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Job displacement
in Australia: Evidence from
the HILDA survey

Urban Sila

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ECONOMICS DEPARTMENT**JOB DISPLACEMENT IN AUSTRALIA: EVIDENCE FROM THE HILDA SURVEY****ECONOMICS DEPARTMENT WORKING PAPERS No. 1540****By Urban Sila**

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Abstract / Résumé**Job displacement in Australia: Evidence from the HILDA survey**

Australia has a dynamic labour market with high job turnover. According to the HILDA Survey data, about one-fifth of all employees separate from their job every year, and about one fifth of those are displaced workers - laid off for economic reasons. Using multivariate probit regression we find that men, older workers and workers with less than secondary education tend to be displaced more often. In certain industries, such as construction and manufacturing, the incidence of displacement has been higher over the last fifteen years. Workers with lower tenure and casual employees also face a higher probability of displacement. However, a very high proportion - close to 80% percent - of displaced workers find a new job within two years. Among certain groups of workers, the share finding new employment is significantly lower: women, older workers, and less educated workers, workers who had a casual job and part-time workers. However, not all groups search for a job after being displaced. We find evidence that women, older workers and workers in low-skilled occupations are quite likely to exit the labour force following displacement.

JEL Codes: J2, J3, J6

Keywords: Australia; HILDA; household panel; labour market; displaced workers

This Working Paper relates to the 2018 OECD Economic Survey of Australia <http://www.oecd.org/eco/surveys/economic-survey-australia.htm>.

Suppressions d'emplois en Australie : enseignements de l'enquête HILDA

Le marché du travail australien est dynamique et se caractérise par un taux élevé de rotation des emplois. D'après les données de l'enquête sur les ménages, les revenus et la dynamique du marché du travail en Australie (HILDA, *Household, Income and Labour Dynamics in Australia*), environ un cinquième de l'ensemble des salariés quittent leur travail chaque année, et environ un cinquième d'entre eux sont des travailleurs privés de leur emploi – licenciés pour raisons économiques. À partir d'une régression probit multivariée, nous parvenons à la conclusion que les hommes, les seniors et les travailleurs ayant un niveau de formation inférieur au secondaire tendent à être plus fréquemment privés de leur emploi. Dans certaines branches d'activité, telles que la construction et le secteur manufacturier, l'incidence des suppressions d'emplois a été plus élevée au cours des quinze dernières années. Les travailleurs ayant une plus faible ancienneté dans l'emploi et les travailleurs occasionnels se caractérisent également par une probabilité plus élevée d'être privé d'emploi. Néanmoins, une très forte proportion – près de 80 % – des travailleurs ayant perdu leur emploi en trouvent un nouveau au cours des deux années qui suivent. Dans certains groupes de travailleurs, la proportion de ceux qui retrouvent du travail est nettement plus limitée : il s'agit des femmes, des seniors, des personnes ayant un faible niveau de formation, des individus qui occupaient un emploi occasionnel et des travailleurs à temps partiel. Néanmoins, les personnes privées d'emploi ne cherchent pas toutes à retrouver du travail. Certains éléments indiquent que les femmes, les seniors et les personnes exerçant des métiers peu qualifiés sont relativement susceptibles de sortir de la population active après avoir perdu leur emploi.

Codes JEL : J2, J3, J6

Mots clés : Australie ; HILDA ; Panel de ménages ; marché du travail ; travailleurs déplacés

Ce document de travail est lié à l'*Étude économique de l'OCDE* de 2018 consacrée à l'Australie <http://www.oecd.org/fr/eco/etudes/etude-economique-australie.htm>.

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Job displacement in Australia: Evidence from the HILDA survey

By Urban Sila¹

Introduction

1. Over the last two decades, Australia's labour market has been performing well, with solid employment growth and relatively low unemployment. As Australia has a dynamic labour market, job separation is high, most of it voluntary. Yet, there is also a high percentage of workers who are displaced - laid-off for economic reasons. Many of them find a new job soon after displacement, but there are certain groups of workers who are at a significantly higher risk of displacement and who may find it more difficult to move to a new job thereafter.

2. In this paper, we analyse the incidence and consequences of job displacement in Australia using the Household, Income and Labour Dynamics (HILDA) Survey data. We show the evolution in the number of workers dismissed for economic reasons ("displaced") since 2001 and study the characteristics of these workers and their jobs. We also document the probability for displaced workers of finding new employment within a year or two of displacement. We then explore the effects of various worker and job characteristics on the probability of re-employment. In addition, some workers may drop out of the labour force after displacement, which we analyse towards the end of the paper.

3. The paper builds on previous work done in the OECD Employment, Labour and Social Affairs Directorate reported in *Connecting People with Jobs: Key Issues for Raising Labour Market Participation in Australia* (OECD, 2017), *Back to Work: Australia; Improving the Re-employment Prospects of Displaced Workers* (OECD, 2016), and *Back to Work: Re-employment, Earnings and Skill Use after Job Displacement* (OECD, 2013). This paper uses similar techniques and analysis, and it essentially updates the results with the use of newer waves of the HILDA Survey.

Displaced workers: Incidence and characteristics

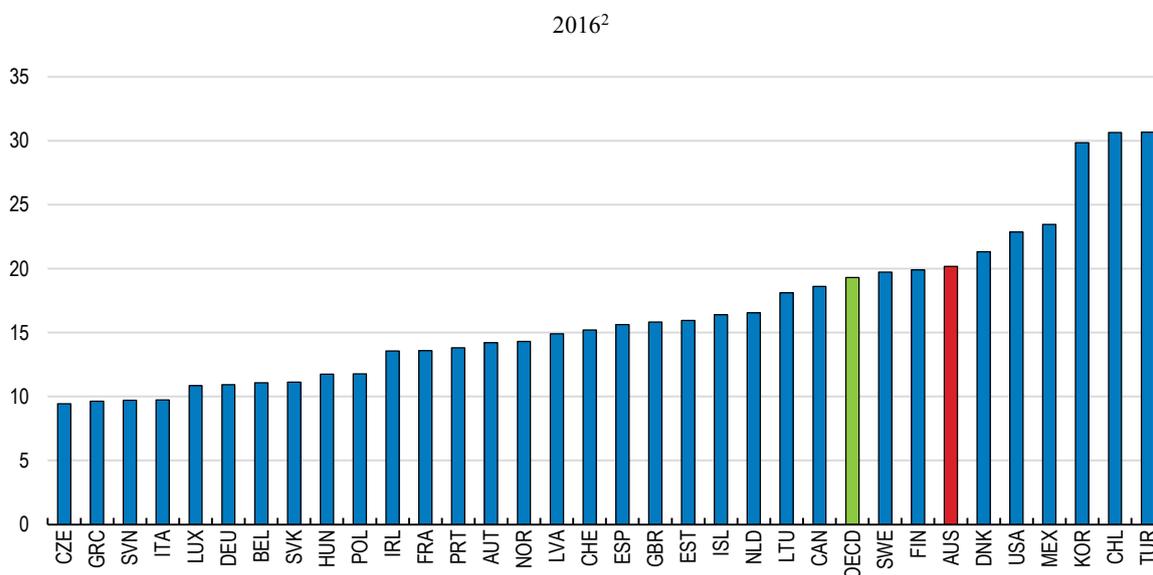
The incidence of displacement

4. Job turnover (i.e. all moves in and out of jobs, for whatever reason) is quite high in Australia compared with most other OECD countries (OECD, 2017 and 2016), suggesting that the country has a dynamic labour market. Based on the OECD job tenure data for the 2016 period, average separation rate (all moves out of jobs, including voluntary, as a share of total employment) is around 20% in Australia (Figure 1), above the OECD average.

¹ Urban Sila is an economist in the Country Studies Branch of the OECD Economics Department. For valuable comments and suggestions the author would like to thank Philip Hemmings and Patrick Lenain (both from OECD Economics Department), and Christopher Prinz and Ann Vourc'h (both from OECD Employment, Labour and Social Affairs Directorate). Statistical assistance from Valéry Dugain and editorial assistance from Stephanie Henry were also greatly appreciated.

Solid employment performance over the last decades in Australia implies that, in general, job vacancy rates have been high.

Figure 1. Australia's separation rate is comparatively high



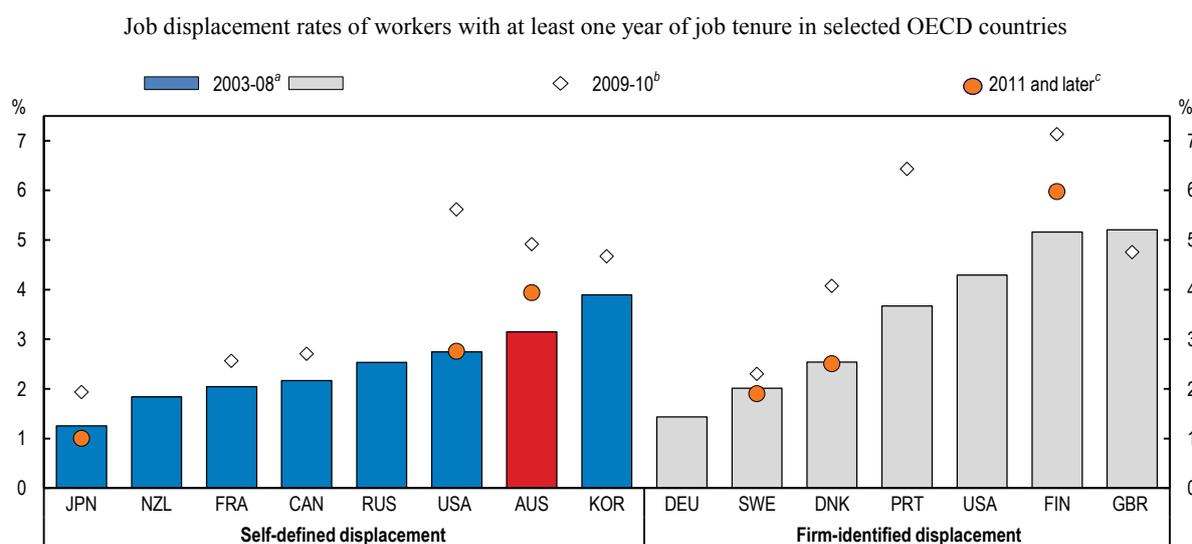
1. Data refer to the difference between the hiring rate and the net employment change.

2. 2015 for Australia. Original data source for Australia is the ABS Labour Force Survey.

Source: OECD, Employment database.

5. The OECD Employment, Labour and Social Affairs Directorate (ELSA) collects and computes internationally comparable data on job displacement. The data on Australia are computed from the HILDA Survey data (see Box 1 for more information), and the displacement rate is defined as the share of employees with tenure of at least one year who were dismissed for economic reasons or for cause (OECD, 2013). The reason to focus on the jobs with tenure longer than one year is that for shorter tenure jobs, separation is more likely to have been due to the firm and employee deciding that they were not well matched rather than for economic reasons related to deteriorating business conditions or the adoption of new production technology. In addition, for purposes of international comparability, those who work in public administration, defence, for private households or international organisations are excluded.

6. Based on this internationally comparable data, displacement rates are relatively high in Australia (Figure 2) in comparison with other OECD countries where displacement is also obtained from household panel surveys (self-reported). This is consistent with the picture of high labour turnover. OECD (2016) speculates that the reason for high job displacement might lie in the relatively low level of employment protection.

Figure 2. Displacement rates in Australia are relatively high

Note: Data refer to percentages of employees aged 20-64 who are displaced from one year to the next, 2003-08, 2009-10 and 2011 and later averages. See Table A1.1 in Annex A.1 of OECD (2013) quoted in the source below, for details on the samples and definitions used for each country.

a) Data refer to an average of 2000-04 for Germany, to an average of 2004-08 for France and the Russian Federation, and for the United States to an average of 2003, 2005 and 2007 for self-defined displacement, and to an average of 2003-07 for firm-identified displacement.

b) Data refer to 2009 for Korea, Portugal and the United States.

c) Data refer to an average of 2011-13 for Australia and Japan, to an average of 2011-12 for Denmark, Finland and Sweden, and to an average of 2011 and 2013 for the United States for self-defined displacement.

d) Self-defined displacement (using household panel data): job separations where the reason given for leaving the previous job is economic reasons (e.g. redundancy, layoff, business slowdown, lack of work, firm closure, mass dismissal, etc.) or dismissal for cause.

e) Firm-identified displacement (using administrative data): job separations from firms that, from one year to the next, experience an absolute reduction in employment of five employees or more and a relative reduction in employment of 30% or more (mass dismissal) or that ceased to operate (firm closure).

Source: OECD (2013), "Back to work: Re-employment, earnings and skill use after job displacement", Final Report, Directorate for Employment Labour and Social Affairs, OECD Publishing, Paris, October, www.oecd.org/els/emp/Backtowork-report.pdf and OECD estimates updated from national microdata.

7. In the following sections, we focus solely on Australia (equivalent in-depth analysis for other countries is beyond the scope of this paper). We relax some of the assumptions used in the OECD's internationally comparable data. First, we define displacement as all job separations due to economic reasons or for cause, of any tenure. While there is good reason to think that some job separations before the completed first year are due to employee and employer learning that they are not a good fit, we believe that many in fact are for economic reasons. That this is indeed the case is also reflected in the cyclical nature of the percentage of workers with tenure of less than one year who are displaced over years (Figure 3). Second, we consider all economic sectors, including public administration, defence, and those who work for private households, as we are interested in the whole economy. Widening the scope of the data also means a greater number of observations, allowing for more granular analysis and higher precision of results.

Box 1. HILDA Survey

The Household, Income and Labour Dynamics in Australia (HILDA) Survey is a household-based panel study that started in 2001 and collects data on about 17,000 Australians each year. The data cover many aspects of life, including household and family relationships, childcare, income and employment, education, expenditure, health and wellbeing, and other life events. At less frequent intervals, the survey collects additional information on various topics, as for example on household wealth, which has been conducted every four years since the second wave in 2002.

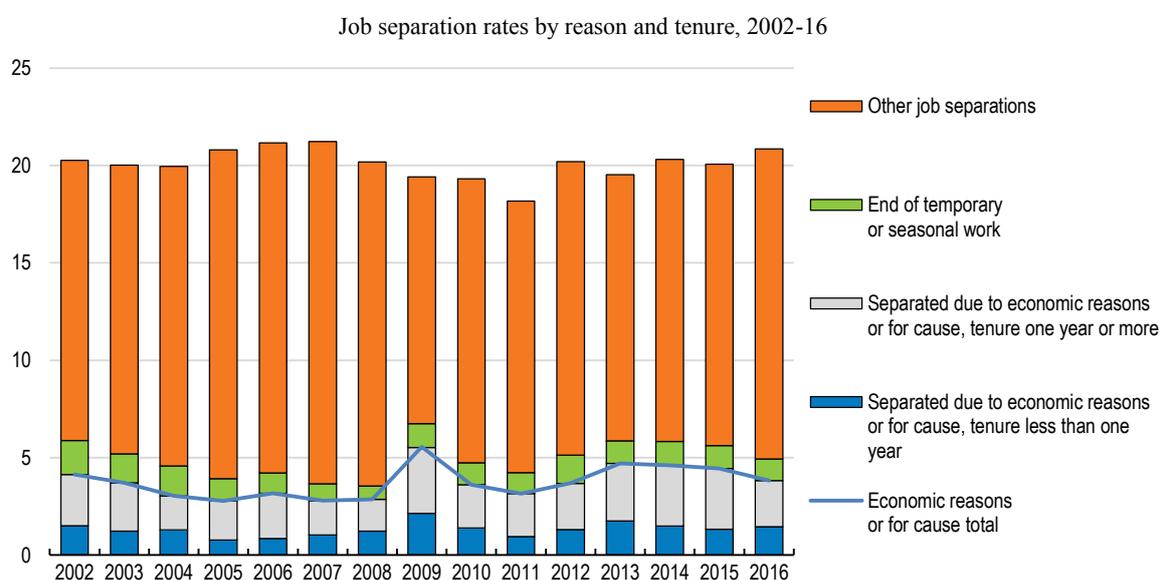
As this is a panel data set, participants are surveyed every year and population weights are provided so that statistics computed from the data can represent estimates for the Australian population. For wave 1 of the survey, households were selected such that representativeness of the reference population was ensured. Children born or adopted in these households also become members of the sample. All members of the selected households count as members of the sample, although individual interviews are only conducted with those aged 15 years and over.

Shifts in population composition (for instance due to immigration) and sample attrition (e.g. participants dropping out due to refusal to participate or problems in locating them) make a sample less representative of the whole population over time. To correct for immigration, in wave 11, a general sample top-up was conducted which allowed immigrants who had arrived between 2001 and 2011 to enter the HILDA Survey sample. To correct for attrition, sample weights are changed each year to adjust for differences between the characteristics of the panel sample and the characteristics of the Australian population.

The HILDA Survey is funded by the Australian Government through the Department of Social Services. The Melbourne Institute is responsible for the design and management of the Survey. For more information visit <http://melbourneinstitute.unimelb.edu.au/hilda>.

8. The HILDA data allow a detailed look at the reasons for job separation. The overall separation rate based on the HILDA data is, reassuringly, similar to that shown in Figure 1; about one-fifth of all employees aged 20-64 are separated from their job every year (Figure 3). Only a minority of job separations tend to be for economic reasons. According to HILDA data, about one fifth of workers who separated from their jobs in 2016 (in effect the fiscal year 2015-16) were displaced workers – i.e. dismissed by their employers for economic reason or for cause (Figure 3).

9. As shown in Figure 3, the incidence of displaced workers (among all workers) increased sharply in 2009 during the global financial crisis, then fell back down, but crept up again in 2013 and has remained at elevated levels - higher than before the crisis - since. While the incidence of displacement rose during the crisis, the incidence of other job separations fell. Many of these separations are voluntary, including separations for reasons such as job dissatisfaction, moves to new jobs, starting a new business, retirement, sickness, disability or injury, pregnancy or study.

Figure 3. About one in five employees are separated from their job every year

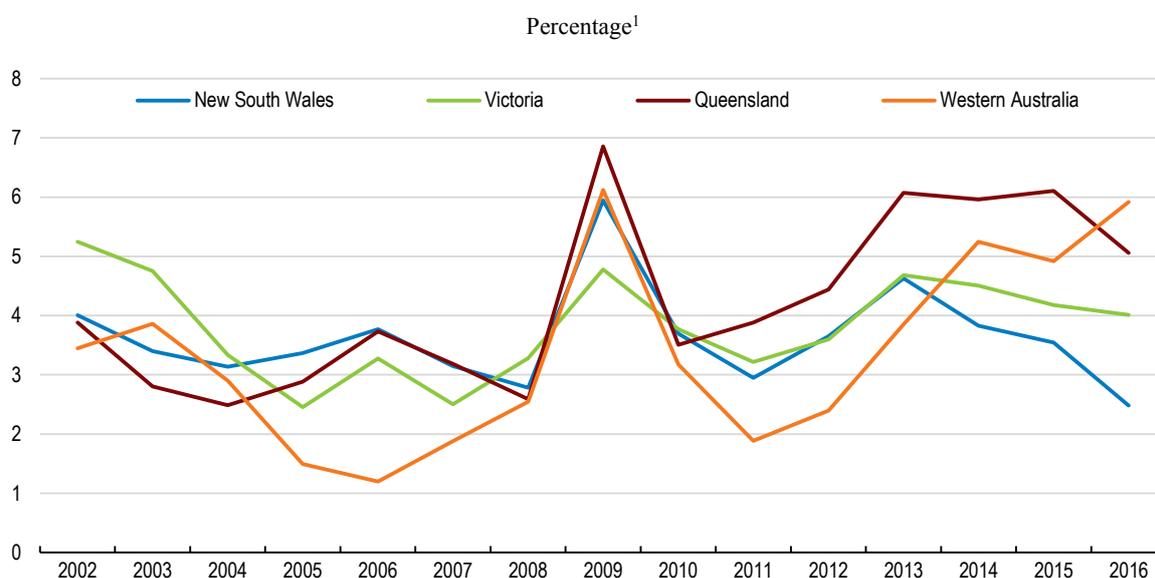
Source: OECD estimates based on data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey.

10. State-level data on job displacement underscore, in particular, the uneven geographic impact of the slowdown in resource-sector investment and the falls in commodity prices, that began in 2012. Figure 4 shows the displacement rates for the larger States (sample-size issues precluded inclusion of all States and Territories). After falling before the crisis, displacement increased and remains higher than before the crisis in resource-rich Queensland, and Western Australia.

Characteristics affecting displacement - results from a probit regression

11. Certain groups of workers are more at risk of displacement than others. We estimate the probability of displacement, controlling for various worker and job characteristics. As expected, we find that older and less educated workers are displaced more often. We also find that construction and manufacturing workers have been displaced more often over the last fifteen years. Men, casual employees and employees with lower tenure also face higher risk of displacement. In what follows we describe our methodology and results in more detail.

Figure 4. Displacement across major states



1. Percentage of employees aged 20-64 who are displaced (separated due to economic reason or for cause) from one year to the next.

Source: OECD estimates based on data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey.

12. To identify how personal and job characteristics affect the probability of being displaced, we run a multivariate probit where the dependent categorical variable indicates whether a worker has been displaced or not (an approach also used in OECD, 2016). We include the following controls: sex, age, education, industry, occupation, tenure, contract type, working time, sector and region. In Table 1, we report the marginal effects from four regression specifications. They differ in the inclusion of firm size dummies and time dummies. The inclusion of the firm size variable significantly reduces the sample size, in particular in the early years of the sample, therefore we report results both with and without this variable. Another difference is the inclusion of dummies for all years or a single post-crisis dummy (equal to one from 2008 onwards, zero otherwise) instead.

13. The coefficients estimated by probit show the significance and direction of the effect that control variables have on the outcome probability, but they do not directly quantify marginal effects. Following common practice, the latter are calculated for the mean values of the control variables and are shown in Table 1. While choosing a specific value affects the size of the marginal effect, it does not affect the direction or statistical significance.

14. From Table 1 we can see that men have a higher probability of being displaced than women, even after controlling for characteristics such as sector and occupation. With respect to age, workers older than 45 years, and in particular above the age of 55, are at higher risk of being displaced compared to younger workers. Lower level of educational attainment tends to raise the probability of displacement. In particular, workers with less than secondary education have high probability to be displaced. Furthermore, according to HILDA data, in comparison with the "Other services" (hotels and restaurants, education, health and social work and other social and personal services), workers in some industries have a much higher risk of being displaced: construction workers, manufacturing workers, but also workers in finance and business services. In terms of occupations, compared to

professionals there is evidence that managers and tradespersons have a higher risk of being displaced. On the other hand, skilled agricultural workers have a lower probability of being displaced. There is also tentative evidence that elementary occupations have a higher probability of displacement.

15. There is a clear pattern that workers with lower tenure have a higher probability of being displaced. Risk of displacement is particularly high for workers with tenure less than one year. Similarly, casual employees have a much higher probability of being displaced than permanent workers. Fixed-term workers, while they have a lower probability of being displaced than casual workers, are still more at risk than permanent workers. On the other hand, there is no statistically significant difference in probability of displacement between part-time and full-time employees. Public sector workers face much lower displacement rates than workers in the private sector. With respect to firm size (columns (2) and (4)), workers in bigger firms tend to be at lower risk of being displaced.

16. In terms of regional variation, according to the HILDA data over the last 15 years, in Queensland and the Northern Territory the risk of displacement has been higher compared to the New South Wales, even after controlling for education, industry and occupation mix. In South Australia and Western Australia, on the other hand, the risk of displacement has been lower. As we control for industry, occupation, education, gender firms size and other characteristics, interpretation of these differences is not straightforward.

17. Finally, the coefficient on the post-crisis time dummy (equal to one from 2008 onwards) confirms that the risk of displacement has been significantly higher in the post crisis period than before, as we saw already above in Figures 2 and 3. As the estimates are based on a short period of time, it is difficult to argue that this represents a permanent change, but it should nevertheless serve as a reminder to Australian policy makers that the problem of displacement could become more serious in the future.

18. To present the results in a more intuitive way, in Figure 5 we show predicted marginal probabilities across all groups. Here, the predicted probabilities are based on specification (4) from Table 1, and are computed at the mean value of all RHS variables with the aim to be as close as possible to average probabilities in the sample. It is important to remember that the panels in Figure 5 show point estimates. While the estimated marginal probability of becoming displaced for each group is statistically different from zero (not shown), differences across groups are not necessarily statistically different from zero, as we already know from Table 1, where we report standard errors and level of statistical significance across categories. For example, for the age variable in the top row of Figure 5 we can observe that probability of becoming displaced increases with age. However, we see in Table 1 that age groups 45-54 and 55-64 have statistically significantly higher probability of displacement compared to group 35-44, but for the two groups of younger workers (20-24 and 25-34) the differences are not statistically significant, even though the point estimates are visibly lower.

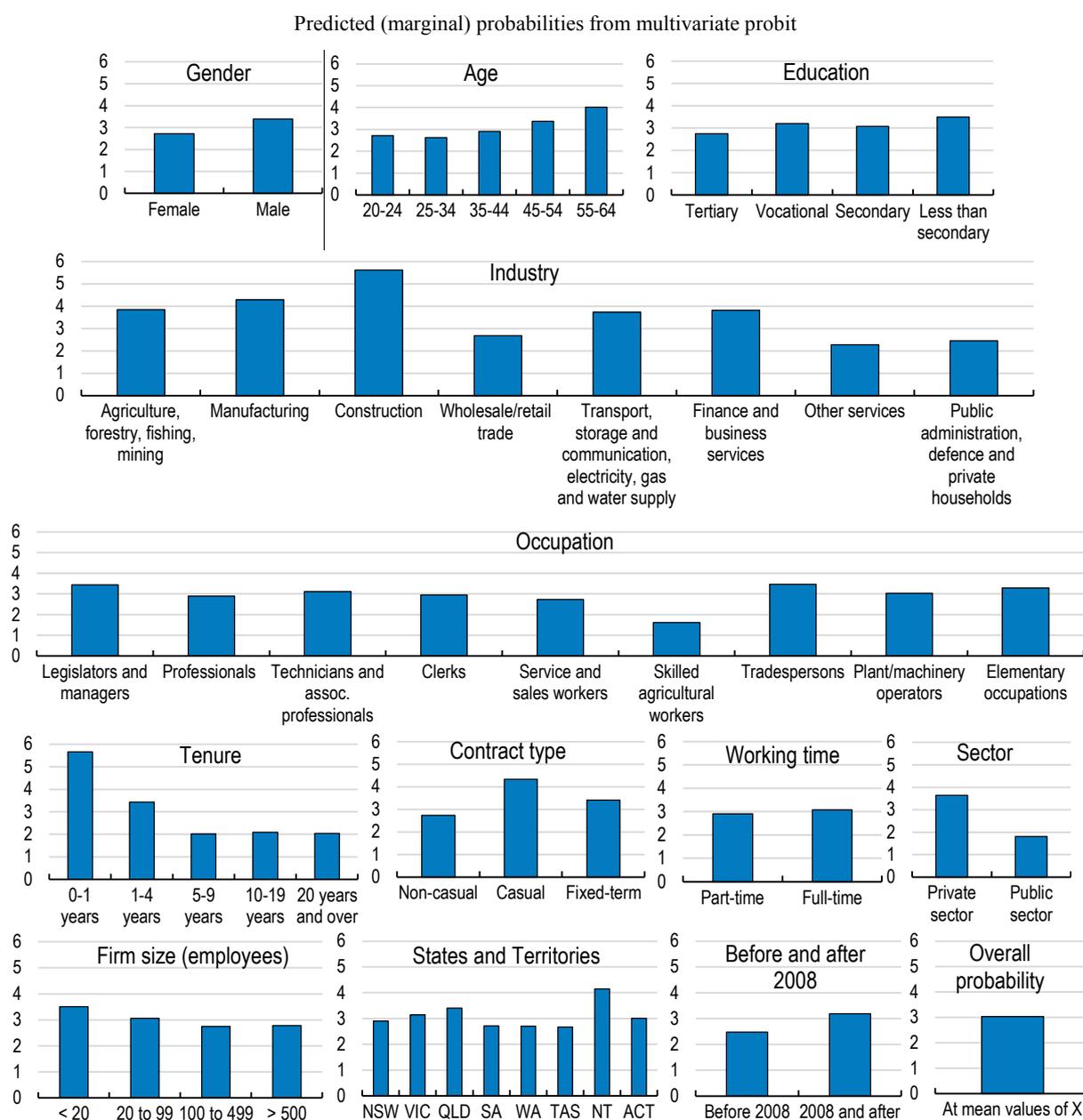
Table 1. Probability of being displaced - results from multivariate probit

	(1)	(2)	(3)	(4)
Dependent variable: Displaced due to economic reasons or for cause				
Gender				
Men vs. Women	0.635*** (0.127)	0.650*** (0.145)	0.647*** (0.129)	0.669*** (0.146)
Age				
20-24 vs. 35-44	-0.191 (0.169)	-0.182 (0.192)	-0.194 (0.170)	-0.190 (0.194)
25-34 vs. 35-44	-0.306** (0.141)	-0.291* (0.162)	-0.292** (0.142)	-0.282* (0.164)
45-54 vs. 35-44	0.385** (0.161)	0.460** (0.184)	0.384** (0.162)	0.463** (0.186)
55-64 vs. 35-44	1.068*** (0.222)	1.098*** (0.248)	1.078*** (0.223)	1.118*** (0.251)
Education				
Vocational vs. Tertiary	0.368** (0.154)	0.461*** (0.176)	0.369** (0.156)	0.457** (0.178)
Secondary vs. Tertiary	0.347** (0.169)	0.356* (0.192)	0.335** (0.170)	0.337* (0.194)
Less than secondary vs. Tertiary	0.822*** (0.177)	0.776*** (0.202)	0.807*** (0.177)	0.746*** (0.203)
Industry				
Agriculture, forestry, fishing, mining vs. Other services	1.294*** (0.318)	1.514*** (0.376)	1.321*** (0.322)	1.567*** (0.381)
Manufacturing vs. Other services	1.807*** (0.236)	1.999*** (0.274)	1.814*** (0.237)	2.015*** (0.277)
Construction vs. Other services	3.016*** (0.337)	3.282*** (0.381)	3.045*** (0.339)	3.344*** (0.385)
Wholesale/retail trade vs. Other services	0.331** (0.161)	0.373** (0.183)	0.333** (0.163)	0.399** (0.186)
Transport, storage and communication, electricity, gas and water supply vs. Other services	1.287*** (0.250)	1.433*** (0.289)	1.295*** (0.252)	1.450*** (0.292)
Finance and business services vs. Other services	1.486*** (0.187)	1.521*** (0.210)	1.490*** (0.189)	1.546*** (0.212)
Public administration, defence and private households vs. Other services	0.122 (0.254)	0.157 (0.285)	0.119 (0.256)	0.170 (0.290)
Occupation				
Legislators and managers vs. Professionals	0.740*** (0.226)	0.513** (0.254)	0.761*** (0.229)	0.545** (0.258)
Technicians and assoc. professionals vs. Professionals	0.300 (0.192)	0.206 (0.220)	0.305 (0.194)	0.221 (0.223)
Clerks vs. Professionals	0.037 (0.201)	0.060 (0.235)	0.034 (0.203)	0.047 (0.238)
Service and sales workers vs. Professionals	-0.007 (0.217)	-0.157 (0.248)	-0.013 (0.218)	-0.167 (0.251)
Skilled agricultural workers vs. Professionals	-0.699* (0.414)	-1.223*** (0.420)	-0.729* (0.414)	-1.273*** (0.420)
Tradespersons vs. Professionals	0.916*** (0.279)	0.578* (0.309)	0.914*** (0.281)	0.565* (0.312)
Plant/machinery operators vs. Professionals	0.238 (0.261)	0.140 (0.301)	0.247 (0.263)	0.139 (0.304)
Elementary occupations vs. Professionals	0.541** (0.256)	0.415 (0.298)	0.539** (0.258)	0.391 (0.300)

Probability of being displaced - results from multivariate probit (continued)

	(1)	(2)	(3)	(4)
Tenure				
0-1 years vs. 1-4 years	2.040*** (0.192)	2.199*** (0.219)	2.049*** (0.193)	2.227*** (0.221)
5-9 years vs. 1-4 years	-1.343*** (0.137)	-1.412*** (0.154)	-1.339*** (0.138)	-1.419*** (0.156)
10-19 years vs. 1-4 years	-1.356*** (0.155)	-1.329*** (0.179)	-1.347*** (0.156)	-1.340*** (0.181)
20 years and over vs. 1-4 years	-1.353*** (0.197)	-1.368*** (0.226)	-1.344*** (0.199)	-1.391*** (0.228)
Contract type				
Casual vs. Permanent	1.497*** (0.189)	1.561*** (0.217)	1.534*** (0.191)	1.599*** (0.220)
Fixed-term vs. Permanent	0.640*** (0.196)	0.677*** (0.223)	0.644*** (0.197)	0.683*** (0.225)
Working time				
Part time vs. Full time	-0.173 (0.149)	-0.149 (0.171)	-0.181 (0.151)	-0.164 (0.173)
Sector				
Public vs. Private	-1.914*** (0.145)	-1.779*** (0.170)	-1.938*** (0.146)	-1.834*** (0.171)
Firm size				
Less than 20 employees vs. 20-99 employees		0.466*** (0.165)		0.449*** (0.166)
100-499 employees vs. 20-99 employees		-0.386** (0.157)		-0.319** (0.160)
More than 500 employees vs. 20-99 employees		-0.232 (0.204)		-0.288 (0.204)
Region				
Victoria vs. New South Wales	0.217 (0.144)	0.230 (0.162)	0.229 (0.145)	0.249 (0.164)
Queensland vs. New South Wales	0.365** (0.153)	0.514*** (0.174)	0.368** (0.154)	0.513*** (0.176)
South Australia vs. New South Wales	-0.224 (0.191)	-0.163 (0.219)	-0.230 (0.193)	-0.177 (0.222)
Western Australia vs. New South Wales	-0.227 (0.190)	-0.192 (0.217)	-0.218 (0.192)	-0.192 (0.220)
Tasmania vs. New South Wales	-0.470 (0.287)	-0.234 (0.339)	-0.474 (0.290)	-0.229 (0.344)
Northern Territory vs. New South Wales	1.246* (0.677)	1.244* (0.748)	1.249* (0.680)	1.252* (0.754)
Australian Capital Territory vs. New South Wales	0.205 (0.413)	0.103 (0.453)	0.204 (0.416)	0.116 (0.459)
Time dummies				
Year dummies	yes	yes		
Post-crisis dummy			0.751*** (0.108)	0.714*** (0.140)
No. of observations	92,495	74,861	92,495	74,861
R-squared	0.069	0.070	0.066	0.066
Probability of displacement (at mean value for all X)	2.858	2.980	2.895	3.035

Standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Based on employees of age 20-64, 2001-2016. No sample weights are used in the regressions. Marginal effects are computed for the mean values of all RHS variables.

Figure 5. Displacement risks vary across groups of workers¹

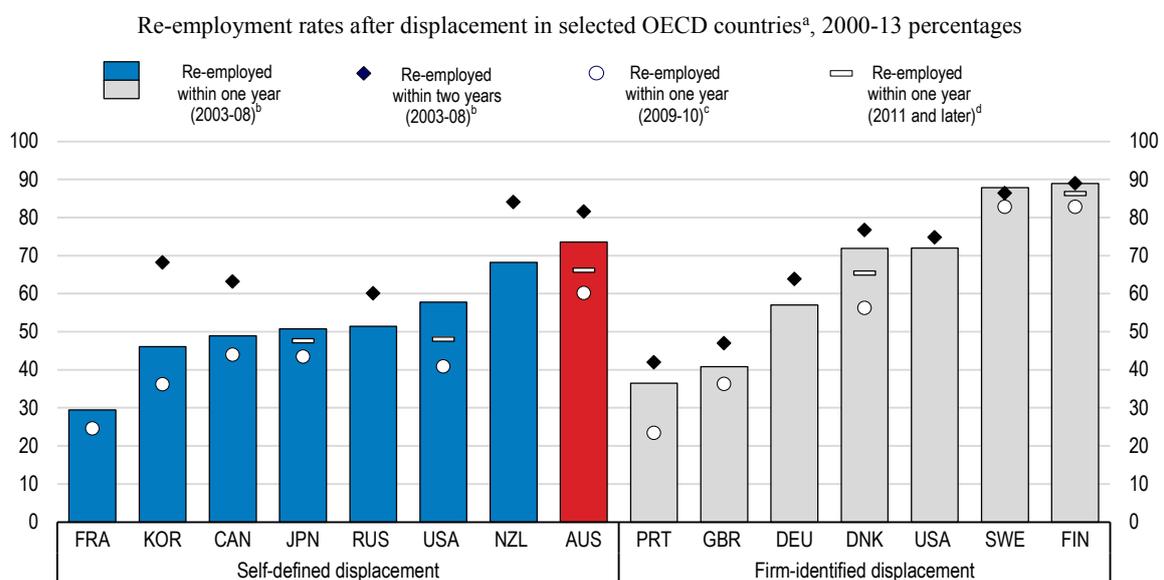
1. Based on specification (4) from Table 1. Predicted marginal probabilities are evaluated at the mean value of all RHS variables.

Re-employment of displaced workers

19. A large share of displaced workers finds another job quite rapidly following displacement. The OECD ELSA Directorate calculates re-employment rates for displaced workers for a number of OECD countries using comparable time periods, samples of workers and definitions of displacement (OECD, 2013). In comparison to other OECD countries, re-employment rates are very high in Australia (Figure 6). In part, this reflects the relatively healthy state of the Australian economy in the past couple of decades and

labour market dynamism and flexibility. In Australia, displaced workers also have higher education levels and longer work experience compared with other unemployed people (OECD, 2016), something that may positively affect their employability. Yet, the HILDA Survey, which is the source for these re-employment computations for Australia, may give rise to slightly exaggerated numbers. Re-employment probabilities obtained from the ABS Labour Mobility Survey result in lower numbers. Despite such reservations, we believe that HILDA data is well suited for the analysis in this paper, as we are interested in understanding changes over time, and in the interactions of re-employment probabilities with worker and job characteristics.

Figure 6. Displaced workers find new jobs much more rapidly in some OECD countries than in others



a) For countries with self-defined definition of job displacement, data refer to workers who lose their job for economic reasons, due to the end of a temporary contract or for cause. For countries with firm-identified definition of job displacement, data refer to workers who lose their job due to a mass layoff or firm closure. For full details of the data sources and methodology, see Table A1.1 in Annex A.1 of OECD (2013).

b) Data refer to an average of 2000-08 for Canada, to an average of 2004-08 for France and the Russian Federation, to an average of 2000-04 for Germany, and to an average of 2004, 2006 and 2008 for the United States. There are no data on re-employment within two years for France and for the United States.

c) Data refer to 2009 for Korea, Portugal and Sweden, and to 2010 for the United States for self-defined displacement.

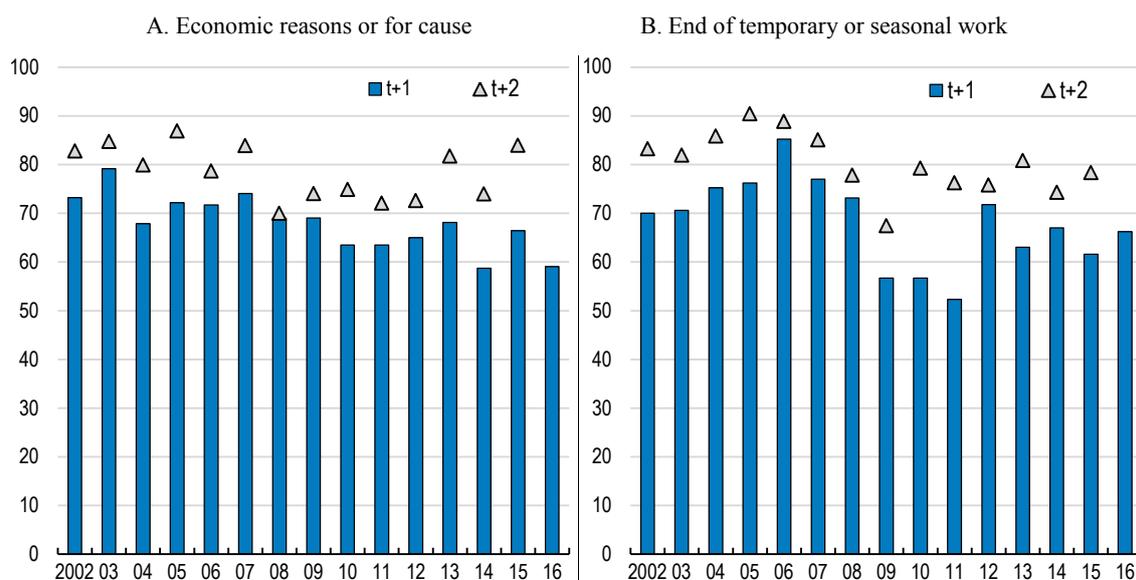
d) Data refer to an average of 2011-13 for Australia and Japan, to an average of 2011-12 for Denmark and Finland, and to an average of 2012 and 2014 for the United States for self-defined displacement.

Source: OECD (2013), "Back to work: Re-employment, earnings and skill use after job displacement", Final Report, Directorate for Employment Labour and Social Affairs, OECD Publishing, Paris, October, www.oecd.org/els/emp/Backtowork-report.pdf and OECD estimates updated from national microdata.

20. According to the HILDA data, over the total duration of the sample about 80% of displaced workers find employment within two years of displacement. Figure 7 shows the share of workers that find employment within one or two years from being laid off, for two types of workers: displaced workers (for economic reasons or for cause) and for those who lost their job due to end of temporary or seasonal work. According to Figure 7, a higher share of laid off workers is employed two years after displacement as compared to one year after displacement. Interestingly, for workers who lost their jobs due to end of temporary

or seasonal work, the probability of finding work within one year is very cyclical, but this cyclicity is strongly reduced for the two-year time span. Another striking feature from Figure 7 is the significant reduction of re-employment probabilities after the global financial crisis. The probability for displaced workers to find employment within a year has been reduced. The probability of finding work within two years has however risen again since 2013. This may indicate that the time to find a new job has become longer.

Figure 7. Share of workers that find employment after being laid-off



Source: Own calculations based on HILDA survey data.

21. The probability and speed of re-employment vary across groups of workers. In Table 2, we present results from a multivariate probit regression that estimates the probability of re-employment for displaced workers, two years after displacement. As in the previous section, we ran four different specifications: with and without the firm size variables, and with all year dummies included or just the post-crisis dummy. As before, in Figure 8 we also present predicted marginal probabilities across worker and job characteristics, evaluated at means of RHS variables. However, this time we show predicted probabilities only for selected groups of characteristic – those for which estimated coefficients are statistically different from zero.

22. Table 2 and Figure 8 provide tentative evidence that re-employment is greater for men than women, either reflecting that men find new jobs more easily or that displacement prompts greater labour-market withdrawal among women than men (discussed further below). Older workers, on top of facing higher risk of displacement, are less likely to re-enter employment than younger workers after being displaced. This might of course reflect that job loss triggers decisions to retire early (we turn to this below). The chance of finding a job after being displaced is also lower for less educated workers, in particular for workers that have not completed secondary education. Differences across industries are not statistically significant. Only for manufacturing there is tentative evidence that after controlling for other characteristics, the probability of finding a new job is lower. As reported above, after the global financial crisis, the probability of finding employment has decreased.

Table 2. Probability of being re-employed within 2 years from displacement

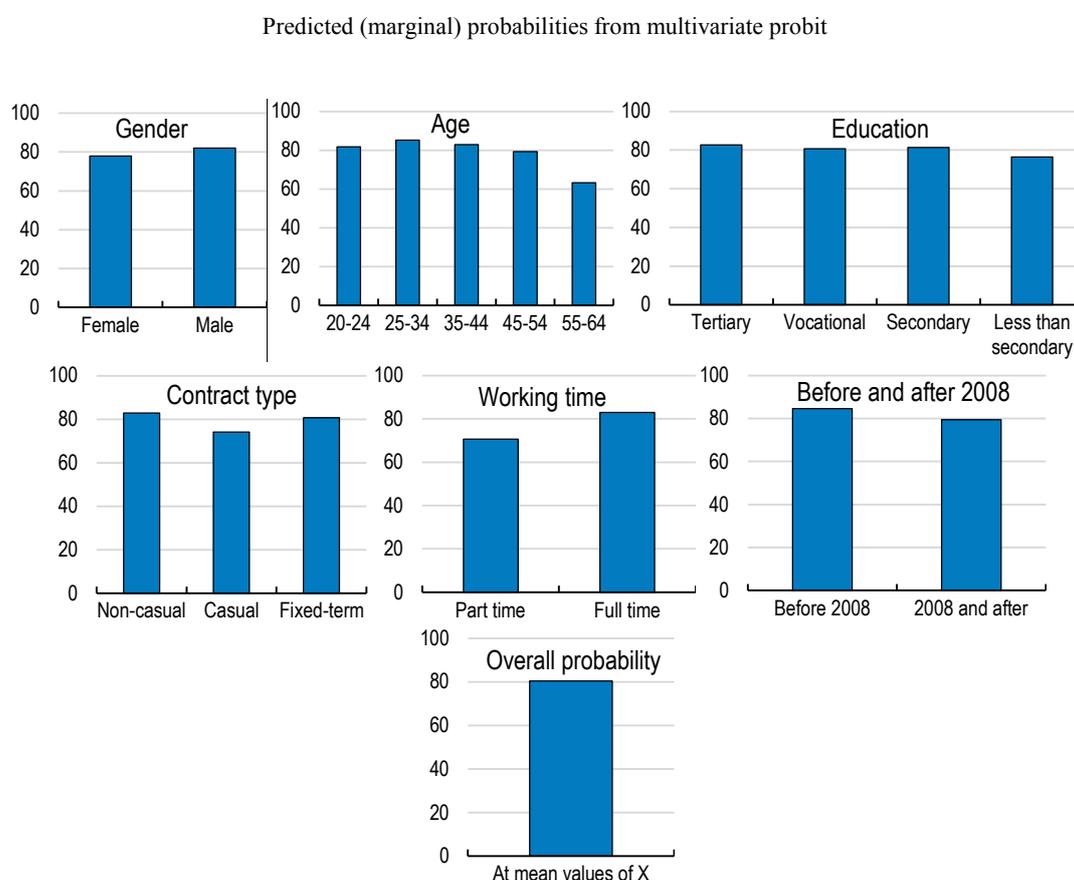
	(1)	(2)	(3)	(4)
Dependent variable: Employment status two years from displacement				
Gender				
Men vs. Women	2.861 (1.850)	4.298** (2.062)	2.881 (1.848)	4.200** (2.060)
Age				
20-24 vs. 35-44	-1.542 (2.375)	-1.333 (2.683)	-1.416 (2.378)	-1.235 (2.694)
25-34 vs. 35-44	0.818 (1.996)	2.134 (2.251)	0.864 (2.008)	2.262 (2.269)
45-54 vs. 35-44	-4.285** (2.145)	-3.811 (2.415)	-4.188* (2.147)	-3.624 (2.422)
55-64 vs. 35-44	-21.273*** (3.116)	-20.444*** (3.454)	-20.805*** (3.093)	-19.780*** (3.428)
Education				
Vocational vs. Tertiary	-1.882 (2.218)	-2.109 (2.456)	-1.933 (2.220)	-1.893 (2.461)
Secondary vs. Tertiary	-1.509 (2.449)	-1.826 (2.751)	-1.303 (2.431)	-1.286 (2.725)
Less than secondary vs. Tertiary	-6.754*** (2.405)	-6.158** (2.707)	-6.986*** (2.400)	-6.251** (2.712)
Industry				
Agriculture, forestry, fishing, mining vs. Other services	-0.467 (3.865)	-2.529 (4.419)	0.664 (3.750)	-1.059 (4.265)
Manufacturing vs. Other services	-7.737*** (3.004)	-10.150*** (3.429)	-7.415** (2.996)	-10.137*** (3.433)
Construction vs. Other services	2.350 (2.846)	1.163 (3.130)	2.280 (2.872)	1.090 (3.164)
Wholesale/retail trade vs. Other services	-5.055* (2.699)	-5.428* (2.963)	-4.978* (2.710)	-5.346* (2.978)
Transport, storage and communication, electricity, gas and water supply vs. Other services	-3.096 (3.254)	-6.122* (3.719)	-2.717 (3.244)	-5.488 (3.696)
Finance and business services vs. Other services	-0.564 (2.415)	-0.873 (2.629)	-0.469 (2.424)	-0.697 (2.640)
Public administration, defence and private households vs. Other services	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Occupation				
Legislators and managers vs. Professionals	3.880 (3.109)	4.815 (3.558)	4.251 (3.112)	5.193 (3.542)
Technicians and assoc. professionals vs. Professionals	1.344 (2.960)	2.544 (3.333)	1.191 (2.977)	2.234 (3.343)
Clerks vs. Professionals	-4.217 (3.305)	-2.464 (3.706)	-3.917 (3.306)	-2.430 (3.700)
Service and sales workers vs. Professionals	-0.388 (3.447)	0.060 (3.951)	-0.005 (3.445)	-0.007 (3.962)
Skilled agricultural workers vs. Professionals	-1.207 (9.345)	-4.504 (11.622)	-1.237 (9.503)	-4.512 (11.733)
Tradespersons vs. Professionals	0.896 (3.648)	2.997 (4.125)	1.069 (3.668)	3.092 (4.138)
Plant/machinery operators vs. Professionals	-4.368 (4.005)	-0.540 (4.407)	-3.798 (3.998)	-0.302 (4.402)
Elementary occupations vs. Professionals	-4.594 (3.647)	-1.042 (4.088)	-4.496 (3.663)	-1.033 (4.094)

Probability of being re-employed within 2 years from displacement (continued)

	(1)	(2)	(3)	(4)
Tenure				
0-1 years vs. 1-4 years	0.797 (1.778)	1.080 (1.954)	1.001 (1.773)	1.325 (1.952)
5-9 years vs. 1-4 years	-0.379 (2.461)	-2.585 (2.848)	-0.653 (2.476)	-2.990 (2.869)
10-19 years vs. 1-4 years	1.883 (2.789)	3.648 (3.025)	1.580 (2.809)	3.380 (3.058)
20 years and over vs. 1-4 years	-7.995* (4.304)	-7.481 (4.851)	-8.358* (4.324)	-7.681 (4.863)
Contract type				
Casual vs. Permanent	-5.213** (2.097)	-8.671*** (2.407)	-5.523*** (2.097)	-8.730*** (2.405)
Fixed-term vs. Permanent	-2.140 (2.724)	-2.491 (2.957)	-2.166 (2.721)	-2.159 (2.935)
Working time				
Part time vs. Full time	-15.198*** (2.438)	-12.455*** (2.649)	-14.895*** (2.426)	- (2.638)
Sector				
Public vs. Private	-3.716 (3.220)	-3.406 (3.605)	-3.380 (3.200)	-3.271 (3.602)
Firm size				
Less than 20 employees vs. 20-99 employees		-0.151 (2.008)		-0.029 (2.015)
100-499 employees vs. 20-99 employees		-1.122 (2.480)		-0.929 (2.457)
More than 500 employees vs. 20-99 employees		1.847 (3.100)		2.114 (3.091)
Region				
Victoria vs. New South Wales	0.093 (2.017)	-0.744 (2.267)	0.024 (2.021)	-0.834 (2.274)
Queensland vs. New South Wales	-1.230 (2.115)	-1.136 (2.328)	-1.058 (2.108)	-0.930 (2.322)
South Australia vs. New South Wales	-1.107 (2.988)	0.511 (3.259)	-1.182 (2.998)	0.578 (3.266)
Western Australia vs. New South Wales	0.270 (2.978)	-0.666 (3.381)	0.465 (2.963)	-0.182 (3.357)
Tasmania vs. New South Wales	2.464 (4.557)	1.165 (5.004)	1.916 (4.658)	0.074 (5.174)
Northern Territory vs. New South Wales	5.485 (5.821)	2.608 (6.986)	5.676 (5.841)	2.770 (7.034)
Australian Capital Territory vs. New South Wales	1.735 (5.802)	3.061 (6.234)	1.147 (5.927)	2.133 (6.506)
Time dummies				
Year dummies	yes	yes		
Post-crisis dummy			-4.858*** (1.547)	-5.185*** (1.995)
No. of observations	2,946	2,441	2,946	2,441
R-squared	0.105	0.104	0.098	0.095
Probability of displacement (at mean value for all X)	81.211	80.734	81.023	80.452

Standard errors in parentheses (*** p<0.01, ** p<0.05, * p<0.1). Based on employees of age 20-64, 2001-2016. No sample weights are used in the regressions. Marginal effects are computed for the mean values of all RHS variables.

Figure 8. The probability of finding employment following displacement differs across groups of workers¹



1. Predicted probabilities from multivariate probit - specification (4) from Table 2. Predicted marginal probabilities are evaluated at the mean value of all RHS variables. Only selected characteristics are shown - those that show some statistically significant variation across different values.

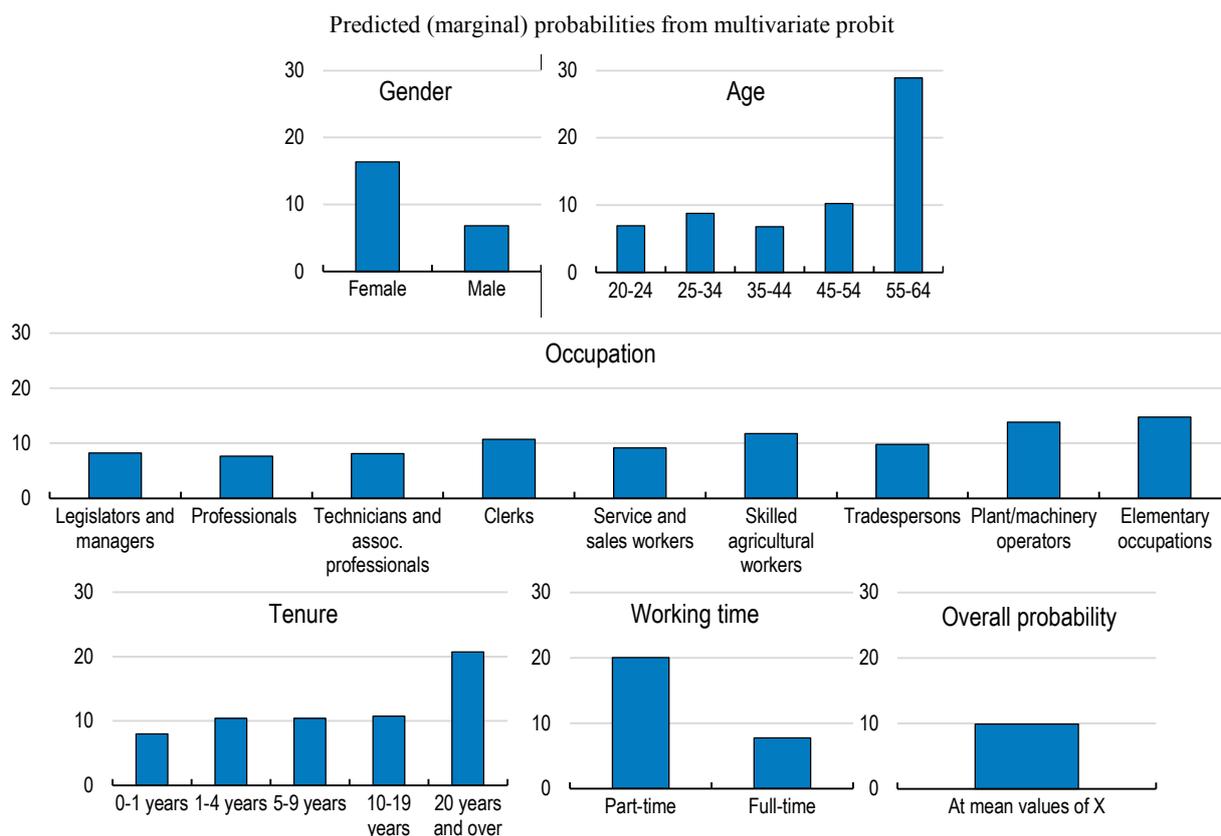
23. With respect to the type of contract, workers who had a casual job and part-time workers, face a significantly lower probability of finding new employment compared to permanent employees when displaced. This finding and the finding above about the higher probability of displacement for casual workers support the arguments put forward in the OECD's *In it together: Why less inequality benefits all* (OECD, 2015). Workers in non-standard jobs tend to receive less training, have weaker career progression and generally face greater insecurity. While casual work can in certain situations be a “stepping stone” to more stable employment, this type of worker often has a lower chance of moving on to a more stable job.

Dropping out of the labour force after displacement

24. As mentioned above, some displaced workers drop out of the labour force (i.e. stop seeking work). There are likely multiple factors influencing these decisions. Difficulty in finding suitable work is almost certainly one of them for many displaced workers, but other influences include age, overall household financial situation, caring duties, and so on.

Displacement can trigger decisions to start families, engage in full-time child-care, retire early, pursue alternative activities to employment and so on. The probability of leaving the labour force varies across groups. To illustrate this, we run another probit regression to estimate the probability that a displaced worker is out of the labour force two years after being displaced. In Figure 9, we depict predicted marginal probabilities for selected group of characteristics.

Figure 9. The probability of leaving the labour force after displacement is much higher for some workers¹



1. Predicted probabilities from multivariate probit with the dependent variable "out of the labour force within two years of displacement". RHS variables are as in Tables 1 and 2 (specification with all year dummies and no firm size variable). Predicted marginal probabilities are evaluated at the mean value of all RHS variables. Only selected characteristics are shown - those that show some statistically significant variation across different values.

25. As reported above, displaced men are more likely to re-enter employment than women, but this could also partly reflect the fact that labour market attachment of men is stronger. Indeed, from the results in Figure 9 we can observe that the probability of leaving the labour force for female displaced workers is much higher. Likewise, older workers (55-64) have close to 30% probability of dropping out of the labour force after displacement, much higher than younger workers. With regard to occupation, we find evidence that plant and machinery operators as well as workers working in elementary occupations have a higher probability of becoming detached from the labour force. This probability is also much higher for part-time workers compared to full-time workers.

Conclusion

26. Job turnover in Australia is high compared with most other OECD countries, reflecting a dynamic labour market. According to the Household, Income and Labour Dynamics in Australia (HILDA) Survey data, about one-fifth of all employees aged 20-64 separate from their job every year. In general, only a minority of job separations tend to be for economic reasons (“displaced”), such as corporate downsizing or plant closure, while the rest are voluntary for reasons such as retirement, starting a family or moving to a new job. In 2016, only about one fifth of workers who separated from their jobs were displaced workers. Nevertheless, the incidence of displacement spiked up in 2009 during the global financial crisis and has been creeping up again in later years. At the same time, the incidence of voluntary job separations spiked down during the crisis, likely reflecting a fall in opportunities to switch jobs and a greater concern about re-employment opportunities.

27. Certain groups of workers are more at risk of being displaced than others. We estimate the probability of displacement using multivariate probit regressions that control for various worker and job characteristics. Men, older workers and workers with less than secondary education tend to be displaced more often. In certain industries, such as construction and manufacturing, the incidence of displacement has been higher over the last fifteen years. There is a clear pattern with respect to job tenure, whereby workers with lower tenure face a higher probability of displacement, especially for tenure of less than one year. Similarly, casual employees have a higher probability of displacement.

28. Due to the generally good state of the economy and the labour market in Australia, a very high proportion of displaced workers find a new job soon after being displaced. According to HILDA data, close to 80% of displaced workers find employment within two years of displacement. Nevertheless, certain groups of workers are less likely to re-enter employment. Women, older workers, and less educated workers, workers who had a casual job and part-time workers have a significantly lower chance of finding new employment. There is also evidence that workers who worked in manufacturing, after controlling for their other characteristics, find it more difficult to find a new job.

29. Having said that, a low incidence of re-employment does not necessarily imply a shortage of job opportunities. Becoming displaced can trigger decisions to retire early or start a family, for instance. For this reason, we also analyse the probability of individuals leaving the labour force after displacement. We find that in particular women, older workers and workers in low-skilled occupations are more likely to become detached from the labour market. For example, workers older than 55 have close to 30% chance of dropping out of the labour force after being displaced.

30. Finally, the evidence shows that the risk of displacement has become higher after the global financial crisis. Moreover, re-employment probabilities have been reduced. This should serve as a reminder to Australian policy makers that the problem of displacement and displaced workers can become more serious in the future in the event of significant slowdown in economic growth and less buoyant labour market. Labour market policy and employment services should evolve in step with this. The Australian labour market is flexible and performing well, but it remains quite difficult for some groups of workers to find employment after being laid-off, and certain groups decide to drop out of the labour force altogether. Policies should seek to better identify these workers and help them swiftly find suitable jobs.

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