Y_i)\right) \tag{3}$$

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[4] We include dummy variables identifying the major cities of Australia (with the largest city, Sydney, being the omitted reference group), and distinguishing between inner regional and outer regional parts of Australia (which, in turn, are based on a categorical measure of remoteness of Australian localities developed by the ABS).

Results: Females

The estimation results from the MMNL model for females are presented in Table 3. Reported are the coefficient estimates, with standard errors in square brackets, for the most saturated model, which incorporates correlated random effects. To assist interpretation of the economic significance of the covariates we report the corresponding mean marginal effects.[6]

Most of the control variables are only of passing interest so are ignored here. Instead we focus our attention on the coefficients on the one-period lagged labour market states. These capture the extent of true state dependence. As is clearly evident, these coefficients are positively signed and large in magnitude, indicating that, in the case of women, labour market choices entail a large amount of true state dependence. However, the observed state dependence is not only due to true state dependence, but also depends on unobserved heterogeneity, as is evident from the strongly significant estimates associated with the random effects.

Although the mean marginal effects are useful, they are of the 'naive' variety. Each dummy covariate is alternatively set at 0 and 1, but all other covariates are held at their observed values. However, if one was self-employed in the previous period it implies the dummy covariates for all other labour market states should take on the value 0. This notion is executed in the scenario analysis which is nothing more or less than a different type of mean marginal effect calculation, or an analysis of the counterfactual. The approach is straightforward. After the model has been estimated we can predict the labour market outcomes in period *t* for all individuals in the sample after having set –

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5 We use a method developed by Halton (1960). In all cases, we took 250 (Halton) draws.

6 For comparative purposes, Tables 3A and 5A in the Appendix provide the coefficient estimates and standard errors for the model without random effects for females and males, respectively.

again for all individuals – one of the labour market states in period *t-1* to 1 and all other labour market states in period *t-1* to 0. This is repeated for each of the possible labour market states in period *t-1*. The predicted distribution of labour market states using the original dataset (i.e., using the observed values) can then be compared to the predicted distribution of labour market states using the dataset in which labour market histories have been conditioned. Note that these predicted probabilities are population estimates and not estimates for subgroups. The results of this exercise are presented in Table 4.[7] To assess the role of the random effects we perform the scenario analysis for both the specification with and without random effects. As is apparent from Table 4, the random effects massively reduce the effect of lagged labour market status. For example, conditioning on casual employment in the previous period, the probability of an individual still being in casual employment is, in the absence of random effects, 45.2%. Once we allow for random effects this drops to 34.3%. Similarly large declines in the predicted effects of lagged labour market states are observed for each of the other labour market outcomes in our model.

Comparing the probabilities of transiting to permanent employment at time *t* conditional on being unemployed or working in a casual job in the previous period *t-1* shows that this distinction (between previous unemployment and previous casual employment) does not matter much in either specification. Both are close to equal in terms of their association with the probability of being permanently employed. In fact, in the model with random effects, unemployment in the previous period is associated with marginally higher permanent employment probabilities than casual employment in

[7] We can also simulate the effect of the alternative one-period lagged labour market states when additionally conditioning on employment and labour market status in the first wave (i.e., the initial labour market state). These results are not reported here, but are available on request, from the authors.

the previous period (by 1.5 percentage points). However, and not surprisingly, these same women are 6.6 percentage points less likely to be in work if unemployed in the previous period compared to when working in a casual job in the previous period (in the same specification).

The implication from our preferred specification (with random effects) is that spells of casual employment raise the likelihood that a woman will be in work in the future, but this increased probability of employment is driven by a higher probability of casual employment. Compared to experiencing an unemployment spell, the probability of being permanently employed in the future is actually marginally lower, all else being equal.

Interestingly, the probability of transiting from fixed-term employment to permanent employment is roughly 43% under either specification. Furthermore, the predicted transition probability from any one of the in-work states into joblessness is also relatively unresponsive to the inclusion of random effects, and hovers around the low 20% mark. It thus seems that, in order to increase female progression into permanent employment, it is more effective to have a policy that promotes fixed-term employment as an entry into the labour market rather than casual employment. Compared with casual employment, fixed-term employment is associated with a substantially higher probability of transiting to permanent employment (42.9% versus 31.6 for casual, respectively) but no higher probability of becoming jobless in the next period (21.0% in both cases).

Results: Males

The estimation results for males are presented in Table 5. From the significance of the one-period lagged labour market states and the random effects it follows that the

observed state dependence for men is also the result of both true state dependence and spurious state dependence. The results of the scenario analysis based on the estimation results of the MMNL for males in Table 5 are displayed in Table 6, on which we will base our discussion below.

Focussing on the probabilities of permanent employment, we find that, in contrast to women, spells of casual employment noticeably increase the probability of being permanently employed in the future compared to spells of unemployment. The increase in probability is 8 percentage points in the model without random effects. Furthermore, this is only marginally reduced to 6 percentage points when random effects are included. In terms of overall employment, controlling for unobserved heterogeneity has a much larger effect. Without such controls, spells of lagged casual employment reduce the probability of joblessness by about 20 percentage points, relative to lagged spells of unemployment. However, this difference shrinks to only 6 percentage points when including random effects.

Overall, it is very clear that as for women, casual employment enhances the probability that male employees will still be employed in the future, vis-à-vis the alternative of spells of unemployment. But unlike women, casual employment appears to also enhance the likelihood of securing permanent jobs one year onwards, at least relative to the unemployed job search alternative, and that this effect is robust to the inclusion of controls for unobserved heterogeneity. In other words, for men at least, there is something innate about employment in a casual job that enhances the probability of being permanently employed in the future.

When comparing fixed-term employment as an alternative to casual employment it is clear that, as for women, this is a more effective way of increasing the probability of future permanent employment. However, in contrast to the case of women, this

increased probability comes with a trade-off: a 2.1 percentage point increase in the risk of future joblessness.

Results: Further observations

In general, controlling for unobserved heterogeneity, operationalised using random effects, reduces the effects of lagged labour market status on current labour market status and thereby ensures that predicted distributions of labour market states using conditioned labour market histories remain closer to the observed distribution (i.e., using observed labour market histories) than would be obtained without controls for unobserved heterogeneity. Ignoring the two labour market states self-employment and not in the labour force for the moment, controlling for unobserved heterogeneity has two effects: (i) it lifts the proportion of persons transiting into permanent employment from both casual employment and unemployment; and (ii) it lifts this proportion more strongly among the unemployed than among casual employees. In contrast, the effect of unobserved heterogeneity on transiting from fixed term employment to permanent employment is virtually nil. The first finding implies that if we do not account for unobserved heterogeneity we will be overly pessimistic about individuals' transition probabilities into permanent employment. The second finding, at least at first glance, may seem surprising, but is consistent with the idea that every unemployed person is by definition searching for employment. That is, we would expect search intensity to be less among employees (including casual employees) than among the unemployed. It, therefore, should not be surprising to find that the probability of being in non-casual employment in the next period is higher conditional on being unemployed versus casually employed at time *t*. The question then is why we only observe this for women. One possible explanation is that there is a stigma effect from unemployment which, on

average, is worse for men than women. This would give rise to the enhancing effect of casual employment, relative to unemployment, in securing non-casual employment that we observe for men.

Interestingly, the most effective pathway to permanent employment appears to be fixed-term employment. We can only speculate as to why. Given its temporary nature, it seems reasonable to assume that on-the-job search intensity will be relatively high, but in order to explain the difference relative to casual employment it must be much higher. Fixed-term employment, of course, also provides the possibility of transiting to permanent employment with the current employer, but so does casual employment. One possible explanation is that employers may be more disposed to using fixed-term employment as a screening tool than they are casual employment.

V. Concluding Remarks

Does casual employment provide a bridge to permanent employment? That is, given permanent employment is preferable to casual employment (at least in the long-run), are workers better off accepting casual work rather than remaining unemployed and continuing to search for alternative employment? The research presented here suggests that the answer to this question is yes, but only for men. Indeed, among women, and once we account for preferences (and other sources of unobserved heterogeneity), we find that unemployment has the edge over casual employment when it comes to enhancing the probability of permanent employment one year onwards. Interestingly, it was shown that the most effective pathway to permanent employment appears to be via fixed-term employment.

On a final note, there are two shortcomings of the analysis in this paper that are beyond our control. The first is that all of our results are obtained in a world where

casual employment exists. We are unable to predict what would happen if casual employment were proscribed. Will all casual employees immediately become permanent employees, or will they end up on the unemployment queue? Because this question cannot be answered we doubt the discussion about the consequences of casual employment will ever end. The second shortcoming is that the observation window of our data coincides with a period of sustained and strong economic growth in Australia. Would our findings be any different if the economy enters a severe and prolonged recession? We can only speculate about the answer, but if the current bleak economic outlook materialises, sufficient data will become available within the next few years to answer this question.

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Table 1. Averaged year-to-year labour market transitions (%): Persons aged 15 to 64 years

	Labour market status, wave t+1					
Labour market status, wave t	*Casual employee*	*Permanent employee*	*Fixed-term contract*	*Self-employed*	*Unem-ployed*	*Not in labour force*
Casual employee	55.0	21.9	4.8	3.3	4.0	11.0
Permanent employee	4.7	82.8	5.2	2.3	1.1	4.0
Fixed-term contract	6.3	46.9	36.7	3.9	2.3	3.9
Self-employed	4.3	5.6	1.77	81.8	1.1	5.2
Unemployed	26.2	15.4	4.2	2.7	25.9	25.8
Not in labour force	8.5	5.1	1.2	2.5	5.2	77.6

Note: All rows sum to 100%. Data are weighted using responding person population weights at time *t*.

Table 2. Labour market transitions, 2001 to 2005 (%): Persons aged 15 to 64 years

	Labour market status 2005					
Labour market status 2001	*Casual employee*	*Permanent employee*	*Fixed-term contract*	*Self-employed*	*Unem-ployed*	*Not in labour force*
Casual employee	29.7	41.8	7.4	5.3	2.8	13.0
Permanent employee	6.21	75.4	4.8	4.9	1.4	7.5
Fixed-term contract	6.7	56.4	25.4	4.0*	1.6*	6.0
Self-employed	4.4	12.4	2.9	71.4	0.5*	8.5
Unemployed	23.4	29.4	5.3*	4.0*	15.6	22.3
Not in labour force	14.1	14.8	3.5	4.3	3.1	59.4

Notes: All rows sum to 100%. Data are weighted using responding person longitudinal weights.
* denotes estimate based on a small cell size (n<20) and so should be treated with caution.

Table 3. Dynamic MMNL estimates with unobserved heterogeneity: Females (standard errors in brackets)

	Coefficients (Model with Random Effects)				*Mean Marginal Effects*				
	C	*P*	*F*	*SE*	*C*	*P*	*F*	*SE*	*NE*
Melbourne	0.055	-0.053	0.262	0.461	0.002	-0.017	0.010	0.013	-0.007
	[0.151]	[0.161]	[0.224]	[0.258]					
Brisbane	-0.003	0.119	0.145	0.427	-0.008	0.004	0.002	0.011	-0.009
	[0.181]	[0.192]	[0.259]	[0.295]					
Adelaide	-0.118	-0.527*	-0.083	-0.636	0.012	-0.038	0.011	-0.012	0.027
	[0.205]	[0.233]	[0.293]	[0.477]					
Perth	-0.338	-0.633*	-0.567	-0.140	-0.004	-0.034	-0.004	0.005	0.037
	[0.222]	[0.215]	[0.307]	[0.330]					
Other major city	0.110	-0.272	-0.339	0.480	0.018	-0.026	-0.008	0.017	-0.001
	[0.180]	[0.195]	[0.285]	[0.335]					
Inner regional	0.140	-0.292*	0.027	0.400*	0.019	-0.036	0.006	0.013	-0.002
	[0.130]	[0.141]	[0.198]	[0.225]					
Outer regional / remote	0.027	-0.560*	-0.162	0.587*	0.018	-0.055	0.005	0.024	0.008
	[0.161]	[0.177]	[0.239]	[0.274]					
Actual years work experience / 10	0.501*	0.790*	0.647*	0.605*	0.001	0.004	0.000	0.001	-0.005
	[0.071]	[0.082]	[0.116]	[0.114]					
Last yr of school not AU, UK, or NZ	-0.700*	-0.589*	-0.774*	-0.481	-0.032	-0.012	-0.009	-0.003	0.055
	[0.190]	[0.204]	[0.291]	[0.287]					
Aged below 25	1.384*	1.570*	1.226*	-0.081	0.060	0.070	-0.001	-0.026	-0.104
	[0.190]	[0.216]	[0.304]	[0.398]					
Aged between 25 and 35	0.373*	0.561*	0.476*	0.231	0.008	0.027	0.002	-0.002	-0.035
	[0.143]	[0.153]	[0.214]	[0.227]					
Aged 55 or above	-1.964*	-2.505*	-2.776*	-1.777*	-0.069	-0.106	-0.026	-0.013	0.215
	[0.167]	[0.182]	[0.293]	[0.254]					
Partnered	-0.413*	-0.138	-0.331*	0.404*	-0.032	0.006	-0.007	0.015	0.018
	[0.120]	[0.130]	[0.169]	[0.229]					
Lone parent	-0.435*	-0.459*	-0.716*	-1.032*	-0.012	-0.005	-0.010	-0.019	0.046
	[0.170]	[0.203]	[0.301]	[0.421]					
Has a university degree	0.629*	1.382*	1.998*	1.319*	-0.017	0.052	0.039	0.017	-0.091
	[0.123]	[0.139]	[0.194]	[0.210]					
Has other post-school diploma	0.284*	0.810*	1.330*	0.452	-0.016	0.029	0.032	0.000	-0.046
	[0.131]	[0.154]	[0.214]	[0.239]					
Completed year 12 only	0.654*	0.797*	1.016*	0.440	0.019	0.024	0.015	-0.002	-0.057
	[0.127]	[0.146]	[0.218]	[0.257]					
Children 0 to 4 present	-0.967*	-1.380*	-1.564*	-0.502*	-0.027	-0.061	-0.018	0.007	0.099
	[0.123]	[0.130]	[0.192]	[0.208]					
Children 5 to 9 present	0.373*	0.353*	0.380*	0.179	0.016	0.010	0.003	-0.001	-0.028
	[0.115]	[0.123]	[0.171]	[0.177]					
Children 10 to 14 present	0.234*	0.202	0.352*	0.154	0.010	0.001	0.007	0.000	-0.018
	[0.112]	[0.128]	[0.171]	[0.192]					
Casual in 2001	2.327*	2.459*	2.151*	0.820*	0.112	0.095	0.006	-0.022	-0.191
	[0.194]	[0.209]	[0.293]	[0.335]					
Permanent in 2001	1.847*	4.099*	2.797*	1.187*	-0.012	0.328	-0.006	-0.034	-0.276

	[0.224]	[0.257]	[0.324]	[0.356]					
Fixed-term in 2001	2.217*	3.637*	4.699*	0.348	0.000	0.127	0.124	-0.047	-0.204
	[0.324]	[0.337]	[0.431]	[0.614]					
Self-employed in 2001	0.953*	1.218*	1.108*	4.801*	-0.032	-0.046	-0.013	0.262	-0.171
	[0.313]	[0.356]	[0.471]	[0.468]					
Unemployed in 2001	0.686*	0.997*	0.712*	0.205	0.018	0.052	-0.002	-0.009	-0.059
	[0.237]	[0.285]	[0.377]	[0.494]					
Casual in t-1	1.768*	1.415*	1.514*	1.232*	0.097	0.023	0.009	0.006	-0.135
	[0.138]	[0.148]	[0.240]	[0.252]					
Permanent in t-1	0.599*	2.426*	1.733*	0.613*	-0.053	0.197	0.004	-0.017	-0.130
	[0.151]	[0.141]	[0.230]	[0.259]					
Fixed-term in t-1	0.921*	2.342*	2.506*	1.378*	-0.035	0.119	0.036	0.003	-0.123
	[0.255]	[0.237]	[0.303]	[0.460]					
Self-employed in t-1	0.875*	0.930*	1.744*	2.310*	0.010	-0.016	0.039	0.067	-0.100
	[0.247]	[0.268]	[0.347]	[0.253]					
Unemployed in t-1	0.847*	1.112*	1.521*	0.386	0.020	0.033	0.028	-0.008	-0.074
	[0.169]	[0.201]	[0.312]	[0.391]					
Constant	-3.096*	-4.681*	-6.486*	-6.311*					
	[0.216]	[0.273]	[0.444]	[0.474]					
Standard deviation of μ_i	1.440*	1.956*	1.904*	2.155*					
	[0.102]	[0.146]	[0.176]	[0.195]					
Correlations (rho)									
(C&P) / (C&F) / (C&SE)	-0.71	-0.58	-0.32						
(P&F) / (P&SE)	0.67	0.32							
(F&SE)	0.34								
N (individuals x years)	15564								
Log likelihood	-11917.6								
LR chi-squared (Pr > chi-squared)	26263.47	(0.00)							

Note: * denotes significance at the .05 level in a two-tailed test.

Table 4. Average predicted probabilities (%) based on dynamic MMNLs: Females

	Model I (without Random Effects)					*Model II (with Random Effects)*				
	C	*P*	*F*	*SE*	*NE*	*C*	*P*	*F*	*SE*	*NE*
Average predicted probability (all females)	15.5	38.2	5.6	8.4	32.3	21.1	37.6	5.2	7.7	28.5
Actual proportion in waves 2 to 5	15.5	38.2	5.6	8.4	32.3	15.5	38.2	5.6	8.4	32.3
State at t-1										
Unemployed	19.0	22.9	7.3	4.1	46.6	25.8	33.1	7.6	6.0	27.6
Casual	45.2	23.5	5.2	5.4	20.7	34.3	31.6	5.6	7.6	21.0
Permanent	7.9	69.3	5.1	2.4	15.3	18.1	48.5	5.0	5.3	23.1
Fixed-term	10.8	42.7	24.5	4.1	18.0	20.2	42.9	8.6	7.4	21.0
Self-employed	12.6	12.9	4.7	49.2	20.5	24.5	27.6	8.4	14.7	24.8
Not in LF	13.6	13.7	3.1	4.6	65.0	22.2	28.0	4.5	6.7	38.5

Table 5. Dynamic MMNL estimates with unobserved heterogeneity: Males (standard errors in brackets)

	Coefficients (Model with Random Effects)				*Mean Marginal Effects*				
	C	*P*	*F*	*SE*	*C*	*P*	*F*	*SE*	*NE*
Melbourne	-0.572*	-0.295	-0.141	-0.415	-0.024	0.000	0.009	-0.005	0.021
	[0.204]	[0.180]	[0.240]	[0.282]					
Brisbane	-0.294	-0.037	-0.183	-0.038	-0.017	0.012	-0.006	0.003	0.008
	[0.227]	[0.214]	[0.286]	[0.306]					
Adelaide	-0.192	-0.345	-0.087	-0.173	0.000	-0.023	0.009	0.002	0.012
	[0.247]	[0.237]	[0.316]	[0.373]					
Perth	-0.219	0.002	0.236	-0.181	-0.015	0.002	0.015	-0.006	0.004
	[0.287]	[0.260]	[0.347]	[0.381]					
Other major city	-0.314	-0.273	-0.587*	-0.494	-0.004	0.009	-0.015	-0.009	0.019
	[0.257]	[0.230]	[0.306]	[0.343]					
Inner regional	-0.528*	-0.615*	-0.478*	-0.437	-0.009	-0.023	0.002	0.001	0.029
	[0.179]	[0.166]	[0.225]	[0.250]					
Outer regional / remote	-0.009	-0.441*	0.023	-0.230	0.016	-0.043	0.017	-0.001	0.010
	[0.215]	[0.207]	[0.266]	[0.309]					
Actual years work experience / 10	0.283*	0.424*	0.568*	0.561*	0.000	0.001	0.001	0.001	-0.002
	[0.106]	[0.096]	[0.131]	[0.144]					
Last yr of school not AU, UK, or NZ	-0.353	-0.476*	-0.880*	-0.675	0.003	0.001	-0.021	-0.010	0.027
	[0.250]	[0.223]	[0.308]	[0.345]					
Aged below 25	1.822*	1.461*	2.060*	0.174	0.064	0.009	0.047	-0.046	-0.074
	[0.270]	[0.256]	[0.365]	[0.450]					
Aged between 25 and 35	1.083*	1.076*	1.406*	0.928*	0.020	0.010	0.024	-0.001	-0.053
	[0.221]	[0.203]	[0.265]	[0.283]					
Aged 55 or above	-1.227*	-2.394*	-2.845*	-2.079*	0.025	-0.099	-0.044	-0.017	0.136
	[0.249]	[0.227]	[0.323]	[0.312]					
Partnered	0.355*	0.522*	0.458*	0.895*	-0.004	0.012	-0.001	0.020	-0.027
	[0.145]	[0.136]	[0.180]	[0.199]					
Has a university degree	0.379*	0.891*	1.501*	0.982*	-0.024	0.011	0.042	0.011	-0.039
	[0.164]	[0.153]	[0.216]	[0.234]					
Has other post-school diploma	0.096	0.369*	0.403	0.331	-0.012	0.016	0.006	0.003	-0.013
	[0.153]	[0.145]	[0.217]	[0.222]					
Completed year 12 only	0.387*	0.603*	0.936*	0.651*	-0.006	0.005	0.023	0.006	-0.028
	[0.167]	[0.169]	[0.232]	[0.300]					
Children 0 to 4 present	0.211	0.070	0.043	0.420	0.008	-0.009	-0.004	0.013	-0.009
	[0.198]	[0.178]	[0.224]	[0.224]					
Children 5 to 9 present	-0.144	-0.017	-0.138	0.215	-0.010	0.003	-0.006	0.011	0.002
	[0.171]	[0.164]	[0.219]	[0.204]					
Children 10 to 14 present	0.374*	0.146	0.028	0.227	0.019	-0.003	-0.007	0.003	-0.012
	[0.157]	[0.150]	[0.199]	[0.205]					
Casual in 2001	1.948*	1.620*	1.759*	1.295*	0.062	0.016	0.015	-0.008	-0.086
	[0.255]	[0.278]	[0.354]	[0.452]					
Permanent in 2001	1.645*	3.354*	2.631*	1.873*	-0.041	0.226	0.006	-0.025	-0.166
	[0.305]	[0.355]	[0.404]	[0.451]					
Fixed-term in 2001	1.444*	3.142*	4.413*	2.548*	-0.065	0.046	0.134	-0.007	-0.109

	[0.445]	[0.438]	[0.531]	[0.595]					
Self-employed in 2001	1.294*	1.439*	1.971*	6.332*	-0.068	-0.211	-0.018	0.448	-0.151
	[0.419]	[0.421]	[0.559]	[0.640]					
Unemployed in 2001	0.573*	0.440	0.182	0.383	0.021	0.012	-0.011	0.001	-0.023
	[0.232]	[0.254]	[0.386]	[0.492]					
Casual in t-1	2.265*	2.227*	1.845*	0.930*	0.067	0.071	-0.001	-0.035	-0.101
	[0.178]	[0.207]	[0.310]	[0.317]					
Permanent in t-1	1.478*	3.714*	2.407*	1.213*	-0.061	0.311	-0.012	-0.065	-0.173
	[0.200]	[0.200]	[0.311]	[0.306]					
Fixed-term in t-1	0.889*	2.564*	2.391*	0.688	-0.049	0.140	0.028	-0.043	-0.077
	[0.347]	[0.289]	[0.397]	[0.444]					
Self-employed in t-1	1.568*	2.109*	1.627*	2.498*	-0.001	0.059	-0.012	0.047	-0.094
	[0.311]	[0.303]	[0.438]	[0.338]					
Unemployed in t-1	1.464*	1.250*	1.429*	0.425	0.046	0.019	0.019	-0.027	-0.057
	[0.194]	[0.216]	[0.371]	[0.358]					
Constant	-3.597*	-4.232*	-6.504*	-6.265*					
	[0.329]	[0.322]	[0.501]	[0.541]					
Standard deviation of μ_i	1.269*	1.424*	1.823*	2.184*					
	[0.131]	[0.147]	[0.189]	[0.203]					
Correlations (rho)									
(C&P) / (C&F) / (C&SE)	-0.62	-0.66	-0.28						
(P&F) / (P&SE)	0.14	0.14							
(F&SE)	0.04								
N (individuals x years)	13764								
Log likelihood	-9401.39								
LR chi-squared (Pr > chi-squared)	25501.82	(0.00)							

Note: * denotes significance at the .05 level in a two-tailed test.

Table 6. Average predicted probabilities (%) based on dynamic MMNLs: Males

	Model I (no RE)					*Model II (with RE)*				
	C	*P*	*F*	*SE*	*NE*	*C*	*P*	*F*	*SE*	*NE*
Average predicted probability (all males)	10.1	49.8	5.9	18.1	16.1	13.9	46.7	8.4	17.2	13.8
Actual proportion in waves 2 to5	10.1	49.8	5.9	18.1	16.1	10.1	49.8	5.9	18.1	16.1
State at t-1 (unconditional on initial state)										
Unemployed	21.6	26.5	7.7	11.6	32.6	24.2	32.2	12.2	15.6	16.0
Casual	36.4	34.5	7.5	8.8	12.9	27.0	38.3	10.1	14.7	10.0
Permanent	5.3	78.6	5.2	4.9	6.1	11.6	59.5	8.6	12.9	7.5
Fixed-term	7.4	48.2	26.1	7.5	10.9	12.2	47.5	14.4	13.8	12.1
Self-employed	8.5	17.0	3.7	62.0	8.8	18.0	36.3	8.7	26.1	10.8
Not in LF	10.6	16.4	4.5	11.4	57.1	15.8	26.9	8.9	18.6	29.9

APPENDIX TABLES

Table 3A. Dynamic MMNL estimates without unobserved heterogeneity: Females (standard errors in brackets)

	C	*P*	*F*	*SE*
Melbourne	0.056	-0.031	0.214	0.332*
	[0.108]	[0.101]	[0.148]	[0.157]
Brisbane	0.016	0.115	0.149	0.245
	[0.126]	[0.118]	[0.178]	[0.185]
Adelaide	-0.068	-0.319*	-0.003	-0.374
	[0.143]	[0.141]	[0.200]	[0.245]
Perth	-0.271	-0.432*	-0.410*	-0.187
	[0.139]	[0.133]	[0.205]	[0.210]
Other major city	0.146	-0.159	-0.176	0.321
	[0.132]	[0.129]	[0.197]	[0.199]
Inner regional	0.139	-0.168*	0.055	0.284*
	[0.095]	[0.092]	[0.139]	[0.141]
Outer regional / remote	0.069	-0.329*	-0.078	0.367*
	[0.115]	[0.114]	[0.173]	[0.169]
Actual years work experience / 10	0.371*	0.525*	0.489*	0.411*
	[0.049]	[0.049]	[0.075]	[0.067]
Last yr of school not AU, UK, or NZ	-0.521*	-0.347*	-0.555*	-0.253
	[0.128]	[0.115]	[0.180]	[0.170]
Aged below 25	1.061*	1.110*	0.888*	-0.170
	[0.128]	[0.136]	[0.205]	[0.268]
Aged between 25 and 35	0.310*	0.409*	0.409*	0.202
	[0.102]	[0.099]	[0.147]	[0.146]
Aged 55 or above	-1.399*	-1.644*	-2.050*	-1.224*
	[0.118]	[0.111]	[0.198]	[0.155]
Partnered	-0.267*	-0.096	-0.196*	0.293*
	[0.086]	[0.083]	[0.117]	[0.140]
Lone parent	-0.300*	-0.351*	-0.453*	-0.778*
	[0.128]	[0.135]	[0.201]	[0.261]
Has a university degree	0.397*	0.818*	1.394*	0.888*
	[0.084]	[0.080]	[0.125]	[0.118]
Has other post-school diploma	0.088	0.411*	0.867*	0.293*
	[0.094]	[0.093]	[0.146]	[0.143]
Completed year 12 only	0.401*	0.439*	0.705*	0.302*
	[0.091]	[0.095]	[0.154]	[0.153]
Children 0 to 4 present	-0.611*	-0.798*	-0.962*	-0.318*
	[0.090]	[0.088]	[0.143]	[0.131]
Children 5 to 9 present	0.290*	0.295*	0.268*	0.140
	[0.084]	[0.085]	[0.125]	[0.123]
Children 10 to 14 present	0.150*	0.139	0.271*	0.067
	[0.084]	[0.085]	[0.122]	[0.125]
Casual in 2001	0.956*	0.978*	0.874*	0.334*
	[0.095]	[0.106]	[0.170]	[0.170]
Permanent in 2001	0.539*	1.498*	0.901*	0.466*
	[0.112]	[0.102]	[0.170]	[0.163]

Fixed-term in 2001	0.985*	1.563*	2.084*	0.239
	[0.205]	[0.183]	[0.222]	[0.332]
Self-employed in 2001	0.363*	0.465*	0.623*	1.555*
	[0.174]	[0.181]	[0.261]	[0.163]
Unemployed in 2001	0.262*	0.369*	0.274	0.027
	[0.147]	[0.160]	[0.260]	[0.299]
Casual in t-1	2.700*	2.123*	2.137*	1.558*
	[0.093]	[0.111]	[0.193]	[0.170]
Permanent in t-1	1.383*	3.839*	2.718*	1.203*
	[0.115]	[0.101]	[0.184]	[0.179]
Fixed-term in t-1	1.511*	3.118*	4.105*	1.565*
	[0.204]	[0.175]	[0.223]	[0.294]
Self-employed in t-1	1.272*	1.432*	1.942*	3.982*
	[0.181]	[0.190]	[0.280]	[0.155]
Unemployed in t-1	0.806*	1.053*	1.415*	0.307
	[0.145]	[0.163]	[0.265]	[0.323]
Constant	-2.705*	-3.640*	-5.247*	-4.475*
	[0.148]	[0.159]	[0.263]	[0.239]
N (individuals x years)	15564			
Log likelihood	-12138.8			
LR chi-squared (Pr > chi-squared)	18998.29	(0.00)		

Note: * denotes significance at the .05 level in a two-tailed test.

Table 5A. Dynamic MMNL estimates without unobserved heterogeneity: Males (standard errors in brackets)

	C	*P*	*F*	*SE*
Melbourne	-0.428*	-0.200	-0.080	-0.230
	[0.148]	[0.133]	[0.171]	[0.172]
Brisbane	-0.227	-0.009	-0.108	0.001
	[0.175]	[0.158]	[0.212]	[0.201]
Adelaide	-0.118	-0.237	-0.037	-0.026
	[0.182]	[0.174]	[0.223]	[0.224]
Perth	-0.177	0.020	0.175	-0.077
	[0.205]	[0.184]	[0.237]	[0.230]
Other major city	-0.210	-0.154	-0.388	-0.353
	[0.185]	[0.169]	[0.229]	[0.218]
Inner regional	-0.345*	-0.394*	-0.281	-0.271
	[0.134]	[0.122]	[0.163]	[0.155]
Outer regional / remote	-0.007	-0.318*	0.052	-0.109
	[0.154]	[0.147]	[0.190]	[0.182]
Actual years work experience / 10	0.264*	0.367*	0.459*	0.458*
	[0.080]	[0.072]	[0.098]	[0.090]
Last yr of school not AU, UK, or NZ	-0.220	-0.343*	-0.663*	-0.360
	[0.178]	[0.156]	[0.221]	[0.196]
Aged below 25	1.530*	1.230*	1.618*	0.249
	[0.200]	[0.189]	[0.261]	[0.298]
Aged between 25 and 35	0.942*	0.878*	1.076*	0.775*
	[0.170]	[0.154]	[0.201]	[0.194]
Aged 55 or above	-0.949*	-1.930*	-2.252*	-1.727*
	[0.178]	[0.157]	[0.227]	[0.189]
Partnered	0.280*	0.424*	0.396*	0.634*
	[0.109]	[0.100]	[0.132]	[0.130]
Has a university degree	0.253*	0.665*	1.210*	0.692*
	[0.122]	[0.111]	[0.150]	[0.141]
Has other post-school diploma	0.025	0.262*	0.298*	0.232
	[0.113]	[0.104]	[0.151]	[0.131]
Completed year 12 only	0.272*	0.447*	0.704*	0.473*
	[0.129]	[0.127]	[0.175]	[0.177]
Children 0 to 4 present	0.183	0.045	0.016	0.318*
	[0.147]	[0.133]	[0.168]	[0.159]
Children 5 to 9 present	-0.154	-0.026	-0.181	0.081
	[0.142]	[0.126]	[0.164]	[0.152]
Children 10 to 14 present	0.314*	0.144	0.044	0.140
	[0.124]	[0.115]	[0.151]	[0.142]
Casual in 2001	0.865*	0.671*	0.605*	0.533*
	[0.144]	[0.152]	[0.219]	[0.234]
Permanent in 2001	0.735*	1.607*	1.092*	1.031*
	[0.161]	[0.148]	[0.216]	[0.207]
Fixed-term in 2001	0.470	1.545*	2.012*	1.214*
	[0.305]	[0.240]	[0.284]	[0.318]
Self-employed in 2001	0.615*	0.808*	0.851*	2.268*
	[0.214]	[0.199]	[0.285]	[0.211]

Unemployed in 2001	0.231	0.077	-0.163	-0.134
	[0.158]	[0.170]	[0.275]	[0.277]
Casual in t-1	2.983*	2.606*	2.386*	1.466*
	[0.144]	[0.160]	[0.251]	[0.225]
Permanent in t-1	1.935*	4.546*	3.099*	1.849*
	[0.165]	[0.150]	[0.240]	[0.203]
Fixed-term in t-1	1.628*	3.345*	4.059*	1.655*
	[0.259]	[0.214]	[0.277]	[0.294]
Self-employed in t-1	1.872*	2.411*	2.196*	4.364*
	[0.226]	[0.210]	[0.318]	[0.203]
Unemployed in t-1	1.392*	1.226*	1.304*	0.707*
	[0.164]	[0.187]	[0.301]	[0.284]
Constant	-3.258*	-3.778*	-5.352*	-4.576*
	[0.237]	[0.231]	[0.342]	[0.306]
N (individuals x years)	13764			
Log likelihood	-9526.26			
LR chi-squared (Pr > chi-squared)	18100.45	(0.00)		

Note: * denotes significance at the .05 level in a two-tailed test.