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The Sources of Gender Differences in Rates of Job Dismissal

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Abstract

Empirical studies, especially in the US and UK, have consistently reported that rates of involuntary job separation, or dismissal, are significantly lower among female employees than among males. Only rarely, however, have the reasons for this differential been the subject of detailed investigation. In this paper household panel survey data from Australia are used that also find higher dismissal rates among men than among women. This differential, however, largely disappears once controls for industry and occupation are included. These findings suggest that the observed gender differential primarily reflects systematic differences in the types of jobs into which men and women select.

1. Introduction

Gender differences in labour mobility, both within and across firms, have been the subject of considerable research. There is also a much larger body of research concerned with gender differences in labour market behaviour and outcomes. Much of this literature has focused on earnings, although labour force participation, unemployment, hiring and promotion have also been examined. One aspect that has received relatively little attention from either research strand is gender differences in involuntary job loss. This is potentially an important dimension for understanding differences between men and women in their labour market behaviour and experiences. In particular, a consistent empirical regularity, observed in data from many countries, is that men have a substantially higher rate of dismissal from employment than women. The question that perhaps most obviously follows from this observation is whether it represents a compensating differential that helps to explain the well known gender pay gap. That is, could it be that women tend to choose jobs with lower wages, at least in part compensated by lower layoff risks? Or does the lower dismissal rate reflect other factors, such as differences in the characteristics of male and female employees, or indeed employer discrimination in favour of women?

In this paper, we draw on the Household, Income and Labour Dynamics in Australia (HILDA) Survey data collected over the 2001-2009 period to consider the roles of alternative potential explanations. In common with findings of studies drawing on other data sources, these data show that men have a considerably higher rate of job loss, with the proportion of employees dismissed or made redundant each year approximately 45% higher for male employees than for female employees. We hypothesise that the higher rate of involuntary job loss among men could be the result of differences between men and women in the characteristics of those who choose to participate in the labour market, differences in job choices and/or differences in employer treatment of observationally similar men and women.

We investigate the issue by estimating random effects probit models of the probability of job loss in the next year as a function of a wide range of demographic and job-related characteristics. Compared with previous studies, we are able to control for a much broader array of factors, including personal characteristics such as personality, and employment-related characteristics such as detailed occupation and

industry category. Ours is also one of the few studies to relax the 'pooling restriction', allowing effects of demographic and job characteristics to differ for men and women and thus decomposition of the differences in male and female dismissal rates. Estimates we obtain indicate that the higher rate of job loss for men has little to do with differences in observable characteristics of men and women, and, consistent with the compensating differential hypothesis, is largely explained by differences in the types of jobs men and women have. In particular, differences in the industry and occupation composition of male and female employment account for much of the difference in dismissal rates.

The plan of the paper is as follows. In the next section we summarize relevant previous research in this area (broadly defined). In Section 3 we describe the data and present descriptive information on rates of job dismissal, while in Section 4 we elaborate on the conceptual framework that underpins our empirical analysis of the sources of gender differences in dismissal rates. Results of random effects probit models are presented in Section 5, and in Section 6 decomposition analysis that relaxes the pooling restriction is undertaken. Section 7 concludes.

2. Previous Research

The seminal work on the relationship between involuntary separations and gender is that of Blau and Kahn (1981). They used data from the 1966 and 1968 cohorts of the National Longitudinal Survey (persons in the US aged between 14 and 24) to estimate probit models of the probability of permanent layoff disaggregated by both sex and race. They found that the unadjusted rate of layoff for males was close to double that of females. Further, this gap actually increased once other personal and labour market characteristics were controlled for.

Until recently, this finding largely went unchallenged, with most research that has touched on this issue, usually only in passing, also reporting evidence that women are much less susceptible to involuntary separations than are men. Included here are: studies of workers from single firms (Barrick, Mount and Strauss 1994; Giulano, Levine and Leonard 2006; Stumpf and Dawley 1981; Wells and Muchinsky 1985); studies of non-representative samples of workers but employed across many firms (Campbell 1997; Theodossiou 2002); studies employing representative population-based samples, including in Australia

(McGuinness and Wooden 2009), Brazil (Orellano and Picchetti 2005), Canada (Picot, Lin and Pyper 1998), the UK (Booth, Francesconi and Garcia-Serrano 1999), and the US (Freeman 1980; Keith and McWilliams 1999); and studies using firm-level data (Antcliff and Saundry 2009; Balchin and Wooden 1995).

A very different result, however, was reported by Booth and Francesconi (2000). Using longitudinal data from the British Household Panel Survey covering the period 1991 to 1996, they reported evidence that female employees were significantly more likely to be laid off than men (a 7% annual layoff rate for women compared with 6.3% for men), and that this differential was not much affected by the inclusion of controls for individual and job characteristics. This finding is especially surprising given the authors' earlier work drawing on the same data source (Booth et al. 1999), but admittedly using retrospective work history data collected at one point in time rather than prospective longitudinal data, obtained conclusions that were entirely consistent with the original finding of Blau and Kahn (1981). The sample used by Booth and Francesconi (2000) in obtaining their results, however, was unusual in that it both restricted the sample to persons in full-time employment, thus excluding many female employees, and much more importantly, excluded all job to non-employment transitions. In other words, the only cases of involuntary separation that were retained were those where the laid off worker had secured alternative employment by the time of the next survey interview. The restriction to full-time workers was defended on the (quite reasonable) grounds that the authors were only interested in the behaviours of workers with a strong attachment to the labour market. In contrast, no rationale for the exclusion of job to non-employment transitions was provided, and in our view this exclusion is difficult to defend — it almost certainly introduces a serious form of selection bias.

More challenging are the results reported by Goerke and Pannenberg (2010). Following Blau and Kahn (1981), they estimated probit models of dismissals, but using longitudinal data for West Germany that spanned a period of 20 years commencing in 1985 (though they were only able to use data from six time points within that period). The key feature of their analysis was the exploitation of the panel nature of the data in an attempt to better deal with time-invariant individual unobserved heterogeneity. This is potentially of large importance given the very limited number of control variables included in previous

research. Like Booth and Francesconi (2000) they restricted the sample, but only to private sector, prime-age, full-time workers. Further, and like much of the research in this space, their focus was not on gender per se; rather it was on the effects of trade unions (cf. Freeman 1980). Nevertheless, they included a gender dummy and in the pooled data model found that female employees in Germany were significantly more likely to be dismissed from their jobs than were male employees. This effect, however, declined in size and became statistically insignificant once correlated random effects were allowed for. Nevertheless, they are unable to find any evidence that male employees are more susceptible to dismissal than females.

Such findings suggest either that the conventional wisdom that female employees are less likely to be dismissed or laid off by their employers than male employees may not hold in all institutional settings, or that the relationship between involuntary separations and gender may be changing over time. This, in turn, suggests the need for new research using more recent data and conducted outside the US (and the UK). There is also a clear need for research with a more explicit focus on gender. It is not sufficient just to know the magnitude of any gender gap in separation rates and whether that gap is affected by the inclusion of controls. As in studies of the gender pay gap, it is also important to know how the separation rates of men and women are affected by different covariates. We, however, are only aware of a handful of studies that allow the covariates of involuntary separations to vary with gender (Blau and Kahn 1981; Booth et al. 1999; Booth and Francesoni 2000; Theodossiou 2002).

Of particular interest is the role of industry and occupation. It is widely recognised that occupational and industrial segregation continues to plays an important role in contributing to the gender pay gap in most industrial nations (e.g., Altonji and Blank 1999). Is it not, therefore, possible that this same segregation might also explain observable differences in involuntary separations? That is, women may select into industries and occupations where the risk of involuntary separation is relatively low. Previous research on gender differences in involuntary separation, however, have not given this issue serious attention, being content to control for the effects of industry and occupation segmentation through the inclusion of a small number of dummy variables.

3. Data and descriptive statistics

We use the HILDA Survey data to investigate job dismissals in Australia. Discussed in more detail in Wooden and Watson (2007) and Watson and Wooden (2010), the HILDA Survey is a household panel survey that began in 2001 with a large nationally representative sample of Australian household members occupying private dwellings. In wave 1, interviews were completed with 13,969 people aged 15 years and over in 7682 households. All members of responding households from wave 1 (n=19,194) form the basis of the panel to be followed over time, though interviews are only conducted with those household members aged 15 years or older. Interviews are conducted every year.

While the survey has a longitudinal design, it employs following rules that, with one caveat, are designed to ensure the sample maintains its cross-sectional representativeness over time. This is achieved by adding other people who join households in which original sample members reside. Most important here are children of original sample members. The one obvious weakness in the sample generation process is that immigrants who arrive in Australia after the initial sample was selected have relatively little chance of being included.

Information on dismissal from employment is obtained in every survey wave (since wave 2), by asking survey respondents who have changed employers or ceased working since the last interview for both the main reason they stopped working in the job held at the time of last interview and, if different to the job held at the last interview the main reason they left their most recent job. Responses are then coded against a set of pre-coded categories, one of which is: 'Got laid off / No work available / Retrenched / Made redundant / Employer went out of business / Dismissed etc.' This response option thus covers a number of scenarios, but all involve termination of employment that is not initiated by the employee.[1] The reference period is from the date of last interview to the date of current interview, which given the annual interviewing cycle will typically be around one year. There is, however, considerable variation around this;

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[1] Another response option is 'Job was temporary or seasonal', which could, in some cases, be interpreted as termination of employment initiated by the employer. However, employees will typically take these jobs knowing that they are short-term, and in some cases, and possibly most, will only desire short-term employment. We, therefore, exclude this response option from our definition of job dismissal in our main analysis. We do, however, subsequently test how robust our findings are to changes in the definition.

most notably in those cases where a respondent did not respond in one or more of the preceding waves. We have, therefore, excluded from all analyses reported in this paper any observations where a respondent was not interviewed in the wave immediately preceding the current wave. This ensures a more determinate time-frame for reports of dismissals.

As a crude check of the quality of the HILDA Survey data, Figure 1 compares estimated rates of dismissal obtained from the HILDA survey with those obtained from the cross-sectional Labour Mobility Survey conducted every two years by the Australian Bureau of Statistics (ABS). In its publication *Labour Mobility, Australia* (catalogue no. 6209.0), the ABS reports the number of people who in the 12 months to February of the relevant year "... ceased their last job because they were either: employees who were laid off, including no work available, made redundant, employer went out of business or dismissed; and self-employed people whose business closed down for economic reasons, including 'went broke', liquidated, no work, or no supply or demand". The HILDA Survey rate presented in Figure 1 is constructed so as to match as closely as possible the ABS approach. Thus, it measures the proportion of persons employed at some stage over the previous 12 months who left at least one job in that period, with the reason for leaving the last job being either "got laid off / no work available / retrenched / made redundant / employer went out of business / dismissed etc." or "self-employed: business closed down for economic reasons (went broke / liquidated / no work / not enough business)."

There are, however, still marked differences in the construction of the ABS and HILDA Survey estimates. The HILDA Survey measure relates to the period since last interview, which even for consecutive waves, can vary considerably — from as little as six months to as long as 18 months — although for most respondents it is very close to one year.[2] Furthermore, the HILDA Survey interview may have been conducted at any time between late August of the survey reference year and February of the following year. For example, the HILDA estimates for 2002 are based on reports in the wave 2 interview, which took place between late August 2002 and March of 2003, of dismissal since the wave 1 interview, which took place between late August 2001 and March of 2002. In contrast, the ABS estimates all relate to the 12

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[2] Persons who were not interviewed in the previous wave are excluded from Figure 1.

months up to February of the year following that indicated on the horizontal axis. For example, the estimates for 2002 are for the 12 months up to February 2003.

Figure 1 shows that the HILDA Survey data give consistently higher rates of dismissal than the ABS data. Nonetheless, the patterns over time and across genders are quite similar for the two data sources. Dismissal rates declined up to around 2007 and then increased sharply in 2009, and both data sources show the male rate of dismissal to be consistently higher than the female rate.

In the remaining analysis presented in this paper, we exclude the self-employed and employers, since the concept of job dismissal we seek to investigate applies only to employees. We also restrict our focus to dismissals from the main job held at the time of previous interview, since detailed information is only collected about jobs held at the time of interview.[3]

Figure 1: ABS and HILDA rates of job dismissal among employed persons
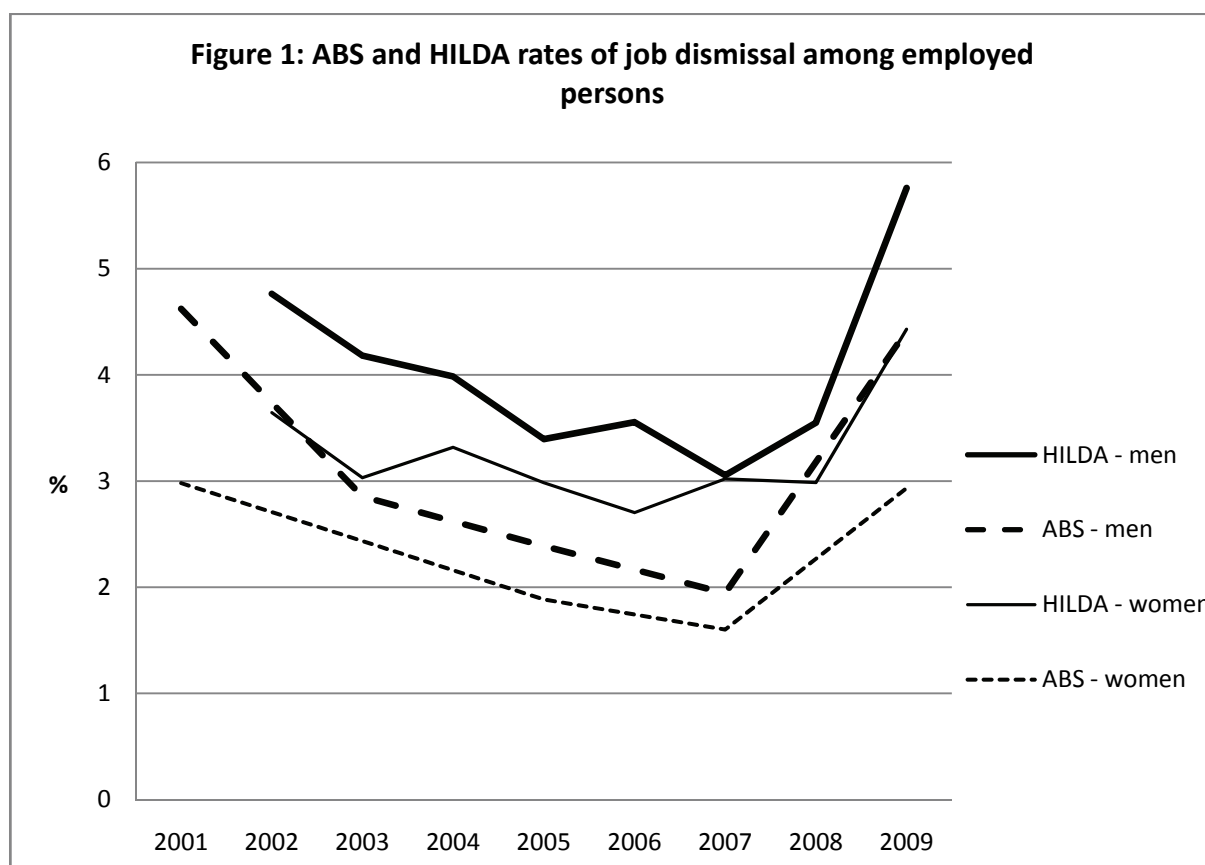
NOTES: The source for ABS estimates is ABS, *Labour Mobility, Australia*, Catalogue No. 6209.0, various issues. Dismissal rates are expressed as a percentage of people who had been employed in the preceding year, and relate only to the most-recently-ceased job. For the ABS data, dismissal rates are for the 12 months commencing in February of the indicated year. For the HILDA Survey data, dismissal rates are for the approximate 12 months preceding interview, which is most usually in the fourth quarter of the indicated year.

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[3] Inclusion of dismissals from jobs other than the main job held at the time of the previous interview raises the average annual dismissal rate among employees by approximately 0.4 percentage points.

Figure 2 presents estimates of dismissal rates for the definition and population that are the focus of this study. Specifically, for each wave, it presents the proportion of employees dismissed from their main job by the time of interview at the next survey wave. Approximately 5.3 per cent of males who were employees in wave 1 (i.e., 2001) were dismissed from their main job at some stage prior to being interviewed in wave 2. This dismissal rate fell to as low as 3.1 per cent for the year following wave 7, before increasing sharply to 6.7 per cent for the wave 8 to wave 9 interval. For females, the corresponding dismissal rate fell from 4.1 per cent in wave 1 to 2.8 per cent in wave 7, before increasing to 5.6 per cent in wave 8. Despite the exclusion of dismissals from jobs other than the main job held at the time of interview, for men these dismissal rates tend to be higher than those presented in Figure 1. This is because the self-employed, included in the estimates presented in Figure 1 but excluded from Figure 2, have relatively low rates of 'dismissal'.

Figure 2: Annual rates of dismissal from main job held at time of annual interview - Male and female employees
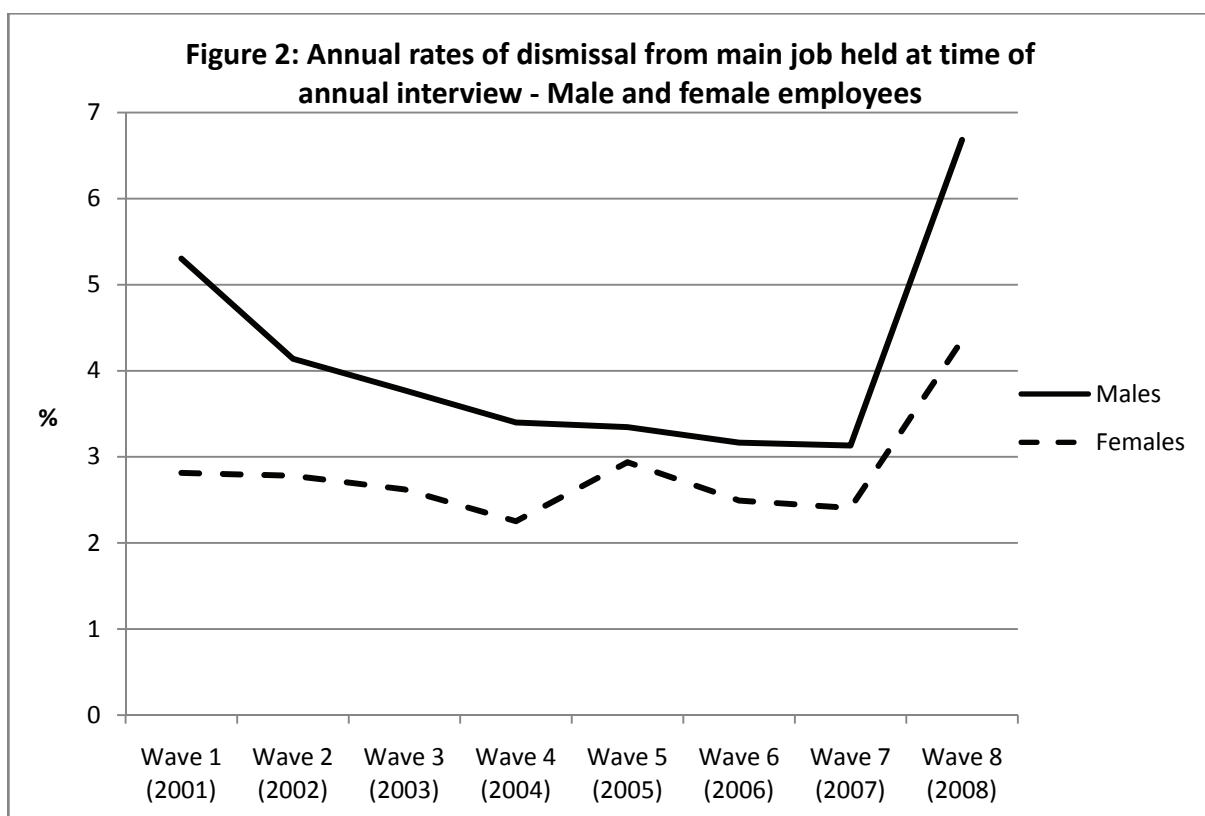
Table 1 compares average annual dismissal rates for men and women over the 2001 to 2009 period as a whole and disaggregated by age, full-time/part-time status, type of employment contract, firm size and sector. The average difference in the annual rate of dismissal over the HILDA Survey sample period is

approximately 1.3 percentage points. While not a large gap in absolute terms, the quite low probability of dismissal in any given year (irrespective of sex) means that this translates to a 46 per cent higher probability of dismissal for males. The relative risk of dismissal is, therefore, much higher for males.

Disaggregation by age and by employment characteristics indicates that the male-female differential is not confined to a narrow group of employees. While there are significant variations in dismissal rates by age, employment status, type of employment contract, firm size and sector, the male-female gap is at least 1.1 percentage points for all groups, and is as large as two percentage pointsin the case of casual employees. This would seem to provide some tentative evidence that the difference is not likely to be attributable to differences in either the composition of male and female employment or in the types of jobs in which men and women are employed. Of course, Table 1 considers differences in dismissal rates only across a small number of personal and job characteristics; most notably, differences by occupation and industry are not reported.

Table 1: Annual rates of job dismissal from main job held at time of annual interview — Employees, 2001-2009 (pooled) (%)

	Males	Females	Male-female ratio
Age group (years)			
15-24	5.0	3.4	1.47
25-44	3.9	2.8	1.39
45-54	3.8	2.5	1.52
55+	4.1	2.8	1.46
Employment status			
Part-time (usual weekly work hours <35)	4.8	3.1	1.55
Full-time ((usual weekly work hours 35+)	4.0	2.6	1.54
Type of employment contract			
Permanent/ongoing	3.6	2.4	1.50
Fixed-term	4.4	2.7	1.63
Casual	6.1	4.1	1.49
Firm size			
< 20 employees	6.0	4.4	1.36
20-99 employees	4.7	3.3	1.42
100+ employees	3.2	2.1	1.52
Sector			
Public	3.2	1.8	1.78
Private	4.7	3.7	1.27
Total	4.1	2.8	1.46

4. A conceptual framework for explaining the differences in dismissal rates

The differences in the dismissal rates between male and female employees evident in the HILDA Survey data, and found in other Australian and international data sources, lead to the obvious question of why they exist. Potential reasons for the differential can be usefully classified as falling into one of three broad classes of explanation: (1) differences in the characteristics of male and female employees; (2) differences in the job choices of male and female labour market participants; and (3) differences in employer behaviour towards similar male and female employees.

The first hypothesized reason could involve females who are relatively likely to be dismissed (e.g., those with low skills or poor health) being less likely to participate in the labour market than similar males. It could also involve females more generally tending to have characteristics, such as personality traits, that translate into behaviour making dismissal less likely. For example, women may tend to be more conscientious than men. These types of factors have been implicitly considered in the studies that control for personal characteristics, such as Blau and Kahn (1981), Booth et al. (1999), Booth and Francesconi (2000) and Theodossiou (2002), although no previous study has controlled for personality. Factors commonly considered include age, educational attainment, work experience and ethnicity/race. Characteristics such as these may matter because they translate to differences in job performance and/or other behaviour in employment, and because they may be associated with differences in employer behaviour (e.g., employers may be more prepared to fire young workers).

Differences between men and women in characteristics will potentially include 'unobservable' characteristics. One interpretation of such differences is that men and women are 'inherently different', and therefore perform or behave differently even when they have the same observable characteristics. That men have a higher rate of dismissal implies that, if this explanation plays a role, men are more likely to shirk, underperform or engage in other behaviours provoking dismissal than are women of the same age, health, educational attainment, and so on. Balchin and Wooden (1995) suggest this as an explanation for their finding that the rate of dismissal was decreasing in the proportion of a firm's work force that is female, hypothesising that female workforces are more compliant.

The second potential explanation, differences in job choices, would involve women tending to choose jobs with lower risks of dismissal (e.g., jobs in the public sector). Women may be more averse to jobs with greater dismissal risks because of differences in the expected costs and benefits of jobs with greater dismissal probabilities. For example, costs of dismissal may be higher for women if they are more constrained in the distance they can travel to work due to family responsibilities. Women may also have different preferences, including attitudes to risk, leading to greater preference for jobs with less risk of dismissal. Indeed, numerous studies have found a gender pay gap favouring men, a gap that could in theory reflect compensation for non-wage attributes, such as a lesser degree of hours flexibility, greater travel to work times, greater health and safety risks and, of course, less job security.

Potentially relevant employment-related characteristics most obviously include occupation, industry and sector, since there are likely to be systematic differences across occupations, industries and sectors in rates of dismissal, reflecting the varying nature of demand conditions faced by employers. Other potentially important factors include the type of employment contract, the number of hours worked, the timing of work hours, the size of the employer, the length of the employee's job tenure, and the employee's wage rate. Ex ante, one would expect job dismissal to be less prevalent among permanent or ongoing staff, among full-time workers, and in larger firms. Blau and Kahn (1981) further postulate that, all else equal (including the employee's marginal product), the higher the wage, the greater the probability of dismissal. With regards to job tenure, they suggest it may be negatively associated with dismissal because those with longer tenure are likely to have higher levels of firm-specific human capital, which is a source of joint surplus from the employment relationship.[4] Blau and Kahn also argue that dismissal probabilities are increasing in the 'replaceability' of the employees, which might suggest that working irregular hours and at non-standard times of the day and week reduces the likelihood of dismissal given it is harder to find workers prepared to work those hours. While not a job characteristic per se, the local unemployment rate may also provide an indication of the replaceability of employees and/or the employer's demand conditions, and thus would be expected to be positively associated with the dismissal rate.

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[4] Blau and Kahn also acknowledge that tenure may, in part, capture an unobserved individual fixed effect, with those less prone to dismissal tending to have longer tenures.

The third potential explanation, differences in employer propensity to dismiss men and women, could arise from factors such as societal norms and fears of being accused of discrimination. This potential source of difference in dismissal rates is difficult to separately identify from the effects of differences in unobservable characteristics, since it is observationally indistinguishable without direct information on employee job performance. However, having rich information on employees' characteristics reduces the scope for unobserved characteristics to be responsible for differences between men and women in dismissal rates. If we also have a sufficiently rich set of covariates for employment-related characteristics, it is likely that employer behaviour is the source of any difference in the dismissal rate that remains once personal and employment-related characteristics are controlled for. The HILDA Survey collects considerable information about both personal and employment related characteristics, so that a finding of such a 'residual' difference in the dismissal rate could quite reasonably be attributed to employer discrimination against males.

5. Models of the determinants of dismissal

Methods

We estimate probit models of the probability of dismissal of employees, taking advantage of the panel structure of the data to control for unobserved individual heterogeneity by adopting a random effects specification. An individual contributes an observation for each wave in which he is an employee, provided he is also a respondent in the next wave. Given nine waves of data, an individual can therefore contribute up to eight observations. The outcome variable is a dummy indicator equal to one in the current wave if the employee reports in the *next* wave that he or she was dismissed from the main job held in the current wave. All characteristics are evaluated in the current wave (rather than the wave in which dismissal was reported) to allow job characteristics to be tied to the job from which the employee was dismissed.

Reflecting the potential factors canvassed in Section 4, a wide variety of explanatory variables is included in the models. We distinguish personal characteristics from job or employment characteristics on

the basis that they conceptually capture distinct sources of differences in dismissal rates between men and women. We do this by estimating models with personal characteristics only, and then estimating models which also include job characteristics. When controlling for personal characteristics only, the estimate on the male dummy provides a measure of the difference in the dismissal probability that is not explained by differences in the characteristics of labour market participants. Controlling for both personal and job characteristics, the estimate on the male dummy provides a measure of the difference in the dismissal probability that is not explained by either the characteristics of labour market participants or the types of jobs they do.

Personal characteristics are captured by variables for age, educational attainment, work experience, health, disability, indigenous status and place of birth, personality, and household income. Work experience is equal to the number of years in employment since leaving full-time education for the first time. The health variable is the SF-36 measure of general health (Ware et al. 2000), which rates the respondent's health on a 0 to 100 scale based on responses to five subjective health-related questions, and is administered as part of a self-completion paper questionnaire (SCQ) that all respondents are asked to complete. Disability is captured by a dummy indicator for the presence of a long-term health condition, impairment or disability that restricts the respondent in everyday activities, and has lasted or is likely to last, for six months or more. The income variable is equivalized real disposable income of the household, where the equivalence scale used is the modified OECD scale (Haagenars et al. 1994).

Significantly, in waves 5 and 9, the SCQ contained a multi-item question designed to provide measures of the 'big five' personality traits — extroversion, agreeableness, conscientiousness, emotional stability and openness. The approach used is closely based on that used by Saucier (1994), and is described in more detail in Summerfield (2010). For the analysis presented in this paper, we assume personality is stable over the survey period[5] and set values for each of the five traits at the mean score across the two waves in which the questions were administered.

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[5] The data itself suggest this is a reasonable assumption, with rank order correlations over the two periods varying from 0.59 for the agreeableness scale up to 0.73 for extroversion.

Job or employment-related characteristics comprise variables for occupation, industry, sector (public or private), firm size (fewer than 20 employees, 20 to 99 employees, 100 or more employees), length of job tenure, type of employment contract (permanent / ongoing, fixed-term or casual), hours of work (part-time or full-time), timing of work hours (whether works weekends, nights and/or irregular hours) and the employee's wage (log real hourly wage). Two alternative specifications are estimated, one with broad occupation and industry categories, containing eight occupation groups and nine industry groups, and the other with more disaggregated occupation and industry categories, containing 40 occupation groups and 52 industry groups.[6]

Previous studies have only considered selection into occupations and industries in a very limited way. Blau and Kahn (1981) included just one occupation dummy and one industry dummy, Booth and Francesconi (2000) included four occupation dummies and no industry dummies, Theodossiou (2002) included four industry dummies and no occupation dummies, and Booth et al. (2000) included nine industry dummies and six occupation dummies. We consider the potential role of selection into occupations and industries in considerably more depth. The aggregated specification contains eight occupation dummies and nine industry dummies, while the disaggregated specification contains 40 occupation dummies and 52 industry dummies.

Blau and Kahn (1981) also identify 'replaceability' of employees as a factor positively affecting the layoff probability, which they attempt to capture by inclusion of the local unemployment rate. We likewise include such a variable in our estimated models, although only disaggregated to the level of capital city and balance of state. Also included in the models are wave dummies, which will capture macroeconomic conditions and other time-related macro factors.

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[6] Occupation is coded using the Australian and New Zealand Standard Classification of Occupation system (ANZSCO), First Edition, 2006 (ABS cat. no. 1220.0), while industry is coded using the Australian and New Zealand Standard Industrial Classification (ANZSIC), Second Edition, 2006 (ABS cat. no.1292.0). The broad groups are based on the 'one-digit' (most aggregated) categories in these classification schemes, and the detailed groups are based on the 'two-digit' (next-most aggregated) categories.

Results

Table 2 presents 'mean marginal effects' estimates, obtained by evaluating the marginal effect of each variable on the probability of dismissal for each observation in the sample and taking the mean of these effects over all observations. Specification (i) shows a one percentage point higher predicted probability of dismissal for males after controlling for personal characteristics, which is slightly less than the raw empirical difference of 1.3 percentage points. As might be expected, degree-level educational qualifications and greater work experience are associated with lower probabilities of dismissal, while poorer health is associated with a higher risk of dismissal. Conscientiousness has a negative effect on the likelihood of dismissal, while extroversion and openness to experience have positive effects, although the estimate for openness to experience is only significant at the ten per cent level. Point estimates furthermore show negative effects for agreeableness and emotional stability, but these are not statistically significant. Immigrant and indigenous employees have higher probabilities of dismissal, holding other personal characteristics constant, while no effect is evident for household income. Perhaps surprising is that no significant differences by age group are evident; however, employees with less than ten years of work experience are significantly more likely to be dismissed than more experienced employees, implying it is work experience, rather than age per se, that matters to likelihood if dismissal.

Table 2: Mean marginal effects estimates from random effects probit models of the probability of dismissal

	(i)		(ii)		(iii)	
	Estimate	SE	Estimate	SE	Estimate	SE
Personal characteristics						
Male	0.010**	0.0016	0.005**	0.002	0.003	0.0021
Age group ('15-24' omitted)						
25-34	-0.002	0.0026	-0.001	0.003	-0.001	0.003
35-44	0.000	0.0029	0.004	0.0033	0.004	0.0034
45-54	0.001	0.0029	0.009**	0.0034	0.008**	0.0035
55 or over	0.005	0.0033	0.015**	0.0039	0.015**	0.004
Educational attainment ('No post-school qualifications' omitted)						
Degree	-0.013**	0.0021	-0.004	0.0026	-0.003	0.0026
Other post-school qualification	-0.004**	0.0017	-0.002	0.0019	-0.002	0.002
Disabled	0.004*	0.0019	0.005**	0.0022	0.005**	0.0022
General health (SF-36)	-1.34E-04**	4.15E-05	-1.57E-04**	4.63E-05	-1.53E-04**	4.66E-05
Health missing	-0.003	0.0036	-0.005	0.0041	-0.005	0.0041
Extroversion	0.002**	0.0008	0.002**	0.0008	0.002**	0.0009
Agreeableness	-0.001	0.001	0.000	0.0011	0.000	0.0011
Conscientiousness	-0.002**	0.0009	-0.002**	0.0009	-0.002**	0.0009
Emotional stability	-0.001	0.0008	0.000	0.0009	0.000	0.0009
Openness to experience	0.002*	0.0008	0.001	0.0009	0.001	0.001
Personality measures missing	-0.004	0.0074	-0.001	0.0082	-0.001	0.0082
Immigrant and indigenous status ('Non-indigenous Australian-born' omitted)						
ESB immigrant	0.007**	0.0024	0.006**	0.0026	0.005**	0.0027
Indigenous or NESB immigrant	0.006**	0.0022	0.004*	0.0024	0.004	0.0024
Household equivalised income ($'000)	-2.96E-05	2.93E-05	-1.02E-05	3.36E-05	-2.53E-05	3.41E-05
Years of work experience ('<5' omitted)						
5 - <10	0.000	0.0028	0.001	0.0032	0.001	0.0032
10 - <20	-0.007**	0.003	-0.005	0.0033	-0.005	0.0033
20 - <30	-0.010**	0.0032	-0.005	0.0035	-0.005	0.0036
30+	-0.011**	0.0029	-0.008**	0.0032	-0.008**	0.0033
Experience missing	0.018**	0.0039	0.011**	0.0043	0.011**	0.0044
Job-related characteristics						
Union member			0.000	0.0021	0.002	0.0021
Job tenure (years)			-0.003**	0.0003	-0.003**	0.0003
Job tenure squared / 100			0.008**	0.001	0.008**	0.001
Part-time			0.000	0.0022	0.002	0.0022
Employment contract ('Permanent/ongoing' omitted)						
Fixed term			0.004	0.0027	0.005*	0.0027
Casual			0.009**	0.0022	0.010**	0.0022
Private sector			0.013**	0.0031	0.013**	0.0034
Firm size ('100+ employees' omitted)						
Fewer than 20 employees			0.009**	0.0020	0.008**	0.0020
20 - 99 employees			0.006**	0.0021	0.005**	0.0022
Firm size missing			0.012**	0.0039	0.012**	0.0039
Work on weekends			-0.002	0.0019	-0.001	0.0020
Work nights or irregular hours			-0.005**	0.0020	-0.004*	0.0021
Log hourly wage			0.005**	0.0016	0.004**	0.0016
Occupation ('Manager' omitted)						
Professional			-0.010**	0.0032		
Technician / trade			-0.004	0.0033		
Community and personal service			-0.003	0.0039	Contains 40 occupation	
Clerical and administrative			-0.005*	0.0032	dummies. See Appendix	
Sales			-0.006*	0.0037	Table A8 for estimates.	
Machinery operator / driver			-0.003	0.0038		
Labourer			-0.003	0.0034		

Table 2 continued

	(i)		(ii)		(iii)	
	Estimate	SE	Estimate	SE	Estimate	SE
Industry ('Agriculture, mining' omitted)						
Manufacturing			0.010**	0.0038		
Construction			0.012**	0.0042		
Wholesale and retail trade			-0.006	0.004	Contains 52 industry dummies. See Appendix Table A8 for estimates.	
Hospitality			0.001	0.0044		
Transport, communication			0.005	0.0042		
Professional services			0.003	0.0038		
Government, education, health			-0.021**	0.0041		
Arts, recreation and other services			0.000	0.0045		
Other factors						
Local unemployment rate	0.000	0.0007	-0.001	0.0008	0.000	0.0008
Wave 2	-0.005*	0.0026	-0.006*	0.003	-0.005*	0.003
Wave 3	-0.008**	0.0028	-0.021**	0.0042	-0.020**	0.0043
Wave 4	-0.008**	0.003	-0.021**	0.0044	-0.020**	0.0045
Wave 5	-0.010**	0.003	-0.022**	0.0044	-0.021**	0.0045
Wave 6	-0.012**	0.0033	-0.025**	0.0046	-0.024**	0.0048
Wave 7	-0.013**	0.0033	-0.027**	0.0047	-0.026**	0.0048
Wave 8	0.005	0.0031	-0.006	0.0045	-0.005	0.0046
Number of observations	49520					
Log likelihood	-7189.78		-6911.09		-6843.64	
ρ	0.179		0.083		0.080	
LR (ρ = 0)	108.09		24.23		22.07	

NOTES: *SE* – Standard error. *ρ* – Proportion of the total variance contributed by the panel-level variance component. *LR (ρ = 0)* – Likelihood-ratio test for ρ equal to zero (distributed as $\chi^2(1)$ under the null hypothesis—critical value at the 95 per cent level is 3.84). * and ** respectively indicate statistical significance at the 10 and 5 per cent levels.

Adding job-related characteristics with aggregated industry and occupation groupings (specification (ii)) reduces the gender gap in predicted probability of dismissal to 0.5 percentage points. This gap reduces further to a statistically insignificant 0.3 percentage points when the more disaggregated industry and occupation groupings are used. It would, therefore, seem that much of the gender gap is explicable by differences in the types of jobs chosen by men and women. As we might expect, the estimates for the industry and occupation dummies in specification (ii) show relatively high rates of dismissal in manufacturing and construction industries and relatively low rates in government, education and health industries and in professional occupations. Also as expected, employees in the public sector are much less susceptible to dismissal than their private sector counterparts. In terms of other job characteristics, all else equal, the probability of dismissal is higher for casual jobs, employees of small firms, and more highly paid employees, and lower for employees with longer job tenure (up to approximately 37 years, based on the estimates for tenure and tenure squared) and employees working nights or irregular hours. All of these findings are consistent with our a priori expectations outlined in Section 4. Contrary to expectations,

however, there is no evidence of a positive association with the local unemployment rate (though this possibly reflects the coarseness of the measure used).

Sensitivity tests

We examine the robustness of the findings presented in Table 2 by conducting several sensitivity tests, results of which are presented in Table 3. The table only presents the mean marginal effects estimates for the male dummy, with all other estimates presented in the Appendix.

The first sensitivity test adopts a broader definition of dismissal, redefining the term to also include employees who left the main job because it was temporary or seasonal. The second variation reported in Table 3 is motivated by the approaches taken by both Booth and Francesconi (2000) and Goerke and Pannenberg (2010), and restricts the sample to employees with a 'strong' attachment to the labour market, defined as those employed full-time and with at least two years work experience. Restricting to full-time employees with at least two years of work experience reduces the sample size by approximately 38 per cent. The third sensitivity test involves an alternative sample selection restriction: the exclusion of employees who voluntarily leave the job. Blau and Kahn (1981) employ this restriction, arguing that it is necessary given some quitters may have pre-empted imminent layoff. This restriction results in approximately 11 per cent of employees being excluded.

The fourth and fifth sensitivity tests reported in Table 3 test for panel attrition bias. Following Verbeek and Nijman (1992), the fourth test includes as a regressor the number of waves the sample member was a respondent. This variable, which can range from two to nine, was not statistically significant in any of the three specifications. However, Verbeek and Nijman's approach implicitly assumes each sample member could have responded in every wave, which is not the case for the HILDA Survey, in which panel members can be out of scope in some waves for reasons such as age (less than 15), migration and death. We therefore estimated an alternative model (the fifth sensitivity test reported in Table 3) which replaced the 'number of waves responded' variable with 'the proportion of in-scope waves in which the sample member responded'. This variable was indeed statistically significant, with the mean marginal effect estimate 0.044, 0.050 and 0.050 in the three respective specifications.

As is clear from Table 3, the mean marginal effects estimates on the gender dummy are almost completely unaffected by any of the variations considered. Controlling for personal characteristics only, males have an approximately one percentage point higher probability of dismissal in all specifications. Adding job characteristics with aggregated occupation and industry groups reduces this to 0.5 percentage points, while detailed occupation and industry categories further reduces it to 0.3 percentage points.

We also present, in the final row of Table 3, results from a 'pooled' probit model, which treats each observation as independent of all others. This provides information on the implications for the results presented in Table 2 of allowing for correlated random effects, giving the relatively standard result of a slightly larger estimate in specification (i), but having no perceptible effect on the estimates in specifications (ii) and (iii). The pooled probit results are also presented because the decompositions presented in Section 6 are conducted on pooled probit models due to the absence of techniques for decomposing random effects models.

Table 3: Sensitivity analysis: Mean marginal effect estimate for the 'male' dummy

	(i)		(ii)		(iii)	
	Estimate	SE	Estimate	SE	Estimate	SE
Main specification	0.010**	0.0016	0.005**	0.0020	0.003	0.0021
Broad definition of dismissal	0.009**	0.0018	0.006**	0.0023	0.003	0.0024
Employees with strong labour market attachment only	0.011**	0.0021	0.005*	0.0025	0.003	0.0027
Excluding employees who quit	0.011**	0.0017	0.005**	0.0022	0.003	0.0023
Allowing for attrition bias – Number of waves responded	0.010**	0.0016	0.005**	0.0020	0.003	0.0021
Allowing for attrition bias – Proportion of in-scope waves responded	0.010**	0.0016	0.005**	0.0020	0.003	0.0021
Pooled probit	0.013**	0.0018	0.005**	0.0021	0.003	0.0022

NOTES: *SE* – Standard error. * and ** respectively indicate statistical significance at the 10 and 5 per cent levels. Estimates for all explanatory variables are provided in Appendix Tables A2 to A8.

6. Decompositions of the difference in dismissal rates

Total effect of differences in characteristics

The models estimated in Section 5 constrain the effects associated with explanatory factors to be the same for males and females. In this section, we relax this constraint, thereby allowing us to decompose the

sources of difference in the probability of dismissal, identifying the effects of differences between males and females in their personal and job characteristics as distinct from (unexplained) differences in the effects associated with these characteristics — as captured by differences in the coefficient estimates.

To do this we adopt a modified version of the Blinder (1973)-Oaxaca (1973) decomposition that can be applied to probit models. Following Fairlie (1999), who applied the technique to racial gaps in self-employment, a probit equation can be decomposed as follows:

$$
\overline{Y_m} - \overline{Y_f} = \left[1/N_m \sum_{i=1}^{N_m} \Phi\left(x_{i,m}^{'} \hat{\beta}_m\right) - 1/N_f \sum_{i=1}^{N_f} \Phi\left(x_{i,f}^{'} \hat{\beta}_m\right) \right]
$$
$$
+ \left[1/N_f \sum_{i=1}^{N_f} \Phi\left(x_{i,f}^{'} \hat{\beta}_m\right) - 1/N_f \sum_{i=1}^{N_f} \Phi\left(x_{i,f}^{'} \hat{\beta}_f\right) \right]
$$

(1)

where $\overline{Y_m}$ and $\overline{Y_f}$ are the predicted probabilities of dismissal for males and females, respectively, $x_{i,m}$ and $x_{i,f}$ are vectors of characteristics, β_m and β_f are vectors of the estimated coefficients, N_m and N_f are the sample sizes and Φ is the standard normal cumulative distribution function.

The first component in square brackets is the difference in predicted dismissal rates of males and females attributable to differences in characteristics, applying the male coefficients. The second term is the residual (unexplained) difference due to differences in the estimated coefficients. This has the same form as the standard Blinder-Oaxaca decomposition applied to linear models, and has strong parallels with the mean marginal effects presented in Section 4. Specifically, rather than using the mean values of characteristics and decomposing the dismissal probability as $\left[\overline{x}_m^{'} \hat{\beta}_m - \overline{x}_f^{'} \hat{\beta}_m \right] + \left[\overline{x}_f^{'} \hat{\beta}_m - \overline{x}_f^{'} \hat{\beta}_f \right]$, the mean predicted probability is calculated for of each of the four terms, evaluated over all observations in the term. As in the linear case, decompositions can be evaluated using the male coefficients (as in Equation (1)) or using the female coefficients, which will generally produce different, but equally valid, results.[7]

---

[7] Evaluated at female coefficients, the right-hand sides of Equation (1) becomes
$$
\left[1/N_m \sum_{i=1}^{N_m} \Phi\left(x_{i,m}^{'} \hat{\beta}_f\right) - 1/N_f \sum_{i=1}^{N_f} \Phi\left(x_{i,f}^{'} \hat{\beta}_f\right) \right] + \left[1/N_f \sum_{i=1}^{N_f} \Phi\left(x_{i,m}^{'} \hat{\beta}_m\right) - 1/N_f \sum_{i=1}^{N_f} \Phi\left(x_{i,m}^{'} \hat{\beta}_f\right) \right]
$$

We estimate the same three specifications reported on in Table 2, but models are estimated separately for males and females. Note we employ the pooled probit model here rather than the random effects models, since it is not readily apparent how to treat random effects in decompositions. In any case, as Table 3 (and the associated Appendix tables) demonstrate, results are relatively insensitive to the inclusion or exclusion of correlated random effects.

Table 4 presents the decomposition results. Controlling for personal characteristics only, most of the difference remains unexplained. Controlling for job characteristics results in considerably more of the difference being explained by differences in characteristics. Indeed, once we include detailed occupation and industry dummies, most of the gender difference is "explained". Further, when evaluated at female coefficients, the unexplained component is negative, implying that women are actually more likely to be dismissed once differences in characteristics are eliminated.

Table 4: Blinder-Oaxaca decompositions of sex differences in the probability of job loss (%)

	Evaluated at:	
	male coefficients	female coefficients
Personal characteristics only		
Due to differences in characteristics	0.10	0.00
Unexplained	1.20	1.30
Personal and job characteristics		
Due to differences in characteristics	1.00	0.60
Unexplained	0.30	0.70
Personal and job characteristics, with disaggregated occupation and industry groups		
Due to differences in characteristics	1.21	2.24
Unexplained	0.25	-0.77

NOTE: Total difference in the mean predicted probability of job loss is 1.31 percentage points.

Identifying the contributions of specific factors

To identify the roles of specific factors, we take Fairlie's (2006) approach. As with the modified Oaxaca-Blinder decompositions, pooled probit model estimation results rather than random effects probit results are decomposed. This approach calculates the contribution of differences in the distribution of an individual variable x_j as equal to:

$$\frac{1}{N_f}\sum_{i=1}^{N_f}\Phi\left(x_{i,m}^{-j'}\hat{\beta}_m^{-j}+x_{i,m}^{j}\hat{\beta}_m^{j}\right)-\Phi\left(x_{i,m}^{-j'}\hat{\beta}_m^{-j}+x_{i,f}^{j}\hat{\beta}_m^{j}\right) \tag{2}$$

where variables are as defined in Equation (1) and where each observation in the female sample is matched to an observation in the male sample. Evaluation can be undertaken at male coefficients (as in Equation (2)) or at female coefficients. Noting that the male sample is larger than the female sample, this is done by first taking a random sub-sample of the male sample equal in size to the female sample. The female sample and the male sub-sample are then (separately) sorted by predicted probability of dismissal, and each member of the female sample is matched to the member of the male sub-sample with the same ranking. The drawing of the male sub-sample and calculation of Equation (2) is repeated numerous times (1000 in this paper), with the mean calculated value across these replications being reported.

This method can also be applied to groups of variables rather than simply the single variable x_j. For example, the age dummies are logically considered as a group. The Fairlie approach has the attractive feature that the sum of effects of individual variables (or groups of variables) is equal to the total effect of differences in the distribution of all characteristics.

Table 5 presents results for the two specifications that include both personal and job characteristics. The table shows that the characteristics to make the biggest contribution to the difference in the dismal rate are occupation and industry of employment. When the aggregated occupation and industry categories are employed, differences in the distributions of men and women across these categories explain between 0.82 and 1.01 percentage points of the 1.31 percentage point difference in mean predicted probability of dismissal. When the disaggregated categories are employed, this rises to between 1.19 and 2.77. Clearly,

the occupations and industries in which men and women work play a big part in explaining the higher rate of dismissal among male employees.

Other job characteristics and personal characteristics have either negligible or ambiguous effects, or act to increase the gap between male and female dismissal rates. In particular, differences between male and female employees in their work experience, type of employment contract and length of job tenure act to increase the gap in dismissal rates, while the roles of differences between male and female employees in the distributions of all other characteristics depend on whether evaluation is at male or female coefficients and/or are very close to zero.

Table 5: Contributions of components of characteristics to the male-female difference in the probability of job loss—Fairlie decompositions

	Aggregated occupation and industry groups				Disaggregated occupation and industry groups			
	Evaluated at female coefficients		Evaluated at male coefficients		Evaluated at female coefficients		Evaluated at male coefficients	
Total difference	-1.310		-1.310		-1.310		-1.310	
Difference explained by characteristics	-0.600		-1.080		-2.170		-1.120	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Age	0.008	0.0385	0.000	0.0364	0.021	0.0422	-0.005	0.0360
Education	0.003	0.0285	0.008	0.0330	-0.002	0.0472	0.017	0.0314
Health	-0.032	0.0201	-0.006	0.0121	0.012	0.0249	-0.006	0.0123
Personality	0.012	0.0839	-0.019	0.0808	0.030	0.0983	-0.022	0.0809
Indigenous and immigrant status	-0.004	0.0113	-0.001	0.0103	0.001	0.0138	-0.003	0.0102
Household income	0.000	0.0048	0.001	0.0087	0.004	0.0130	0.005	0.0100
Work experience	0.024	0.0381	0.030	0.0420	0.039	0.0413	0.025	0.0425
Union membership	0.021	0.0148	-0.008	0.0141	0.028	0.0353	-0.020	0.0173
Job tenure	0.080**	0.0382	0.077**	0.0381	0.185**	0.0625	0.050	0.0414
Part-time / full-time status	0.011	0.0969	-0.108	0.1290	0.043	0.1272	0.016	0.1392
Type of employment contract	0.103**	0.0457	0.141**	0.0537	0.165**	0.0715	0.167**	0.0603
Sector	-0.013	0.0131	0.006	0.0149	-0.007	0.0091	0.009	0.0142
Firm size	-0.011	0.0182	0.000	0.0153	0.039	0.0305	0.011	0.0152
Weekend shifts	0.005	0.0088	0.001	0.0063	0.003	0.0075	0.000	0.0066
Night shifts	-0.008	0.0096	-0.010	0.0102	-0.011	0.0124	-0.006	0.0099
Wage (log hourly wage)	0.023	0.0305	-0.182**	0.0455	0.046	0.0505	-0.172**	0.0483
Occupation	-0.099	0.1887	-0.189	0.1349	-1.675**	0.6803	-0.490**	0.2253
Industry	-0.717**	0.1634	-0.823**	0.1147	-1.092**	0.2713	-0.698**	0.2170

NOTES: *SE* – Standard error. * and ** respectively indicate statistical significance at the 10 and 5 per cent levels.

7. Conclusion

Our findings are broadly consistent with the hypothesis that women tend to choose jobs with lower risks of dismissal. It is, however, perhaps significant that the male-female difference in the dismissal rate

only becomes statistically insignificant once detailed industry and occupation controls are included in our models; correspondingly, a significant portion of the difference remains unexplained in most of the decompositions when more aggregated industry and occupation controls are employed. A potential concern is that the disaggregated specification may 'over-control' for occupation and industry. In particular, many occupations and industries are dominated by one sex at this level of disaggregation. In the same way that it has been argued that occupational and industrial sex segregation has led to feminised industries and occupations being underpaid, it may be that feminised occupations and industries are less prone to dismissals simply because they are feminised. That is, employers may adopt 'firing cultures' based on their gender mix, which they then apply to both their male and female employees. Under this scenario, there may effectively be discrimination against male employees, but it will be a product of the adoption of propensity to fire employees based on the masculinity of the occupation or industry rather than a predisposition to fire male employees.

This caveat notwithstanding, our results suggest that differences between men and women in preferences over risk of job loss are the main source in the difference in dismissal rates. This potentially provides an explanation for at least part of the gender wage gap. However, we have not directly investigated this question, which we leave for further research. A further question raised by our findings is why women have a stronger preference for jobs with lower dismissal probabilities. One obvious potential source is that costs of dismissal are higher for women. Investigation of gender differences in costs of dismissal, and its consequences more broadly, would therefore seem to be a useful avenue for future research.

8. Appendix

Table A1: Means of regression variables—All waves combined

	Males	Females		Males	Females
Dismissed	0.041	0.028	Dismissed - broad definition	0.053	0.041
Aged 15-24	0.210	0.210	Extroversion	3.90	4.25
Aged 25-34	0.231	0.208	Agreeableness	4.61	5.17
Aged 35-44	0.250	0.252	Conscientiousness	4.49	4.81
Aged 45-54	0.202	0.230	Emotional stability	4.61	4.77
Aged 55 or over	0.107	0.100	Openness to experience	3.85	3.88
Degree	0.228	0.283	Personality measures missing	0.098	0.077
Other post-school qualification	0.339	0.228	Years of work experience: 0 - <5	0.185	0.201
Disabled	0.148	0.144	Years of work experience: 5 - <10	0.113	0.127
General health (SF-36 measure)	65.1	67.1	Years of work experience: 10 - <20	0.222	0.276
Health missing	0.101	0.080	Years of work experience: 20 - <30	0.231	0.231
ESB immigrant	0.095	0.086	Years of work experience: 30+	0.294	0.220
NESB immigrant	0.112	0.120	Years of work experience missing	0.033	0.031
Household equivalised income	44.70	44.45			
Union member	0.293	0.276	Firm size: Fewer than 20 employees	0.218	0.213
Job tenure (years)	6.47	5.51	Firm size: 20 - 99 employees	0.163	0.144
Job tenure squared / 100	1.07	0.76	Firm size: 100 or more employees	0.594	0.604
Part-time	0.166	0.489	Firm size missing	0.026	0.038
Fixed term	0.091	0.093	Work on weekends	0.285	0.247
Casual	0.186	0.285	Work nights or irregular hours	0.252	0.252
Private sector	0.594	0.532	Log hourly wage	3.10	2.98
			Local unemployment rate	5.03	5.01
Occupation (aggregated)			Industry (aggregated)		
Manager	0.124	0.070	Agriculture, mining	0.079	0.017
Professional	0.201	0.274	Manufacturing	0.155	0.053
Technician / trade	0.210	0.039	Construction	0.090	0.012
Community and personal service	0.067	0.152	Wholesale and retail trade	0.135	0.150
Clerical and administrative	0.085	0.239	Hospitality	0.056	0.082
Sales	0.071	0.137	Transport, communication	0.094	0.045
Machinery operator / driver	0.112	0.010	Professional services	0.123	0.150
Labourer	0.130	0.078	Government, education, health	0.209	0.447
			Arts, recreation and other services	0.060	0.044

Table A1 continued: Means of regression variables—All waves combined

	Males	Females		Males	Females
Occupation (disaggregated)			Industry (disaggregated)		
Other manager	0.092	0.043	Agriculture, fishing and forestry	0.032	0.010
Hospitality, retail or service manager	0.032	0.027	Mining	0.029	0.004
Business professional	0.061	0.055	Food, beverage and tobacco manuf.	0.028	0.018
Design, engineering, etc. professional	0.039	0.015	Textile, leather, clothing, etc. manuf.	0.011	0.007
Education professional	0.041	0.101	Pulp, paper and printing	0.013	0.005
Health professional	0.015	0.073	Mineral, chemical, polymer, etc. manuf.	0.024	0.007
ICT professional	0.030	0.006	Metal products manufacturing	0.027	0.004
Legal, social or welfare professional	0.015	0.024	Transport equipment manufacturing	0.022	0.003
Engineering, ICT or science technician	0.032	0.010	Machinery and equipment manuf.	0.021	0.005
Auto or engineering trades worker	0.063	0.001	Furniture and other manufacturing	0.008	0.003
Construction trades worker	0.029	0.000	Utilities and waste collection	0.018	0.004
Telecommunications trades worker	0.034	0.000	Building construction	0.029	0.005
Food trades worker	0.017	0.008	Heavy and civil engineering constr.	0.012	0.002
Skilled animal or horticultural worker	0.016	0.005	Construction services	0.049	0.005
Other technicians or trades worker	0.019	0.014	Basic material wholesaling	0.011	0.003
Health and welfare support workers	0.007	0.022	Machinery and equipment wholesaling	0.010	0.005
Carer or aide	0.010	0.075	Motor vehicles and parts wholesaling	0.005	0.001
Hospitality worker	0.015	0.037	Grocery, liquor and tobacco production	0.008	0.005
Protective service worker	0.027	0.007	Other wholesaling	0.009	0.008
Sports pr personal service worker	0.008	0.011	Motor vehicle and parts retailing	0.013	0.003
Office manager or program admin.	0.013	0.031	Fuel and food retailing	0.035	0.045
Personal assistant or secretary	0.000	0.029	Other retailing	0.043	0.079
General clerical workers	0.009	0.048	Accommodation	0.009	0.014
Inquiry clerk or receptionist	0.008	0.048	Food and beverage services	0.047	0.068
Numerical clerk	0.014	0.052	Transport	0.038	0.009
Clerical or office support worker	0.011	0.009	Postal and courier pick-up and delivery	0.010	0.006
Other clerical or administrative	0.030	0.023	Transport support & warehousing	0.018	0.005
Sales representative or agents	0.017	0.012	Publishing and broadcasting	0.009	0.013
Sales Assistant or salesperson	0.044	0.094	Telecommunications and internet	0.018	0.008
Sales support worker	0.009	0.031	Library and other information services	0.002	0.004
Machine or stationary plant operator	0.031	0.005	Finance	0.014	0.023
Mobile plant operator	0.022	0.001	Insurance and superannuation funds	0.006	0.010
Road or rail driver	0.044	0.003	Auxiliary finance and insurance services	0.011	0.010
Storeperson	0.015	0.002	Rental services and property operators	0.011	0.015
Cleaner or laundry worker	0.015	0.028	Professional, scientific & technical	0.044	0.058
Construction or mining labourer	0.022	0.000	Computer system design and related	0.019	0.006
Factory process worker	0.030	0.018	Administrative services	0.011	0.018
Farm, forestry or garden worker	0.016	0.005	Building cleaning, pest control, etc.	0.007	0.009
Food preparation assistant	0.016	0.016	Public administration	0.053	0.049
Other labourer	0.031	0.011	Defence	0.014	0.003
			Public order, safety and regulatory	0.029	0.011
			Preschool and school education	0.040	0.124
			Tertiary education	0.022	0.029
			Adult, community and other education	0.005	0.009
			Hospitals	0.017	0.070
			Medical and other health care services	0.011	0.055
			Residential care services	0.007	0.041
			Social assistance services	0.012	0.055
			Heritage & creative & performing arts	0.005	0.005
			Sports, recreation & gambling activities	0.016	0.011
			Repair and maintenance	0.028	0.003
			Personal and other services	0.011	0.025

Table A2: Mean marginal effects estimates from random effects probit models of the probability of dismissal – Broad definition of dismissal

	(i)		(ii)		(iii)	
	Estimate	SE	Estimate	SE	Estimate	SE
Male	0.009**	0.0018	0.006**	0.0023	0.003	0.0024
Age group ('15-24' omitted)						
25-34	-0.003	0.0030	0.001	0.0034	0.000	0.0034
35-44	-0.004	0.0034	0.004	0.0039	0.003	0.0039
45-54	-0.003	0.0034	0.010**	0.0039	0.009*	0.0040
55 or over	0.005	0.0039	0.018**	0.0045	0.018**	0.0046
Educational attainment ('No post-school qualifications' omitted)						
Degree	-0.012**	0.0024	-0.003	0.0029	-0.002	0.0030
Other post-school qualification	-0.007**	0.0020	-0.003	0.0023	-0.003	0.0023
Disabled	0.006**	0.0022	0.006**	0.0025	0.006**	0.0025
General health (SF-36)	-1.51E-04**	4.85E-05	-1.82E-04**	5.37E-05	-1.78E-04**	5.39E-05
Health missing	-0.004	0.0043	-0.007	0.0048	-0.007	0.0048
Extroversion	0.002*	0.0009	0.001	0.0010	0.001	0.0010
Agreeableness	-0.001	0.0012	0.000	0.0013	0.000	0.0013
Conscientiousness	-0.002*	0.0010	-0.002	0.0011	-0.002	0.0011
Emotional stability	-0.001	0.0010	0.000	0.0011	0.000	0.0011
Openness to experience	0.003**	0.0010	0.002**	0.0011	0.002*	0.0011
Personality missing	0.000	0.0089	0.003	0.0096	0.002	0.0096
Immigrant and indigenous status ('Non-indigenous Australian-born' omitted)						
ESB immigrant	0.006**	0.003	0.004	0.0032	0.003	0.0032
Indigenous or NESB immigrant	0.007**	0.0026	0.005*	0.0028	0.004	0.0028
Household equivalised income ($'000)	-1.28E-04**	3.57E-05	-4.00E-05	3.97E-05	-5.24E-05	4.01E-05
Years of work experience ('<5' omitted)						
5 - <10	-0.002	0.0032	-0.001	0.0036	-0.001	0.0036
10 - <20	-0.013**	0.0034	-0.008**	0.0038	-0.008**	0.0038
20 - <30	-0.013**	0.0037	-0.005	0.0041	-0.004	0.0041
30+	-0.016**	0.0033	-0.012**	0.0037	-0.011**	0.0037
Experience missing	0.027**	0.0046	0.019**	0.0050	0.018**	0.0050
Local unemployment rate	-0.001	0.0009	-0.002*	0.0010	-0.002	0.0010
Wave 2	-0.005	0.0030	-0.008**	0.0034	-0.008**	0.0035
Wave 3	-0.009**	0.0031	-0.019**	0.0045	-0.020**	0.0047
Wave 4	-0.012**	0.0034	-0.022**	0.0048	-0.023**	0.0049
Wave 5	-0.015**	0.0035	-0.024**	0.0048	-0.025**	0.0049
Wave 6	-0.020**	0.0038	-0.032**	0.0051	-0.033**	0.0053
Wave 7	-0.022**	0.0039	-0.033**	0.0052	-0.034**	0.0053
Wave 8	0.002	0.0036	-0.006	0.0049	-0.007	0.005
Union member			-0.004	0.0024	-0.001	0.0025
Job tenure (years)			-0.005**	0.0004	-0.005**	0.0004
Job tenure squared / 100			0.013**	0.0011	0.013**	0.0012
Part-time			-0.001	0.0025	0.003	0.0025
Employment contract ('Permanent/ongoing' omitted)						
Fixed term			0.029**	0.0029	0.029**	0.0029
Casual			0.029**	0.0026	0.029**	0.0026
Private sector			0.008**	0.0033	0.010**	0.0035
Firm size ('100+ employees' omitted)						
Fewer than 20 employees			0.007**	0.0023	0.006**	0.0024
20 - 99 employees			0.004	0.0025	0.003	0.0025
Firm size unknown			0.014**	0.0044	0.014**	0.0044

Table A2 continued

	(i)		(ii)		(iii)	
	Estimate	SE	Estimate	SE	Estimate	SE
Work on weekends			-0.004*	0.0022	-0.002	0.0023
Work nights or irregular hours			-0.005**	0.0023	-0.002	0.0024
Log hourly wage			0.002	0.0017	0.001	0.0017
Occupation ('Manager' omitted)						
Professional			-0.005	0.0037		
Technician / trade			-0.005	0.0040		
Community and personal service			-0.010**	0.0045	Contains 40 occupation dummies. See Appendix Table A8 for estimates.	
Clerical and administrative			-0.003	0.0038		
Sales			-0.014**	0.0045		
Machinery operator / driver			-0.003	0.0046		
Labourer			-0.002	0.0041		
Industry ('Agriculture, mining' omitted)						
Manufacturing			-0.002	0.0043		
Construction			0.003	0.0048		
Wholesale and retail trade			-0.021**	0.0046		
Hospitality			-0.015**	0.0050	Contains 52 industry dummies. See Appendix Table A8 for estimates.	
Transport, communication			-0.007	0.0048		
Professional services			-0.009**	0.0043		
Government, education, health			-0.032**	0.0045		
Arts, recreation and other services			-0.009*	0.0050		
Number of observations	49520					
Log likelihood	-9068.57		-8630.45		-8546.95	
ρ	0.226		0.104		0.101	
LR ($\rho = 0$)	243.25		53.48		49.50	

NOTES: *SE* – Standard error. ρ – Proportion of the total variance contributed by the panel-level variance component. *LR ($\rho = 0$)* – Likelihood-ratio test for ρ equal to zero (distributed as $\chi^2(1)$ under the null hypothesis—critical value at the 95 per cent level is 3.84). * and ** respectively indicate statistical significance at the 10 and 5 per cent levels.

Table A3: Mean marginal effects estimates from random effects probit models of the probability of dismissal – Employees with 'strong' labour market attachment (full-time and at least two years of work experience)

	(i)		(ii)		(iii)	
	Estimate	SE	Estimate	SE	Estimate	SE
Male	0.011**	0.0021	0.005*	0.0025	0.003	0.0027
Age group ('15-24' omitted)						
25-34	-0.005	0.0037	-0.005	0.0042	-0.005	0.0042
35-44	-0.004	0.0047	-0.003	0.0054	-0.003	0.0054
45-54	-0.006	0.0055	-0.002	0.0064	-0.001	0.0064
55 or over	-0.002	0.0064	0.004	0.0074	0.005	0.0074
Educational attainment ('No post-school qualifications' omitted)						
Degree	-0.011**	0.0025	-0.001	0.0032	0.000	0.0032
Other post-school qualification	-0.002	0.0020	-0.001	0.0023	-0.002	0.0023
Disabled	0.006**	0.0024	0.008**	0.0027	0.008**	0.0027
General health (SF-36)	-8.71E-05*	5.20E-05	-1.26E-04**	5.96E-05	-1.22E-04**	5.97E-05
Health missing	-0.002	0.0046	-0.006	0.0053	-0.006	0.0053
Extroversion	0.002**	0.0010	0.002**	0.0011	0.002**	0.0011
Agreeableness	-0.002	0.0012	0.000	0.0014	0.000	0.0014
Conscientiousness	-0.002*	0.0011	-0.003**	0.0012	-0.003**	0.0012
Emotional stability	0.001	0.0011	0.001	0.0012	0.001	0.0012
Openness to experience	0.002**	0.0011	0.003**	0.0012	0.003**	0.0012
Personality missing	0.007	0.0094	0.012	0.0105	0.013	0.0106
Immigrant and indigenous status ('Non-indigenous Australian-born' omitted)						
ESB immigrant	0.007**	0.0028	0.006*	0.0031	0.005	0.0031
Indigenous or NESB immigrant	0.005*	0.0027	0.002	0.0030	0.001	0.0031
Household equivalised income ($'000)	-1.27E-05	3.93E-05	-2.30E-05	4.81E-05	-4.66E-05	4.87E-05
Years of work experience ('<5' omitted)						
5 - <10	0.002	0.0037	0.003	0.0042	0.003	0.0042
10 - <20	-0.006	0.0044	-0.002	0.0051	-0.002	0.0051
20 - <30	-0.006	0.0053	0.000	0.0061	0.000	0.0061
30+	-0.005	0.0061	0.002	0.0071	0.001	0.0072
Local unemployment rate	-0.002*	0.0009	-0.002*	0.0011	-0.001	0.0011
Wave 2	-0.004	0.0031	-0.004	0.0036	-0.003	0.0036
Wave 3	-0.012**	0.0034	-0.031**	0.0055	-0.030**	0.0056
Wave 4	-0.010**	0.0036	-0.027**	0.0056	-0.026**	0.0058
Wave 5	-0.012**	0.0037	-0.030**	0.0057	-0.028**	0.0058
Wave 6	-0.020**	0.0042	-0.040**	0.0062	-0.038**	0.0063
Wave 7	-0.019**	0.0042	-0.038**	0.0062	-0.037**	0.0063
Wave 8	0.002	0.0038	-0.015**	0.0057	-0.013**	0.0059
Union member			0.002	0.0025	0.004	0.0025
Job tenure (years)			-0.003**	0.0004	-0.003**	0.0004
Job tenure squared / 100			0.007**	0.0013	0.007**	0.0013
Employment contract ('Permanent/ongoing' omitted)						
Fixed term			0.003	0.0032	0.004	0.0032
Casual			0.012**	0.0032	0.014**	0.0033
Private sector			0.019**	0.0042	0.019**	0.0044
Firm size ('100+ employees' omitted)						
Fewer than 20 employees			0.006**	0.0026	0.005**	0.0027
20 - 99 employees			0.004	0.0026	0.003	0.0027
Firm size unknown			0.014**	0.0057	0.014**	0.0057

Table A3 continued

	(i)		(ii)		(iii)	
	Estimate	SE	Estimate	SE	Estimate	SE
Work on weekends			-0.002	0.0025	-0.001	0.0026
Work nights or irregular hours			-0.003	0.0029	-0.002	0.0030
Log hourly wage			0.008**	0.0024	0.006*	0.0024
Occupation ('Manager' omitted)						
Professional			-0.009**	0.0035		
Technician / trade			-0.001	0.0037		
Community and personal service			-0.007	0.0058	Contains 40 occupation dummies. See Appendix Table A8 for estimates.	
Clerical and administrative			-0.002	0.0037		
Sales			0.000	0.0048		
Machinery operator / driver			-0.003	0.0043		
Labourer			0.000	0.0044		
Industry ('Agriculture, mining' omitted)						
Manufacturing			0.008*	0.0042		
Construction			0.012**	0.0047		
Wholesale and retail trade			-0.007	0.0048		
Hospitality			-0.001	0.0063	Contains 52 industry dummies. See Appendix Table A8 for estimates.	
Transport, communication			0.005	0.0047		
Professional services			0.001	0.0045		
Government, education, health			-0.023**	0.0050		
Arts, recreation and other services			0.003	0.0054		
Number of observations	30639					
Log likelihood	-4262.8		-4064.11		-4002.27	
ρ	0.176		0.062		0.063	
LR (ρ = 0)	59.58		7.56		7.53	

NOTES: *SE* – Standard error. *ρ* – Proportion of the total variance contributed by the panel-level variance component. *LR (ρ = 0)* – Likelihood-ratio test for ρ equal to zero (distributed as $\chi^2(1)$ under the null hypothesis—critical value at the 95 per cent level is 3.84). * and ** respectively indicate statistical significance at the 10 and 5 per cent levels.

Table A4: Mean marginal effects estimates from random effects probit models of the probability of dismissal – Excluding employees who voluntarily leave the job

	(i)		(ii)		(iii)	
	Estimate	SE	Estimate	SE	Estimate	SE
Male	0.011**	0.0017	0.005**	0.0022	0.003	0.0023
Age group ('15-24' omitted)						
25-34	-0.004	0.0029	-0.002	0.0033	-0.002	0.0034
35-44	-0.002	0.0032	0.003	0.0037	0.003	0.0038
45-54	-0.002	0.0032	0.007*	0.0038	0.007*	0.0038
55 or over	0.002	0.0036	0.013**	0.0043	0.014**	0.0044
Educational attainment ('No post-school qualifications' omitted)						
Degree	-0.015**	0.0023	-0.004	0.0029	-0.003	0.0029
Other post-school qualification	-0.004**	0.0019	-0.001	0.0022	-0.001	0.0022
Disabled	0.004**	0.0021	0.005**	0.0024	0.006**	0.0024
General health (SF-36)	-1.45E-04**	4.56E-05	-1.72E-04**	5.17E-05	-1.69E-04**	5.19E-05
Health missing	-0.004	0.0040	-0.005	0.0045	-0.005	0.0046
Extroversion	0.003**	0.0009	0.003**	0.0009	0.003**	0.0010
Agreeableness	-0.001	0.0011	0.000	0.0012	0.000	0.0012
Conscientiousness	-0.002**	0.0009	-0.003**	0.0010	-0.003**	0.0011
Emotional stability	-0.001	0.0009	0.000	0.0010	0.000	0.0010
Openness to experience	0.002**	0.0009	0.002*	0.0010	0.002*	0.0011
Personality missing	-0.002	0.0082	0.001	0.0091	0.001	0.0092
Immigrant and indigenous status ('Non-indigenous Australian-born' omitted)						
ESB immigrant	0.009**	0.0027	0.007**	0.0029	0.006**	0.0030
Indigenous or NESB immigrant	0.006**	0.0024	0.003	0.0026	0.003	0.0027
Household equivalised income ($'000)	-3.36E-05	3.18E-05	-8.26E-06	3.72E-05	-2.56E-05	3.77E-05
Years of work experience ('<5' omitted)						
5 - <10	0.000	0.0031	0.001	0.0035	0.001	0.0036
10 - <20	-0.009**	0.0033	-0.006	0.0037	-0.006	0.0037
20 - <30	-0.012**	0.0035	-0.006	0.0040	-0.006	0.0040
30+	-0.013**	0.0032	-0.011**	0.0036	-0.010**	0.0037
Experience missing	0.021**	0.0043	0.015**	0.0049	0.015**	0.0049
Local unemployment rate	-0.001	0.0008	-0.001	0.0009	-0.001	0.0009
Wave 2	-0.005*	0.0029	-0.007**	0.0033	-0.006*	0.0034
Wave 3	-0.008**	0.0030	-0.024**	0.0046	-0.023**	0.0048
Wave 4	-0.009**	0.0032	-0.024**	0.0048	-0.023**	0.0050
Wave 5	-0.010**	0.0033	-0.025**	0.0049	-0.024**	0.0050
Wave 6	-0.012**	0.0035	-0.029**	0.0051	-0.027**	0.0053
Wave 7	-0.015**	0.0036	-0.031**	0.0052	-0.030**	0.0053
Wave 8	0.004	0.0034	-0.010**	0.0049	-0.009*	0.0051
Union member			-0.001	0.0023	0.001	0.0023
Job tenure (years)			-0.004**	0.0004	-0.004**	0.0004
Job tenure squared / 100			0.009**	0.0011	0.009**	0.0011
Part-time			-0.002	0.0024	0.001	0.0025
Employment contract ('Permanent/ongoing' omitted)						
Fixed term			0.004	0.0030	0.005*	0.0030
Casual			0.011**	0.0024	0.012**	0.0025
Private sector			0.016**	0.0034	0.015**	0.0037
Firm size ('100+ employees' omitted)						
Fewer than 20 employees			0.011**	0.0022	0.010**	0.0023
20 - 99 employees			0.007**	0.0024	0.007**	0.0024
Firm size unknown			0.014**	0.0043	0.013**	0.0044

	(i)		(ii)		(iii)	
	Estimate	SE	Estimate	SE	Estimate	SE
Work on weekends			-0.002	0.0021	-0.001	0.0022
Work nights or irregular hours			-0.006**	0.0022	-0.004*	0.0023
Log hourly wage			0.006**	0.0017	0.005**	0.0018
Occupation ('Manager' omitted)						
Professional			-0.011**	0.0035		
Technician / trade			-0.005	0.0037		
Community and personal service			-0.003	0.0043	Contains 40 occupation	
Clerical and administrative			-0.006	0.0036	dummies. See Appendix Table	
Sales			-0.006	0.0041	A8 for estimates.	
Machinery operator / driver			-0.002	0.0043		
Labourer			-0.003	0.0038		
Industry ('Agriculture, mining' omitted)						
Manufacturing			0.012**	0.0042		
Construction			0.014**	0.0047		
Wholesale and retail trade			-0.006	0.0045		
Hospitality			0.005	0.0049	Contains 52 industry	
Transport, communication			0.006	0.0047	dummies. See Appendix Table	
Professional services			0.005	0.0043	A8 for estimates.	
Government, education, health			-0.023**	0.0046		
Arts, recreation and other services			0.001	0.0050		
Number of observations	43988					
Log likelihood	-6947.29		-6641.15		-6574.05	
ρ	0.217		0.099		0.097	
LR ($\rho = 0$)	137.83		30.07		28.17	

NOTES: *SE* – Standard error. ρ – Proportion of the total variance contributed by the panel-level variance component. *LR ($\rho = 0$)* – Likelihood-ratio test for ρ equal to zero (distributed as $\chi^2(1)$ under the null hypothesis—critical value at the 95 per cent level is 3.84). * and ** respectively indicate statistical significance at the 10 and 5 per cent levels.

Table A5: Mean marginal effects estimates from random effects probit models of the probability of dismissal—Including 'number of waves responded' as a regressor

	(i)		(ii)		(iii)	
	Estimate	SE	Estimate	SE	Estimate	SE
Male	0.010**	0.0016	0.005**	0.002	0.003	0.0021
Age group ('15-24' omitted)						
25-34	-0.003	0.0027	-0.002	0.0030	-0.002	0.0030
35-44	-0.001	0.0030	0.002	0.0034	0.002	0.0034
45-54	0.000	0.0030	0.006*	0.0035	0.006*	0.0035
55 or over	0.004	0.0034	0.012**	0.0040	0.013**	0.0041
Educational attainment ('No post-school qualifications' omitted)						
Degree	-0.013**	0.0021	-0.004	0.0026	-0.003	0.0026
Other post-school qualification	-0.004**	0.0017	-0.002	0.0019	-0.002	0.0020
Disabled	0.004*	0.0019	0.005**	0.0022	0.005**	0.0022
General health (SF-36)	-1.33E-04**	4.16E-05	-1.56E-04**	4.65E-05	-1.53E-04**	4.67E-05
Health missing	-0.004	0.0036	-0.005	0.0041	-0.005	0.0041
Extroversion	0.002**	0.0008	0.002**	0.0009	0.002**	0.0009
Agreeableness	-0.001	0.0010	0.000	0.0011	0.000	0.0011
Conscientiousness	-0.002**	0.0009	-0.002**	0.0009	-0.002**	0.0009
Emotional stability	-0.001	0.0009	0.000	0.0009	0.000	0.0009
Openness to experience	0.002*	0.0009	0.001	0.0009	0.001	0.0010
Personality missing	-0.001	0.0076	0.004	0.0083	0.004	0.0084
Immigrant and indigenous status ('Non-indigenous Australian-born' omitted)						
ESB immigrant	0.008**	0.0024	0.006**	0.0027	0.006**	0.0027
Indigenous or NESB immigrant	0.006**	0.0022	0.004*	0.0024	0.004	0.0024
Household equivalised income ($'000)	-2.83E-05	2.93E-05	-6.42E-06	3.37E-05	-2.14E-05	3.42E-05
Years of work experience ('<5' omitted)						
5 - <10	0.000	0.0028	0.001	0.0032	0.001	0.0032
10 - <20	-0.007**	0.0030	-0.005	0.0033	-0.004	0.0034
20 - <30	-0.010**	0.0032	-0.004	0.0036	-0.004	0.0036
30+	-0.011**	0.0029	-0.007**	0.0033	-0.007**	0.0033
Experience missing	0.018**	0.0039	0.011**	0.0043	0.011**	0.0044
Local unemployment rate	0.000	0.0007	-0.001	0.0008	0.000	0.0008
Wave 2	-0.005*	0.0026	-0.006**	0.0030	-0.006	0.0031
Wave 3	-0.008**	0.0028	-0.021**	0.0042	-0.021**	0.0044
Wave 4	-0.008**	0.0030	-0.021**	0.0044	-0.020**	0.0045
Wave 5	-0.010**	0.0030	-0.023**	0.0044	-0.021**	0.0045
Wave 6	-0.012**	0.0033	-0.025**	0.0046	-0.024**	0.0048
Wave 7	-0.013**	0.0033	-0.027**	0.0047	-0.026**	0.0048
Wave 8	0.005	0.0031	-0.006	0.0045	-0.005	0.0046
Union member			0.000	0.0021	0.002	0.0021
Job tenure (years)			-0.003**	0.0003	-0.003**	0.0003
Job tenure squared / 100			0.008**	0.0010	0.008**	0.0010
Part-time			0.000	0.0022	0.002	0.0022
Employment contract ('Permanent/ongoing' omitted)						
Fixed term			0.004	0.0027	0.005*	0.0027
Casual			0.009**	0.0022	0.010**	0.0022
Private sector			0.013**	0.0031	0.013**	0.0034
Firm size ('100+ employees' omitted)						
Fewer than 20 employees			0.009**	0.0020	0.008**	0.0021
20 - 99 employees			0.006**	0.0021	0.005**	0.0022
Firm size unknown			0.013**	0.0039	0.012**	0.0039

Table A5 continued

	(i)		(ii)		(iii)	
	Estimate	SE	Estimate	SE	Estimate	SE
Work on weekends			-0.002	0.0019	-0.001	0.002
Work nights or irregular hours			-0.005**	0.002	-0.004*	0.0021
Log hourly wage			0.005**	0.0016	0.004**	0.0016
Occupation ('Manager' omitted)						
Professional			-0.010**	0.0032		
Technician / trade			-0.004	0.0033		
Community and personal service			-0.003	0.0039		
Clerical and administrative			-0.005*	0.0032		
Sales			-0.006*	0.0037		
Machinery operator / driver			-0.003	0.0039		
Labourer			-0.003	0.0035		
Industry ('Agriculture, mining' omitted)						
Manufacturing			0.010**	0.0038		
Construction			0.012**	0.0042		
Wholesale and retail trade			-0.006	0.004		
Hospitality			0.001	0.0044		
Transport, communication			0.005	0.0042		
Professional services			0.003	0.0038		
Government, education, health			-0.021**	0.0042		
Arts, recreation and other services			0.001	0.0045		
Number of waves responded	0.001**	0.0004	0.002**	0.0005	0.002**	0.0005
Number of observations	49520					
Log likelihood	-7186.94		-6905.48		-6838.22	
ρ	0.180		0.082		0.079	
LR (ρ = 0)	107.76		23.00		20.90	

NOTES: *SE* – Standard error. ρ – Proportion of the total variance contributed by the panel-level variance component. *LR (ρ = 0)* – Likelihood-ratio test for ρ equal to zero (distributed as $\chi^2(1)$ under the null hypothesis—critical value at the 95 per cent level is 3.84). * and ** respectively indicate statistical significance at the 10 and 5 per cent levels.

Table A6: Mean marginal effects estimates from random effects probit models of the probability of dismissal—Including 'proportion of waves responded' as a regressor

	(i)		(ii)		(iii)	
	Estimate	SE	Estimate	SE	Estimate	SE
Male	0.010**	0.0016	0.005**	0.002	0.003	0.0021
Age group ('15-24' omitted)						
25-34	-0.002	0.0026	-0.001	0.0030	-0.001	0.0030
35-44	0.000	0.0029	0.004	0.0034	0.003	0.0034
45-54	0.001	0.0029	0.009**	0.0034	0.008**	0.0035
55 or over	0.005	0.0033	0.015**	0.0039	0.015**	0.0040
Educational attainment ('No post-school qualifications' omitted)						
Degree	-0.013**	0.0021	-0.004	0.0026	-0.003	0.0026
Other post-school qualification	-0.004**	0.0017	-0.002	0.0019	-0.002	0.0020
Disabled	0.004*	0.0019	0.004**	0.0022	0.005**	0.0022
General health (SF-36)	-1.35E-04**	4.17E-05	-1.57E-04**	4.64E-05	-1.53E-04**	4.66E-05
Health missing	-0.003	0.0036	-0.005	0.0041	-0.005	0.0041
Extroversion	0.002**	0.0008	0.002**	0.0008	0.002**	0.0009
Agreeableness	-0.001	0.0010	0.000	0.0011	0.000	0.0011
Conscientiousness	-0.002**	0.0009	-0.002**	0.0009	-0.002**	0.0009
Emotional stability	-0.001	0.0009	0.000	0.0009	0.000	0.0009
Openness to experience	0.001*	0.0009	0.001	0.0009	0.001	0.0010
Personality missing	-0.002	0.0075	0.002	0.0082	0.001	0.0083
Immigrant and indigenous status ('Non-indigenous Australian-born' omitted)						
ESB immigrant	0.007**	0.0024	0.006**	0.0026	0.005**	0.0027
Indigenous or NESB immigrant	0.006**	0.0022	0.004*	0.0024	0.004	0.0024
Household equivalised income ($'000)	-2.62E-05	2.94E-05	-6.29E-06	3.38E-05	-2.16E-05	3.42E-05
Years of work experience ('<5' omitted)						
5 - <10	0.000	0.0028	0.001	0.0032	0.001	0.0032
10 - <20	-0.008**	0.0030	-0.005	0.0033	-0.005	0.0034
20 - <30	-0.010**	0.0032	-0.005	0.0036	-0.005	0.0036
30+	-0.011**	0.0029	-0.009**	0.0033	-0.008**	0.0033
Experience missing	0.019**	0.0040	0.014**	0.0044	0.014**	0.0044
Local unemployment rate	-0.001	0.0007	-0.001	0.0008	0.000	0.0008
Wave 2	-0.005*	0.0026	-0.006**	0.0030	-0.006*	0.0030
Wave 3	-0.008**	0.0028	-0.021**	0.0042	-0.020**	0.0044
Wave 4	-0.008**	0.0030	-0.021**	0.0044	-0.020**	0.0045
Wave 5	-0.010**	0.0030	-0.023**	0.0044	-0.021**	0.0045
Wave 6	-0.012**	0.0033	-0.026**	0.0046	-0.025**	0.0048
Wave 7	-0.014**	0.0034	-0.028**	0.0047	-0.026**	0.0048
Wave 8	0.004	0.0031	-0.007	0.0045	-0.006	0.0046
Union member			0.000	0.0021	0.002	0.0021
Job tenure (years)			-0.003**	0.0003	-0.003**	0.0003
Job tenure squared / 100			0.008**	0.0010	0.008**	0.001
Part-time			0.000	0.0022	0.002	0.0022
Employment contract ('Permanent/ongoing' omitted)						
Fixed term			0.004	0.0027	0.005*	0.0027
Casual			0.009**	0.0022	0.010**	0.0022
Private sector			0.013**	0.0031	0.013**	0.0034
Firm size ('100+ employees' omitted)						
Fewer than 20 employees			0.009**	0.0020	0.008**	0.0021
20 - 99 employees			0.006**	0.0021	0.006**	0.0022
Firm size unknown			0.013**	0.0039	0.012**	0.0039

Table A6 continued

	(i)		(ii)		(iii)	
	Estimate	SE	Estimate	SE	Estimate	SE
Work on weekends			-0.002	0.0019	-0.001	0.0020
Work nights or irregular hours			-0.005**	0.0020	-0.004*	0.0021
Log hourly wage			0.005**	0.0016	0.004**	0.0016
Occupation ('Manager' omitted)						
Professional			-0.010**	0.0032		
Technician / trade			-0.004	0.0033		
Community and personal service			-0.003	0.0039		
Clerical and administrative			-0.005*	0.0032		
Sales			-0.006*	0.0037		
Machinery operator / driver			-0.003	0.0039		
Labourer			-0.003	0.0035		
Industry ('Agriculture, mining' omitted)						
Manufacturing			0.010**	0.0038		
Construction			0.012**	0.0042		
Wholesale and retail trade			-0.006	0.0040		
Hospitality			0.001	0.0044		
Transport, communication			0.004	0.0042		
Professional services			0.003	0.0038		
Government, education, health			-0.022**	0.0041		
Arts, recreation and other services			0.000	0.0045		
Proportion of waves responded	0.044**	0.0100	0.050**	0.0111	0.050**	0.0111
Number of observations	49520					
Log likelihood	-7178.16		-6898.65		-6831.67	
ρ	0.178		0.081		0.079	
LR (ρ = 0)	106.33		23.11		21.11	

NOTES: *SE* – Standard error. *ρ* – Proportion of the total variance contributed by the panel-level variance component. *LR (ρ = 0)* – Likelihood-ratio test for ρ equal to zero (distributed as $\chi^2(1)$ under the null hypothesis—critical value at the 95 per cent level is 3.84). * and ** respectively indicate statistical significance at the 10 and 5 per cent levels.

Table A7: Mean marginal effects estimates from pooled probit models of the probability of dismissal

	(i)		(ii)		(iii)	
	Estimate	SE	Estimate	SE	Estimate	SE
Male	0.013**	0.0018	0.005**	0.0021	0.003	0.0022
Age group ('15-24' omitted)						
25-34	-0.003	0.0032	-0.001	0.0032	-0.001	0.0032
35-44	0.000	0.0035	0.005	0.0036	0.004	0.0036
45-54	0.001	0.0035	0.010**	0.0036	0.010**	0.0037
55 or over	0.006	0.0040	0.016**	0.0042	0.017**	0.0042
Educational attainment ('No post-school qualifications' omitted)						
Degree	-0.016**	0.0024	-0.004	0.0028	-0.003	0.0028
Other post-school qualification	-0.004**	0.0020	-0.001	0.0021	-0.002	0.0021
Disabled	0.005**	0.0023	0.005**	0.0023	0.005**	0.0023
General health (SF-36)	-1.71E-04**	5.02E-05	-1.72E-04**	4.98E-05	-1.68E-04**	4.98E-05
Health missing	-0.004	0.0045	-0.005	0.0044	-0.005	0.0044
Extroversion	0.003**	0.0009	0.002**	0.0009	0.002**	0.0009
Agreeableness	-0.001	0.0012	0.000	0.0012	0.000	0.0012
Conscientiousness	-0.002**	0.001	-0.003**	0.0010	-0.003**	0.0010
Emotional stability	-0.001	0.001	0.000	0.0010	0.000	0.0010
Openness to experience	0.002*	0.001	0.001	0.0010	0.001	0.0010
Personality missing	-0.003	0.0087	0.000	0.0086	0.000	0.0087
Immigrant and indigenous status ('Non-indigenous Australian-born' omitted)						
ESB immigrant	0.009**	0.0028	0.006**	0.0028	0.006**	0.0028
Indigenous or NESB immigrant	0.007**	0.0025	0.004*	0.0025	0.004	0.0025
Household equivalised income ($'000)	-4.33E-05	3.60E-05	-9.89E-06	3.64E-05	-2.63E-05	3.67E-05
Years of work experience ('<5' omitted)						
5 - <10	0.000	0.0035	0.001	0.0034	0.001	0.0034
10 - <20	-0.010**	0.0036	-0.005	0.0036	-0.005	0.0036
20 - <30	-0.013**	0.0039	-0.005	0.0038	-0.005	0.0038
30+	-0.014**	0.0035	-0.009**	0.0035	-0.008**	0.0035
Experience missing	0.021**	0.0047	0.011**	0.0046	0.011**	0.0047
Local unemployment rate	-0.001	0.0009	-0.001	0.0009	0.000	0.0009
Wave 2	-0.006*	0.0034	-0.007**	0.0033	-0.006*	0.0033
Wave 3	-0.010**	0.0035	-0.023**	0.0046	-0.022**	0.0047
Wave 4	-0.011**	0.0037	-0.023**	0.0047	-0.022**	0.0049
Wave 5	-0.012**	0.0038	-0.025**	0.0048	-0.023**	0.0049
Wave 6	-0.015**	0.0041	-0.028**	0.0050	-0.026**	0.0051
Wave 7	-0.017**	0.0041	-0.030**	0.0051	-0.028**	0.0052
Wave 8	0.006	0.0039	-0.007	0.0049	-0.006	0.0050
Union member			0.001	0.0022	0.002	0.0023
Job tenure (years)			-0.004**	0.0003	-0.004**	0.0003
Job tenure squared / 100			0.009**	0.0010	0.009**	0.0010
Part-time			-0.001	0.0023	0.002	0.0024
Employment contract ('Permanent/ongoing' omitted)						
Fixed term			0.005	0.0029	0.005*	0.0030
Casual			0.010**	0.0024	0.011**	0.0024
Private sector			0.015**	0.0034	0.014**	0.0036
Firm size ('100+ employees' omitted)						
Fewer than 20 employees			0.009**	0.0021	0.009**	0.0022
20 - 99 employees			0.006**	0.0023	0.006**	0.0024
Firm size unknown			0.014**	0.0042	0.013**	0.0042

	(i)		(ii)		(iii)	
	Estimate	SE	Estimate	SE	Estimate	SE
Work on weekends			-0.002	0.0021	-0.001	0.0021
Work nights or irregular hours			-0.005**	0.0022	-0.004*	0.0022
Log hourly wage			0.006**	0.0017	0.005**	0.0017
Occupation ('Manager' omitted)						
Professional			-0.011**	0.0034		
Technician / trade			-0.005	0.0035		
Community and personal service			-0.004	0.0042		
Clerical and administrative			-0.006*	0.0035		
Sales			-0.007*	0.0040		
Machinery operator / driver			-0.004	0.0041		
Labourer			-0.003	0.0037		
Industry ('Agriculture, mining' omitted)						
Manufacturing			0.011**	0.0041		
Construction			0.013**	0.0045		
Wholesale and retail trade			-0.007	0.0043		
Hospitality			0.001	0.0047		
Transport, communication			0.005	0.0045		
Professional services			0.004	0.0041		
Government, education, health			-0.023**	0.0044		
Arts, recreation and other services			0.001	0.0048		
Number of observations	49520					
Pseudo R-squared	0.025		0.068		0.077	
Log likelihood	-7243.83		-6923.21		-6854.68	

NOTES: *SE* – Standard error. * and ** respectively indicate statistical significance at the 10 and 5 per cent levels.

Table A8: Estimates for disaggregated occupation and industry groups

	Random effects probit		Broad definition of dismissal		Restricting to full-time employees with at least two years work experience		Excluding employees who quit	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Hospitality, retail or service manager	-0.002	0.0054	-0.002	0.0065	-0.005	0.0061	-0.002	0.006
Business professional	-0.005	0.0043	-0.003	0.0051	-0.005	0.0047	-0.005	0.0047
Design, engineering, science or transport professional	-0.007	0.0056	-0.002	0.0065	-0.007	0.0062	-0.009	0.0062
Education professional	-0.012*	0.0072	-0.012	0.0073	0.000	0.0111	-0.014*	0.0080
Health professional	-0.023**	0.0080	-0.015*	0.0083	-0.027**	0.0105	-0.024**	0.0088
ICT professional	-0.014**	0.0066	-0.008	0.0076	-0.017**	0.0071	-0.016**	0.0073
Legal, social or welfare professional	-0.014*	0.0076	-0.005	0.0080	-0.012	0.0091	-0.014*	0.0084
Engineering, ICT or science technician	-0.007	0.0058	-0.006	0.0070	-0.004	0.0063	-0.007	0.0065
Automotive or engineering trades worker	-0.006	0.0054	-0.003	0.0066	-0.005	0.0058	-0.007	0.0060
Construction trades worker	-0.004	0.0065	-0.002	0.0079	0.001	0.0070	-0.005	0.0072
Electrotechnology or telecommunications trades worker	0.006	0.0059	0.009	0.0074	0.003	0.0064	0.006	0.0066
Food trades worker	-0.005	0.0075	0.000	0.0089	0.002	0.0095	-0.003	0.0084
Skilled animal or horticultural worker	-0.018**	0.0089	-0.012	0.0094	-0.018	0.0123	-0.021**	0.0099
Other technician or trades worker	-0.003	0.0065	-0.006	0.0079	-0.002	0.0077	-0.005	0.0072
Health or welfare support worker	-0.012	0.0094	-0.018*	0.0109	-0.019	0.0132	-0.013	0.0103
Carer or aide	-0.008	0.0065	-0.016**	0.0074	-0.008	0.0106	-0.008	0.0072
Hospitality worker	-0.009	0.0066	-0.011	0.0077	-0.025*	0.0132	-0.009	0.0075
Protective service worker	-0.016	0.0106	-0.015	0.0122	-0.010	0.0133	-0.017	0.0116
Sports or personal service worker	-0.006	0.0085	-0.017*	0.0100	-0.006	0.0148	-0.004	0.0096
Office manager or program administrator	-0.005	0.0060	-0.005	0.0072	0.001	0.0065	-0.005	0.0066
Personal assistant or secretary	-0.013*	0.0075	-0.014	0.0087	-0.002	0.0089	-0.014*	0.0083
General clerical worker	0.000	0.0054	0.007	0.0061	0.003	0.0071	0.001	0.0060
Inquiry clerk or receptionist	-0.009	0.0057	-0.004	0.0065	-0.006	0.0073	-0.008	0.0064
Numerical clerk	-0.013**	0.0055	-0.013*	0.0065	-0.011*	0.0066	-0.014**	0.0061
Clerical or office support worker	-0.015	0.0101	-0.015	0.0112	-0.032*	0.0167	-0.017	0.0112
Other clerical or administrative	0.000	0.0054	0.003	0.0064	0.000	0.0060	0.000	0.0060
Sales representative or agent	0.000	0.0065	-0.003	0.0081	0.004	0.0070	0.001	0.0073
Sales assistant or salesperson	-0.010*	0.0050	-0.015**	0.006	-0.007	0.0071	-0.009*	0.0056
Sales support worker	-0.015**	0.0072	-0.029**	0.0087	-0.016	0.0142	-0.016**	0.0080
Machine or stationary plant operator	0.005	0.0059	0.009	0.0072	0.005	0.0064	0.006	0.0066
Mobile plant operator	-0.009	0.0075	-0.004	0.0087	-0.019**	0.0088	-0.008	0.0083
Road or rail driver	-0.010	0.0061	-0.012	0.0074	-0.009	0.0069	-0.009	0.0068
Storeperson	-0.001	0.0078	0.002	0.0093	-0.002	0.0088	-0.001	0.0087
Cleaner or laundry worker	-0.008	0.0064	-0.016**	0.0076	-0.025*	0.0138	-0.009	0.0071
Construction or mining labourer	0.000	0.0067	0.007	0.0079	0.001	0.0077	0.003	0.0075
Factory process worker	0.001	0.0054	0.007	0.0064	0.000	0.0063	0.001	0.0060
Farm, forestry or garden worker	0.007	0.0077	0.018**	0.0084	0.014	0.0100	0.008	0.0086
Food preparation assistant	-0.015*	0.0077	-0.018**	0.0089	-0.012	0.0175	-0.016*	0.0087
Other labourer	-0.009	0.0063	-0.012	0.0073	-0.004	0.0089	-0.009	0.0070
Mining	0.008	0.0082	-0.005	0.0092	0.008	0.0094	0.010	0.0091
Food, beverage and tobacco manufacturing	0.015**	0.0073	-0.004	0.0081	0.014	0.0090	0.019**	0.0081
Textile, leather, clothing and wood product manufacturing	0.016*	0.0088	-0.001	0.0102	0.010	0.0107	0.019**	0.0098
Pulp, paper and printing	0.007	0.0096	-0.011	0.0114	0.006	0.0111	0.009	0.0107
Mineral, chemical, polymer and rubber manufacturing	0.025**	0.0076	0.014*	0.0085	0.026**	0.0089	0.028**	0.0084
Metal products manufacturing	0.014*	0.008	-0.003	0.0092	0.010	0.0095	0.017*	0.0089
Transport equipment manufacturing	0.009	0.0087	-0.006	0.0099	0.011	0.0098	0.011	0.0097
Machinery and equipment manufacturing	0.018**	0.0081	0.002	0.0093	0.017*	0.0094	0.021**	0.0090
Furniture and other manufacturing	0.018*	0.0100	0.004	0.0117	0.022*	0.0114	0.020*	0.0111

	Random effects probit		Broad definition of dismissal		Restricting to full-time employees with at least two years work experience		Excluding employees who quit	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Utilities and waste collection	0.009	0.0092	-0.001	0.0102	0.009	0.0105	0.011	0.0102
Building construction	0.021**	0.0077	0.006	0.0087	0.020**	0.0091	0.024**	0.0086
Heavy and civil engineering construction	0.025**	0.0092	0.022**	0.0104	0.025**	0.0106	0.028**	0.0103
Construction services	0.015**	0.0072	-0.002	0.008	0.016*	0.0088	0.018**	0.0081
Basic material wholesaling	0.000	0.0103	-0.015	0.0118	-0.011	0.0131	0.002	0.0115
Machinery and equipment wholesaling	0.005	0.0099	-0.009	0.0115	-0.002	0.0117	0.006	0.011
Motor vehicle and motor vehicle parts wholesaling	0.000	0.0143	-0.016	0.0170	0.007	0.0148	0.001	0.0158
Grocery, liquor and tobacco products	0.011	0.0100	-0.002	0.0114	0.008	0.0124	0.013	0.0112
Other wholesaling	0.003	0.0095	-0.011	0.0108	0.008	0.0112	0.004	0.0106
Motor vehicle and motor vehicle parts retailing	0.009	0.0099	-0.009	0.0118	0.005	0.0121	0.011	0.0111
Fuel and food retailing	-0.007	0.0077	-0.033**	0.0086	-0.013	0.0115	-0.006	0.0085
Other retailing	0.004	0.0069	-0.013*	0.0076	0.009	0.0089	0.005	0.0077
Accommodation	0.006	0.0089	-0.008	0.0098	0.008	0.0125	0.010	0.0099
Food and beverage services	0.010	0.0074	-0.011	0.0082	0.011	0.0104	0.015*	0.0083
Transport	0.012	0.0078	-0.002	0.0088	0.012	0.0094	0.015*	0.0087
Postal and courier pick-up and delivery services	-0.003	0.0123	-0.019	0.0138	0.017	0.0166	0.000	0.0137
Transport support services and warehousing	0.016*	0.0085	0.002	0.0096	0.012	0.0103	0.019**	0.0094
Publishing and broadcasting	-0.004	0.0098	-0.013	0.0104	-0.002	0.0117	-0.004	0.0109
Telecommunications and internet	0.028**	0.0081	0.016*	0.0091	0.029**	0.0094	0.031**	0.0090
Library and other information services	-0.014	0.0201	-0.040*	0.0231	-0.263	65.9266	-0.016	0.0222
Finance	0.006	0.0085	-0.006	0.0096	0.005	0.0101	0.009	0.0094
Insurance and superannuation funds	-0.001	0.0106	-0.011	0.0117	0.005	0.0118	-0.001	0.0118
Auxiliary finance and insurance services	0.025**	0.0084	0.016*	0.0095	0.018*	0.0101	0.029**	0.0094
Rental services and property operators	0.009	0.0085	-0.009	0.0098	0.006	0.0109	0.012	0.0096
Professional, scientific and technical services	0.004	0.0069	-0.012	0.0074	0.002	0.0085	0.006	0.0076
Computer system design and related	0.031**	0.0083	0.014	0.0095	0.031**	0.0096	0.036**	0.0092
Administrative services	0.010	0.0081	-0.002	0.0089	0.006	0.0102	0.013	0.0090
Building cleaning, pest control and other support services	0.013	0.0093	0.004	0.0103	-0.011	0.0178	0.016	0.0103
Public administration	-0.012	0.0079	-0.019**	0.0082	-0.008	0.0093	-0.013	0.0087
Defence	-0.016	0.0144	-0.041**	0.0160	-0.043*	0.0234	-0.017	0.0159
Public order, safety and regulatory services	0.008	0.0103	-0.012	0.0117	-0.003	0.0133	0.009	0.0114
Preschool and school education	-0.023**	0.0087	-0.028**	0.0088	-0.043**	0.0138	-0.025**	0.0096
Tertiary education	-0.005	0.0091	-0.009	0.0092	-0.016	0.0126	-0.005	0.0101
Adult, community and other education	-0.010	0.0121	-0.013	0.0121	-0.036	0.0252	-0.010	0.0134
Hospitals	-0.032**	0.0107	-0.044**	0.0104	-0.023*	0.0132	-0.034**	0.0117
Medical and other health care services	-0.010	0.0083	-0.034**	0.0092	-0.005	0.0110	-0.010	0.0092
Residential care services	-0.011	0.0091	-0.036**	0.0104	-0.004	0.0126	-0.011	0.0101
Social assistance services	-0.007	0.0083	-0.022**	0.0089	-0.010	0.0114	-0.007	0.0091
Heritage and creative and performing arts activities	-0.012	0.0137	-0.009	0.0128	-0.034	0.0248	-0.013	0.0153
Sports, recreation and gambling activities	0.000	0.0090	-0.010	0.0098	0.000	0.0128	0.001	0.0101
Repair and maintenance	0.017**	0.0080	0.000	0.0091	0.022**	0.0095	0.020**	0.0089
Personal and other services	0.008	0.0080	-0.002	0.0087	0.012	0.0105	0.011	0.0088

	Including 'number of waves responded' as a regressor		Including 'proportion of in-scope waves responded' as a regressor		Pooled probit	
	Estimate	SE	Estimate	SE	Estimate	SE
Hospitality, retail or service manager	-0.002	0.0054	-0.002	0.0054	-0.003	0.0058
Business professional	-0.005	0.0043	-0.005	0.0043	-0.006	0.0046
Design, engineering, science or transport professional	-0.007	0.0056	-0.007	0.0056	-0.009	0.0060
Education professional	-0.012*	0.0073	-0.013*	0.0073	-0.013*	0.0078
Health professional	-0.023**	0.0080	-0.023**	0.0080	-0.025**	0.0086
ICT professional	-0.014**	0.0066	-0.014**	0.0066	-0.016**	0.0071
Legal, social or welfare professional	-0.014*	0.0076	-0.013*	0.0076	-0.016*	0.0082
Engineering, ICT or science technician	-0.007	0.0059	-0.007	0.0058	-0.007	0.0063
Automotive or engineering trades worker	-0.006	0.0054	-0.006	0.0054	-0.007	0.0058
Construction trades worker	-0.004	0.0065	-0.003	0.0065	-0.005	0.0069
Electrotechnology or telecommunications trades worker	0.006	0.0060	0.006	0.0060	0.006	0.0063
Food trades worker	-0.004	0.0075	-0.004	0.0075	-0.005	0.0080
Skilled animal or horticultural worker	-0.018**	0.0090	-0.018**	0.0089	-0.020**	0.0096
Other technician or trades worker	-0.003	0.0065	-0.003	0.0065	-0.005	0.0069
Health or welfare support worker	-0.012	0.0094	-0.012	0.0094	-0.014	0.0102
Carer or aide	-0.008	0.0065	-0.008	0.0065	-0.008	0.007
Hospitality worker	-0.009	0.0066	-0.009	0.0066	-0.010	0.0071
Protective service worker	-0.016	0.0106	-0.016	0.0106	-0.017	0.0114
Sports or personal service worker	-0.006	0.0086	-0.006	0.0085	-0.006	0.0092
Office manager or program administrator	-0.005	0.006	-0.005	0.0060	-0.006	0.0065
Personal assistant or secretary	-0.013*	0.0075	-0.013*	0.0075	-0.014*	0.0081
General clerical worker	0.000	0.0054	0.000	0.0054	0.000	0.0058
Inquiry clerk or receptionist	-0.008	0.0057	-0.009	0.0057	-0.010	0.0062
Numerical clerk	-0.013**	0.0055	-0.013**	0.0055	-0.014**	0.0059
Clerical or office support worker	-0.015	0.0102	-0.015	0.0102	-0.016	0.0109
Other clerical or administrative	0.000	0.0054	0.000	0.0054	-0.001	0.0059
Sales representative or agent	0.000	0.0065	0.000	0.0065	-0.001	0.0070
Sales assistant or salesperson	-0.009*	0.0051	-0.010*	0.0051	-0.011*	0.0054
Sales support worker	-0.014**	0.0072	-0.015**	0.0072	-0.017**	0.0078
Machine or stationary plant operator	0.005	0.0059	0.005	0.0059	0.005	0.0064
Mobile plant operator	-0.009	0.0075	-0.009	0.0075	-0.010	0.0081
Road or rail driver	-0.010	0.0061	-0.010	0.0062	-0.011*	0.0066
Storeperson	-0.001	0.0078	-0.001	0.0078	-0.001	0.0084
Cleaner or laundry worker	-0.007	0.0064	-0.008	0.0064	-0.008	0.0069
Construction or mining labourer	0.000	0.0067	0.000	0.0067	0.001	0.0072
Factory process worker	0.001	0.0054	0.001	0.0054	0.001	0.0058
Farm, forestry or garden worker	0.007	0.0078	0.007	0.0078	0.007	0.0084
Food preparation assistant	-0.015*	0.0077	-0.015*	0.0077	-0.016*	0.0083
Other labourer	-0.009	0.0063	-0.009	0.0063	-0.010	0.0068
Mining	0.008	0.0082	0.009	0.0082	0.008	0.0088
Food, beverage and tobacco manufacturing	0.015**	0.0073	0.015**	0.0073	0.016**	0.0079
Textile, leather, clothing and wood product manufacturing	0.016*	0.0088	0.016*	0.0088	0.017*	0.0095
Pulp, paper and printing	0.007	0.0096	0.007	0.0096	0.008	0.0103
Mineral, chemical, polymer and rubber manufacturing	0.025**	0.0076	0.025**	0.0076	0.027**	0.0081
Metal products manufacturing	0.014*	0.0080	0.014*	0.008	0.016*	0.0086
Transport equipment manufacturing	0.009	0.0087	0.009	0.0087	0.010	0.0094
Machinery and equipment manufacturing	0.017**	0.0081	0.017**	0.0081	0.019**	0.0087
Furniture and other manufacturing	0.018*	0.0100	0.018*	0.0100	0.021*	0.0108

	Including 'number of waves responded' as a regressor		Including 'proportion of in-scope waves responded' as a regressor		Pooled probit	
	Estimate	SE	Estimate	SE	Estimate	SE
Utilities and waste collection	0.009	0.0092	0.009	0.0092	0.009	0.0099
Building construction	0.021**	0.0077	0.021**	0.0077	0.022**	0.0083
Heavy and civil engineering construction	0.025**	0.0093	0.025**	0.0093	0.027**	0.0100
Construction services	0.015**	0.0072	0.015**	0.0072	0.017**	0.0078
Basic material wholesaling	0.000	0.0103	0.000	0.0103	-0.001	0.0111
Machinery and equipment wholesaling	0.005	0.0099	0.004	0.0099	0.004	0.0107
Motor vehicle and motor vehicle parts wholesaling	0.001	0.0143	0.000	0.0143	0.002	0.0154
Grocery, liquor and tobacco products	0.011	0.0101	0.011	0.0100	0.011	0.0108
Other wholesaling	0.003	0.0096	0.003	0.0096	0.002	0.0103
Motor vehicle and motor vehicle parts retailing	0.010	0.0100	0.009	0.0100	0.010	0.0107
Fuel and food retailing	-0.007	0.0077	-0.007	0.0077	-0.007	0.0083
Other retailing	0.003	0.0069	0.004	0.0069	0.003	0.0075
Accommodation	0.006	0.0089	0.006	0.0089	0.006	0.0095
Food and beverage services	0.011	0.0074	0.010	0.0074	0.011	0.0080
Transport	0.012	0.0079	0.012	0.0078	0.013	0.0084
Postal and courier pick-up and delivery services	-0.003	0.0124	-0.003	0.0124	-0.004	0.0134
Transport support services and warehousing	0.016*	0.0085	0.016*	0.0085	0.018*	0.0091
Publishing and broadcasting	-0.004	0.0099	-0.004	0.0098	-0.005	0.0106
Telecommunications and internet	0.028**	0.0081	0.028**	0.0081	0.030**	0.0087
Library and other information services	-0.014	0.0202	-0.014	0.0202	-0.016	0.0218
Finance	0.006	0.0085	0.006	0.0085	0.006	0.0092
Insurance and superannuation funds	0.000	0.0107	-0.001	0.0106	0.000	0.0114
Auxiliary finance and insurance services	0.025**	0.0084	0.025**	0.0084	0.026**	0.0091
Rental services and property operators	0.009	0.0086	0.009	0.0085	0.010	0.0092
Professional, scientific and technical services	0.004	0.0069	0.004	0.0069	0.004	0.0074
Computer system design and related	0.031**	0.0083	0.031**	0.0083	0.033**	0.0089
Administrative services	0.010	0.0081	0.010	0.0081	0.010	0.0088
Building cleaning, pest control and other support services	0.013	0.0093	0.013	0.0093	0.014	0.0100
Public administration	-0.012	0.0079	-0.012	0.0079	-0.014	0.0085
Defence	-0.016	0.0144	-0.016	0.0144	-0.017	0.0156
Public order, safety and regulatory services	0.008	0.0103	0.007	0.0103	0.008	0.0111
Preschool and school education	-0.024**	0.0088	-0.023**	0.0087	-0.026**	0.0094
Tertiary education	-0.005	0.0091	-0.005	0.0091	-0.006	0.0098
Adult, community and other education	-0.010	0.0121	-0.010	0.0121	-0.010	0.0131
Hospitals	-0.033**	0.0107	-0.033**	0.0107	-0.036**	0.0115
Medical and other health care services	-0.011	0.0083	-0.011	0.0083	-0.011	0.0090
Residential care services	-0.011	0.0092	-0.011	0.0091	-0.013	0.0099
Social assistance services	-0.007	0.0083	-0.007	0.0083	-0.008	0.0089
Heritage and creative and performing arts activities	-0.013	0.0138	-0.013	0.0138	-0.014	0.0149
Sports, recreation and gambling activities	0.000	0.0091	-0.001	0.0091	-0.001	0.0098
Repair and maintenance	0.017**	0.0080	0.017**	0.0080	0.018**	0.0086
Personal and other services	0.008	0.0080	0.008	0.0080	0.009	0.0086

NOTES: *SE* – Standard error. * and ** respectively indicate statistical significance at the 10 and 5 per cent levels.

References

Altonji, Joseph G., and Rebecca M. Blank. 1999. "Race and Gender in the Labor Market." In *Handbook of Labor Economics, Volume 3*, edited by Orley C. Ashenfelter and David Card, pp. 3143-3259. Amsterdam: Elsevier.

Anker, Richard. 1998. *Gender and Jobs: Sex Segregation of Occupations in the World*. International Labour Organization, Washington.

Antcliff, Valerie, and Richard Saundry. 2009. "Accompaniment, Workplace Representation and Disciplinary Outcomes in British Workplaces – Just a Formality?" *British Journal of Industrial Relations* 47(1): 100-121.

Balchin, Jeffrey, and Mark Wooden. 1995. "Absence Penalties and Work Attendance." *Australian Economic Review* 28(4): 43-58.

Barrick, Murray R., Michael K. Mount, and J. Perkins Strauss. 1994. "Antecedents of Involuntary Turnover Due to a Reduction in Force." *Personnel Psychology* 47(3): 515-535.

Blau, Francine D., and Lawrence M. Kahn. 1981. "Causes and Consequences of Layoffs." *Economic Inquiry* 19(2): 270-296.

Booth, Alison L., Marco Francesconi, and Carlos Garcia-Serrano. 2000. "Job Tenure and Job Mobility in Britain." *Industrial and Labor Relations Review* 53(1): 43-70.

Booth, Alison L., and Marco Francesconi. 2000. "Job Mobility in the 1990s Britain: Does Gender Matter?" *Research in Labor Economics* 19: 173-189.

Campbell, Carl M., III. 1997. "The Determinants of Dismissals, Quits, and Layoffs: A Multinomial Logit Approach." *Southern Economic Journal* 63(4): 1966-1073.

European Communities (Group of Experts on Gender, Social Inclusion and Employment). 2006. *The Gender Pay Gap — Origins and Policy Responses: A Comparative Review of 30 European Countries*. Office for Official Publications of the European Communities, Luxembourg.

Fairlie, Robert W. 1999. "The Absence of African-American Owned Business: An Analysis of the Dynamics of Self-Employment."*Journal of Labor Economics* 17(1): 80-108.

Fairlie, Robert W. 2006. "An Extension of the Blinder-Oaxaca Decomposition Technique to Logit and Probit Models." IZA Discussion Paper No. 1917. Bonn: Institute for the Study of Labor.

Freeman, Richard B. 1980. "The Effect of Unionism on Worker Attachment to Firms." *Journal of Labor Research* 1(1): 29-61.

Giuliano, Laura, David I. Levine, and Jonathan Leonard. 2006. "Do Race, Age, and Gender Differences Affect Manager-Employee Relations? An Analysis of Quits, Dismissals, and Promotions at a Large Retail Firm." UC Berkeley: Institute for Research on Labor and Employment. Retrieved from: http://escholarship.org/uc/item/9tc8n5j7

Goerke, Laszlo, and Markus Pannenberg. 2009. "Trade Union Membership and Dismissals." IZA Discussion Paper no. 522. Bonn: Institute for the Study of Labor.

Hagenaars, Aldi J. M., Klaas de Vos and M. Asghar Zaidi. 1994. *Poverty Statistics in the Late 1980s: Research Based on Micro-data*, Office for Official Publications of the European Communities, Luxembourg.

Keith, Kirsten, and McWilliams, Abigail. 1999. "The Returns to Mobility and Job Search by Gender." *Industrial and Labor Relations Review* 52(3): 460-477.

McGuinness, Seamus, and Mark Wooden. 2009. "Overskilling, Job Insecurity, and Career Mobility." *Industrial Relations: A Journal of Economy & Society* 48(2): 265-286.

Orellano, Veronica I.F., and Paulo Picchetti. 2005. "An Analysis of Quit and Dismissal Determinants Between 1988 and 1999 Using the Bivariate Probit Model." *Brazilian Review of Econometrics* 25(1): 3-42.

Picot, Garnett, Zhengxi Lin, and Wendy Pyper. 1998. "Permanent Layoffs in Canada: Overview and Longitudinal Analysis." *Canadian Journal of Economics* 31(5): 1154-1178.

Saucier, Gerard. 1994. "Mini-markers: A Brief Version of Goldberg's Unipolar Big-five Markers." *Journal of Personality Assessment* 63(3): 506-516.

Stumpf, Stephen A., and Patricia Kelly Dawley. 1981. "Predicting Voluntary and Involuntary Turnover Using Absenteeism and Performance Indices." *Academy of Management Journal* 24(1): 148-163.

Summerfield, Michelle (ed) 2010. *'HILDA User Manual – Release 9'*, Melbourne Institute of Applied Economic and Social Research, University of Melbourne.

Theodossiou, I. 2002. "Factors Affecting the Job-to-Joblessness Turnover and Gender." *Labour* 16(4): 729-746.

Verbeek, M., and T. Nijman. 1992. "Testing for Selectivity Bias in Panel Data Models." *International Economic Review* 33(3): 681-703.

Ware, John E., Kristin K. Snow, Mark Kosinski, and Barbara Gandek. 2000. *SF-36 Health Survey: Manual and Interpretation Guide*, QualityMetric Inc., Lincoln, RI.

Wells, Deborah L., and Paul M. Muchinsky. 1985. "Performance Antecedents of Voluntary and Involuntary Managerial Turnover." *Journal of Applied Psychology* 70(2): 329-336.

Watson, Nicole, and Mark Wooden. 2010. "The HILDA Survey Progress and Future Developments." *The Australian Economic Review* 43(3): 326-336.

Wooden, Mark, and Nicole Watson. 2007. "The HILDA Survey and its Contribution to Economic and Social Research (So Far)." *The Economic Record* 83(261): 208-231.