3 November 2016

The Associate to Vice President Hatcher
Fair Work Commission
80 William Street
EAST SYDNEY NSW 2000

By email

Dear Associate,

AM2014/67 – Application by the Coal Mining Industry Employer's Group to limit redundancy payments under clause 14 of the *Black Coal Mining Industry Award 2010*

I refer to the above matter and advise that I am writing on behalf of the CFMEU and APESMA Collieries Staff Division.

I enclose with this correspondence a further witness statement and Supplementary Expert Report produced by Professor David Peetz of Griffith University.

The CFMEU and APESMA Collieries Staff Division believe that the Supplementary Expert Report, if admitted, will obviate the need to lead further evidence in chief from Professor Peetz and may therefore, expedite proceedings. It will be our intention to seek leave from the Full Bench to admit the Supplementary Expert Report into evidence.

The Supplementary Report responds to certain criticisms of the original Expert Report made by the Coal Mining Industry Employer's Group (**'CMIEG'**). A copy of the witness statement and Supplementary Expert Report was provided to the legal representatives of the CMIEG on 1 November 2016.

I would be grateful if you could advise the Vice President of these matters.

Yours faithfully,

Alex Bukarica
National Legal Director

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IN THE FAIR WORK COMMISSION

Matter No: AM2014/67

Applicant: Coal Mining Industry Employer's Group

Respondent: Construction, Forestry, Mining and Energy Union

WITNESS STATEMENT OF PROFESSOR DAVID PEETZ

On 31 October 2016, I, DAVID ROBERT PEETZ, academic of the Department of Employment Relations and Human Resources, Griffith University, BRISBANE in the State of Queensland, state as follows:

1.   I have previously provided a witness statement and expert report in these proceedings (dated 23 June 2016).

2.   I was asked by the Construction, Forestry, Mining and Energy Union and the Association of Professional Engineers, Managers and Scientists Australia to respond (prepare a rejoinder) to some commentary on my expert report by the Coal Mining Employers Industrial Group (CMEIG).

3.   Copies of the letters of instructions dealing with the nature and content of this rejoinder are annexed to this statement as **'DP-4'** and **'DP5'.**

4.   I have read the Federal Court of Australia Practice Note CM7 – *Expert Witnesses in Proceedings in the Federal Court of Australia* and have attempted to compile my rejoinder in accordance with the principles enunciated therein.

5.   A copy of my rejoinder, dated 31 October 2016 is annexed to this statement as **'DP-6'**.

6.   That rejoinder makes use, on several occasions, of a 2016 Organisation for Economic Cooperation and Development (OECD) report *Back to Work: Australia*, the first chapter of which, 'Job Displacement and its Consequences', focused on dismissed or retrenched workers in Australia. Due to the number of occasions on which it is cited, that chapter is also annexed as **'DP-7'**.

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David Peetz

Dated: 31 October 2016

13 October 2016

Professor David Peetz
Griffith Business School
Centre for Work, Organisation and Wellbeing
Griffith University

Via email: d.peetz@griffith.edu.au

Dear Professor Peetz,

Matter AM2014/67 – proposed variation to the *Black Coal Mining Industry Award 2010* ('the Award') in respect to redundancy pay

I refer to your witness statement and Expert Report in the above proceedings dated 23 June 2016.

On 26 August 2016, the Coal Mining Industry Employer's Group ('CMIEG') filed further written submissions that are partly responsive to your Export Report and the 2016 Employee Survey. In particular, certain passages of the CMIEG submissions contain explicit criticisms of the Expert Report and of your reliance upon the 2016 Employee Survey.

I attach a copy of the CMIEG submission as **'Annexure A'** to this letter.

I would be grateful if you could provide a Supplementary Expert Report addressing the criticisms made by the CMIEG. In particular, could you please address the following matters:

1. The general proposition in paragraph [3] of the CMIEG submission that "…*it is not obvious that the black coal mining industry employees who are retrenched have markedly different, or worse, circumstances than those for employees in other industries who are retrenched…*"

2. The statement in paragraph [44] that:

    "*The evidence of the CMIEG, in particular the ABS data, demonstrates that there is considerable variability over time between various industries and at various times but no industry is better or worse than others, and that periods of unemployment in the mining industry generally fall within the lower range of periods in unemployment.*"

3.   The specific criticisms contained in sub-paragraphs [45] (a) to (d) inclusive of the CMIEG submissions.

4.   If applicable, could you please also identify and correct any errors or omissions contained in your Expert Report that have come to your attention since the filing of that document.

Finally, I ask that you consider this Supplementary Expert Report to be an extension of your original Expert Report and to be subject to the same ethical and scholarly standards as applied to the earlier document. Accordingly, I respectfully request that you reacquaint yourself with the matters contained in annexure **'DP-2'** to your statement prior to the preparation of the Supplementary Expert Report.

We request that the Supplementary Expert Report be completed as soon as practical. Thank you for your assistance in this matter.

Yours faithfully,

Alex Bukarica
National Legal Director

20 October 2016

Professor David Peetz
Griffith Business School
Centre for Work, Organisation and Wellbeing
Griffith University

By Email: d.peetz@griffith.edu.au

Dear Professor Peetz,

RE: AM2014/67 – Proposed variation to the *Black Coal Industry Mining Award 2010* – Redundancy Pay

I refer to your witness statement and expert report in the above proceedings dated 23 June 2016. I further refer to my previous correspondence of 13 October 2016 requesting a supplementary expert report in respect of this matter.

In addition to the matters requested in my correspondence of 13 October 2016, could you please make comment on the data and methodology used by Mr David Gunzberg in paragraphs [17]-[27] of his statement dated 23 March 2016. In particular, could you please make specific comment on the opinion expressed by Mr Gunzberg at paragraph [26] of his statement.

Further, could you please also provide a note to me (separate from the report) on whether the ABS data in paragraph [27] of Mr Gunzburg's statement can in any way be disaggregated to show the difference in time unemployed between those who were terminated from their employment, and those who resigned their employment. If the data cannot be disaggregated, could you please provide a short note confirming that this is the case.

As mentioned in my previous correspondence, I ask that you consider the supplementary expert report to be an extension of your original expert report, and to be subject to the same ethical and scholarly standards as applied to the earlier document.

I look forward to receiving your supplementary expert report as soon as practical. Thank you once again for your assistance in this matter.

Yours faithfully,

Alex Bukarica
National Legal Director

Rejoinder to Comments on my Report 'Employment in the Australian Black Coal Industry'

1. This document responds to the commentary by the Coal Mining Industry Employer Group (CMIEG) on my Report of 23 June 2016, 'Employment in the Australian Black Coal Industry', contained in its reply submissions of 26 August 2016.

Sample size

2. At [45], in points (b) and (f), of its reply submissions the CMIEG raises concerns about the sample size in the Essential survey. I note first that the sample size here is not unusually small. A number of reputable studies published in highly ranked journals have smaller samples than this. For example, one study showed that, between 1983 and 1994, the median sized sample amongst 118 studies published in the *Journal of Applied Psychology*, the *Journal of Occupational and Organizational Psychology* (formerly *Journal of Occupational Psychology*) and *Personnel Psychology* was 113 participants.[1] A different study on the history of research methods in industrial and organisational psychology found that, in the top-ranked *Journal of Applied Psychology*,[2] the median sample sizes amongst published studies were:

   - 150 in 1920;
   - 164 in 1930;
   - 200 in 1940;
   - 118 in 1950;
   - 103 in 1960;
   - 88 in 1970;
   - 101 in 1980;
   - 193 in 1990; and
   - 344 in 2000.

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[1] J.F. Salgado, "Sample Size in Validity Studies of Personnel Selection." *Journal of Occupational and*
[2] Authors of a survey of 500 members of the US-based Society of Industrial and Organizational Psychology, concerning 23 journals, undertook 'analyses based on the type of research interests expressed by respondents, and across all areas of research JAP scored highest.' M.J. Zickar and S. Highhouse, "2001measuring Prestige of Journals in Industrial-Organizational Psychology." *The Industrial-Organizational Psychologist* 38, no. 4 (pp. 29-36).

There were, in total, 609 studies in that dataset.[3]

3. Second, as explained in the report, in any survey there is the possibility of both type I errors (false positives—a relationship is thought to exist where in reality it does not) and type II errors (false negatives— no relationship is thought to exist where in reality it does). Statistical conventions based around significance levels focus on type I errors (the probability of a type I error is specified by the significance level), so whatever the sample size, the margin of error (sampling error) adjusts to establish a standard effect size necessary to preclude a Type I error of given probability. However, with small N the chance of a type II error increases noticeably (that is, the fact that a difference between two groups is not statistically significant is erroneously taken to show that no difference exists). As mentioned in the report, one of the main considerations in the analysis was to maintain an adequate N to enable valid comparisons to be made. So, for example, groups were aggregated, in order to increase cell size and reduce the chance of a type II error.

4. In making comparisons between groups, then, the main problem with smaller samples is the increased danger of Type II errors—that is, increased danger that we will not find statistically significant differences between groups when there really are underlying differences between them. Where statistically significant differences *are* found, the *effect size* must be large in order for significance to be achieved. That is, where samples are small, there must be a big difference between A and B for that difference to show up as statistically significant. By contrast, with large samples, small effect sizes can show up to be statistically significant, even if they are of limited practical importance.

5. In the Essential survey, a number of differences between different job tenure groups were found to be statistically significant. For these differences to show up as statistically significant, the effect size must have been large. For example, amongst retrenched black coal mineworkers who had been in their previous job for 3-9 years, 75% were employed in the survey week, but the proportion fell to 41 per cent amongst retrenched black coal mineworkers who had been in their previous job for 10 or more years. This difference is

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[3] J.T. Austin, C.A. Scherbaum, and R.A. MAhlman, "History of Research Methods in Industrial and Organizational Psychology: Measurement, Design, Analysis." in *Handbook of Research Methods in Industrial and Organizational Psychology*, ed. Steven G. Rogelberg (Malden, MA: Blackwell, 2002) (pp. 3-33).

statistically significant because the effect size is very large: that is, those in the older tenure group were barely half as likely as the medium tenure group to be in employment in the survey week. We can be confident that, where any statistically significant differences occur in this study, the effect size will likely be quite large.

6. Where we need to be cautious, however, is where we see a difference between two groups is not statistically significant. It might mean that there is in reality no difference between the two groups; but it might also mean that there is a real difference but the effect size is not large enough for it to be statistically significant. If we were to conclude that there is no real difference between those two groups, we would run the risk of making a Type II error (a false negative).

7. On a final note here, the CMIEG's comments, focusing as they do on the 85 estimated reluctantly redundant employees who found work within four weeks, leading to the estimate of 28% (mentioned in [45](f)), do not suggest a full understanding of the relevance of sample size. The standard error (SE) on an estimate of 28% will necessarily be the same as the standard error on an estimate of 72% in the opposite group (in this example, those not recorded as finding work within four weeks). In a total sample of 304, the latter would be equivalent to 219 people who were not recorded as finding work (the two percentages must move together to add to 100%, so the SE of one must equal the SE of the other). So for this sample, the SE from 85 who found work is the same as the SE from 219 who did not find work. The main factor driving SE is the numerator—that is the number of people being sampled (N)—not the denominator. For a given N, the SE on percentage estimates peaks at round 50%, and is equally low on percentages close to 1% and 99%. If 5 people surveyed out of a sample of 1000 have a rare disease, implying a 0.5% incidence of that disease, those numbers of 5 and 0.5% are no less (or more) robust than the 995 surveyed, and 99.5% of those surveyed, who did not have that disease.

Comparisons with other industries

8. At several points, in particular at [3], [44] and [45](g), CMIEG raises concerns that there is no evidence to support any idea that the black coal mining industry employees who are retrenched have markedly different, or worse, circumstances than those for employees in other industries who are retrenched.

9. The Essential Survey does provide such evidence, if one compares it to other publicly available data. In particular, in 2016 the Organisation for Economic Cooperation and Development (OECD) published a report *Back to Work: Australia*, the first chapter of which, 'Job Displacement and its Consequences', focused on dismissed or retrenched workers.[4] Some of the data in there are drawn from analysis of the Household Income and Labour Dynamics in Australia study (HILDA), and some of the questions in the Essential Survey were also based on questions used in HILDA.

10. The OECD report defines 'displaced workers' as workers who had tenure of at least one year in their previous job and who were 'dismissed for economic reason or for cause'. The OECD state they exclude workers with tenure below one year to remove the possibility of some workers being dismissed due to 'the firm and employee deciding that they were not well-matched'.[5] The OECD join 'economic reasons' and 'for cause' because neither HILDA nor the ABS Labour Force Survey 'distinguish between economic reasons and dismissal for cause'.[6] The OECD analysis also excludes workers who left their job after termination of a fixed-term contract, as 'it is not possible to distinguish workers who left a temporary contract voluntarily from those who do not have their contract renewed for temporary reasons'.[7] I have accordingly re-analysed the Essential survey data to make it, as much as possible, directly comparable with the OECD HILDA findings. The number of observations that meet those criteria (made redundant or terminated for other reasons, but not terminated because of expiry of a fixed-term contract, and having tenure with previous employer of a year or more) is 428. Of those, 407 had experienced redundancy and 26 had experienced being terminated for 'other' reasons (neither redundancy nor the end of a fixed-term contract).[8]

11. Based on HILDA data, the OECD report finds that a 'large share of displaced workers rapidly finds another job following displacement: almost 70% are re-employed within one

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[4] Organisation for Economic Cooperation and Development, "Back to Work Australia: Improving the Re-Employment Prospects of Displaced Wokers." (Paris: OECD, 2016).pp 23-54.
[5] Ibid. p31.
[6] Ibid. footnote 7, p49.
[7] Ibid.
[8] Five had experienced both.

year, and almost 80% within two years'.[9] It adds that re-employment rates continue to increase in the third year, albeit slightly, but fall in the fourth year: the accompanying chart suggests that the re-employment rates are approximately 79% within two years, 80% within three years and 78% within four years.[10] The OECD's estimates were averaged over the period of HILDA from which data were collected (2002 to 2013).

12. In the Essential survey, the re-employment rate for the comparable group across the sample was 59%. Thus retrenched black coal mining employees appear to have lower re-employment rates than retrenched workers from other industries. This re-employment rate comprised 52% for those who had been retrenched within one year, 58% within two years and 68% within three years.[11] The differences between categories of post-retrenchment durations were not statistically significant, but they broadly followed the pattern in the OECD data and it would possibly be a type II error to conclude there were no real differences between those groups.

13. A larger difference between black coal mining employees and the rest of Australia is found in job quality after displacement. The OECD report based on HILDA found that 'while almost four in five displaced workers were on permanent contract before displacement, only 55% of those who are employed in the two years following displacement get such a contract in the first year and 62% in the second year'.[12]

14. In the Essential survey, amongst those people who were re-employed and who met the OECD definition of displaced, only 33% were in jobs that entitled respondents to paid annual and sick leave (that is, permanent jobs).[13] By comparison, 94% of displaced respondents had been in jobs with annual and sick leave before being retrenched. Whereas, then, employees across Australian industries experienced a roughly 20

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[9] Organisation for Economic Cooperation and Development, "Back to Work Australia." p35.
[10] Ibid. p35 and Panel A, Figure 1.10, p37.
[11] It fell to 53% after 4 years but there were only 15 observations here, as this comprised people who were left in scope even though their redundancy was more than 3 years prior to the survey. I also note that in line 3 of page 7 of exhibit GW-2 it is suggested that the question about current employment was only asked of people who were no longer working in the coal mining industry at the time of the survey. This was not the case: 43% of people who were asked this question were still working in the industry at the time of the survey.
[12] Organisation for Economic Cooperation and Development, "Back to Work Australia." p42.
[13] The number did not vary markedly by period since retrenchment: it was 33% for those retrenched less than a year ago, 31% for less than two years ago, 36% for less than three years ago.

percentage point drop in the probability of being in a permanent job before and after retrenchment, for black coal mining employees the drop was closer to 60 percentage points. The retrenched black coal mining employee who found a permanent job after being retrenched was in a minority.

15. The OECD also found, across Australian industries, 'a significant and mostly temporary increase in part-time employment: 6% of the displaced workers who are employed in the two years following displacement switch from full-time to part-time in the first year, but the share drops to 1% in the second year following displacement'.[14]

16. In the Essential survey, amongst those people who were re-employed and who met the OECD definition of displaced, 27% were working part-time at the time of the survey. This was much higher that the rate of part-time employment found for displaced full-time workers across Australia as a whole. Although the Essential survey did not collect data on the hours of work of retrenched employees before they were made redundant, it is well established that the vast majority of mining employees are full-time workers—less than 1%, according to the ABS, are employed part-time.[15]

17. There was also little sign of part-time work reverting to full-time work over time amongst displaced black coal mining employees, unlike appeared to be the case for Australian displaced workers as a whole. Part-time employment comprised 30% of employment amongst those who had a job at the time of the Essential survey, after having been displaced less than a year earlier, with 26% amongst those displaced one to two years earlier, and 26% two to three years earlier.

18. The OECD analysis of Australian displaced workers examined the earnings of those who had been re-employed. It found that 'wage increases are slightly more frequent than wage losses: 44% of those in employment in the three-year period following displacement earn weekly wages more than 10% superior to their wage before displacement, while 36% have weekly wages more than 10% lower than their pre-displacement wages in the first year, and 31% two years after'.[16]

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[14] Organisation for Economic Cooperation and Development, "Back to Work Australia." p43.
[15] See Peetz report, Employment in the Australian Black Coal Industry, p41.
[16] Organisation for Economic Cooperation and Development, "Back to Work Australia.", p40.

19. The Essential survey did not seek to quantify changes in earnings. However, it did ask respondents to describe their current wages and conditions compared to the job they were immediately in before they were put off.   There were five possible answers: 'a lot better now', 'a little bit better now', 'much the same', 'a little worse now' and 'a lot worse now'. Overall, only 11% of displaced respondents (who matched the OECD definition) described their current wages and conditions as better (either by a lot or a little) than before, while 75% described them as worse (by a lot or a little).

20. While the forms of the answers do not match between the two sources, the black coal mining workers are clearly substantially worse off than Australian displaced workers as a whole. Whereas in the Australian-wide sample, wage increases were slightly more frequent than wage losses, in the black coal mining industry losses outnumbered gains by a ratio of nearly 7:1.

21. Another way of looking at the black coal mining data is, amongst those who match the OECD definition of displaced persons, to compare those who report their current wages and conditions leave them 'a lot better off' than before they were retrenched, with those who say they are now 'a lot worse off', on the grounds that the thresholds in the OECD comparisons are set quite high, at wage gains or losses of 10% or more of the original wage. Those who said say they were 'a lot better off' comprised 3% of eligible respondents, those who said they were 'a lot worse off' comprised 36% of them. By this measure, substantial losses in the black coal mining industry losses outnumbered substantial gains by a ratio of nearly 12:1. Again, this is a very sharp contrast to the all-industry data, which indicated wage increases were slightly more frequent than wage losses.

22. When compared with the national HILDA data for all Australian industries, it is clear from the Essential survey that displaced black coal miners fare substantially worse than displaced workers from other industries. The former appear, to some extent, less likely to be able to obtain another job in the period after displacement but, more importantly, if they do obtain a job it is much more likely to be a casual job, and/ or a job with part-time hours, and is especially more likely to involve lower pay and conditions than their job before displacement.

Time for analysis

23. As mentioned in the original report, and subsequently by CMIEG (at [45](a)), in the time available to me it was not possible to undertake a full analysis of that survey. Paragraphs 9 to 22 above demonstrate that a fuller analysis, which would compare data from the Essential survey with that for other industries as shown in the OECD report, would have indicated that retrenched mining sector employees are also in a worse position than their counterparts in other industries. That OECD report also confirms some other patterns suspected within the mining industry are also observable outside it: for example, it shows that 'workers aged 55 to 64 years [are] at a greater risk of displacement than younger age groups',[17] that 'once other characteristics are controlled for workers aged 55-64 have a probability of re-employment 23 percentage points lower than people aged 35-44',[18] and that older workers 'more commonly leave the labour force following displacement'.[19]

Speculation

24. CMIEG, at [45](c), claims that 'The questions in the survey require speculation by the participants in the survey'. It cites as evidence a question on whether the respondent thought that their job was not genuinely needed, and the perceived criteria used to lay people off. It is indeed the case that the respondent might not know for certain whether the job as genuinely needed, but they would be in a very good position to make an assessment of how necessary or otherwise it was. However, questions on whether respondents were retrenched, are currently in work, the number of hours they work, whether they took active steps to look for employment, whether they were available for work, whether their job had leave entitlements, and the length of time they were with their former employer require no speculation by the respondent at all. Questions eliciting similar information are used by the Australian Bureau of Statistics (ABS) in its labour force survey to estimate such things as the unemployment rate and for job mobility purposes, and indeed the ABS definition of unemployment shaped several of the questions in the Essential survey. Even questions on whether the pay and conditions in

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[17] Ibid. p33.
[18] Ibid. p36.
[19] Ibid. pp36, 48.

respondents' current job are better or worse than those in the job they held before they were retrenched require no speculation. It is incorrect, on the basis of the nature of two questions, to assert that the questions in the survey require speculation by the participants in the survey.

Skew due to union members:

25. At [45](e), the CMIEG says that the report 'accepts that some of the results of the "Essential Survey" may be skewed because union members (being the entire sample size) tend to be older and have longer job tenure than the rest of the workforce'. While the report explicitly states the nature and effects of this survey population, a comparison of Figures 26 and 27 of the report indicates that the skew is not large, and Figure 28 suggests a relatively small difference is made to the overall picture by taking account of the different age distributions of all employees and union members. There is no reason to believe that subsequent analyses of the differences *within* the survey, between different tenure groups, would come to different conclusions if it were based on non-members as well as union members.

26. However, probably the most important question in interpreting the survey data is: does the age distribution of union members explain the overall differences between displaced black coal mining employees and all displaced Australian employees, in terms of job quality and earning capacity—the incidence of casual employment, part-time employment and drops in pay and conditions—shown in paragraphs 13 to 21 above. To test this, I simulated the effect of the age distribution by calculating what difference is made to each of those variables. That is, I changed the distribution of the survey population from that of union members to that of employed persons in the industry as a whole, using ABS data for November 2015 (shown in Figure 20 on page 35 of the Report), and calculating the number in each age cohort that would have that characteristic (e.g . casual employment) by multiplying the reweighted number of respondents in each age group by the probability that someone in that age group would have that

characteristic (e.g. casual employment).[20] The results were that using the age distribution of employed persons in the industry, instead of the age distribution of union members in the survey, led to:

- a 3 percentage point reduction in the incidence of casual employment;

- a 2 percentage point reduction in the incidence of part-time employment; and

- a 2 percentage point reduction in the incidence of reported reductions in pay and conditions.

27. That is, of the 22 to 29 percentage point difference in the incidence of casual employment between displaced black coal mining employees in the Essential survey, and displaced workers from all Australian industries in the HILDA survey, indicated in paragraphs 13 and 14 above, only about 3 percentage points can be attributed to the fact that the Essential survey is based on a survey of union members rather than of all employees in the industry, and union members have an older age distribution than the rest of the workforce.

28. Likewise, of the 24 to 25 percentage point difference in the incidence of part-time work between displaced black coal mining employees in the Essential survey, and displaced workers from all Australian industries in the HILDA survey, indicated in paragraphs 15 to 17 above, only about 2 percentage points can be attributed to the fact that the Essential survey is based on a survey of union members rather than of all employees in the industry, and union members have an older age distribution than the rest of the workforce.

29. Overall, the age distribution of union members has some impact on the representativeness of the survey of all retrenchments, but this impact is small, and does not materially affect the conclusion that displaced black coal miners fare substantially worse than displaced workers from other industries, particularly by reference to the incidence of casual employment, part-time employment and drops in pay and conditions arising from moving into inferior employment, upon finding work subsequent to displacement.

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[20] This is equivalent to weighting the data by age group, to match the age distribution of all employees in the mining workforce estimated by the ABS.

ABS data on job search of unemployed persons by industry

30. At paragraph [44] of the CMIEG submission, reference is made to data that originate from the ABS labour force survey. The data from the labour force survey are, like all surveys, subject to sampling error. This is particularly the case for industries with a relatively small number of observations, and the mining industry is one of the smallest, so sampling error is relatively large—bearing in mind also that data were only collected for respondents who were unemployed and who were previously employed in the mining industry. That particular problem is eased somewhat in the exhibits by the use of data from several points in time, but comparisons over time between two years would be of dubious value. It should, of course, be recognized that the data relate to mining as a whole and not to coal mining, a limitation with several data sources.

31. However, two problems remain with interpretation of the data. First, the data do not distinguish between people who resigned from a job in the mining industry (or other industries) and those who were retrenched. It is plausible that, at various times when the data were collected, many people looked for work in the mining sector after having quit a job there without having a new job to go to, but confident they could find alternative employment. This may especially have been the case if working conditions in the industry, or at last in some parts of the industry, were unattractive for workers after they have been n a job for a short time.

32. The use of rotating 12–hour shifts and long-distance commute arrangements (sometimes referred to as FIFO and DIDO), may have increased the likelihood that workers may quit after a short time. The wide variety of shift arrangements in the industry (ranging, for example, from 4D-4O-4N-4O[21] through 2D-2N-2O-2D-2N-6O to more complex rosters such as 28 day cycles like 2D-1O-3N-3O-3D-1O-2N-4O-2D-1O-2N-4O, or even asymmetric rosters such as 7D-7N-7O) could encourage people to think that a better roster could be found. People who voluntarily leave jobs in search of another one in the industry may have much lower job search duration than those who are compulsorily

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[21] In these notations, D=day shift, usually beginning at 6am or 7am, N=night shift, usually beginning at 6pm or 7pm, and O=a day off. Hence 4D-4O-4N-4O means 4 day shifts in succession, followed by 4 days off, then 4 night shifts in succession, followed by another 4 days off, after which the cycle commences again.

retrenched, and mining may differ from other industries in either the rate of voluntary separation, or the gap between job-search duration amongst retrenches and voluntary job separators, or both.

33. Evidence in support of this proposition can be seen in the unusually high rate of labour turnover in the mining industry. Labour turnover in mining is amongst the highest of any industry[22] and much higher than would be expected given the level of wages in the industry. Higher wages are normally associated with lower labour turnover,[23] and so we would expect labour turnover to be low in the mining industry because it has the highest hourly earnings. Figure 1 shows a strong relationship between industry-level turnover and hourly earnings estimates from the ABS Employment, Earnings and Hours (EEH) survey. Mining, however, has a much higher rate of turnover than would be predicted by its hourly earnings. A simple regression equation on 16 industries in 2006 indicates that for each $1 increase in hourly earnings, industry level labour turnover falls by an average of 1.1 percentage points, with an industry dummy for mining indicating that turnover in mining was well over 10 percentage points above the rate predicted by its earnings level.[24] The solid line in Figure 1 shows that simple OLS regression line. Moreover, between 1996 and 2010 mining was the only industry, amongst the eight for which continuous data are available, in which labour turnover increased. Amongst all industries it was the only one in which turnover increased in the 1996-2006 period.[25]

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[22] Australian Bureau of Statistics (ABS). Labour Mobility, Australia. Canberra, filed various years Cat No 6309.0.

[23] R.B. Freeman and J.L. Medoff, *What Do Unions Do?* (New York: Basic Books, 1984); R.G. Ehrenberg and R.S. Smith, *Modern Labor Economics: Theory and Practice* (Reading, MA: Addison-Wesley, 1997).

[24] A simple linear equation is turnover = .466 – 0.11earnings +.192 mining. Adjusted r^2 = .65, N=16, with both coefficients significant at the 0.1% level. In quadratic form, it is turnover = .779 – 0.37earnings + .001earningssquared +.124 mining. Adjusted r^2 = .71, but with small N and an additional variable the first two coefficients are significant at the 10% level and the third was not significant, so the former, more parsimonious equation is preferred.

[25] ABS Cat No 6309.0
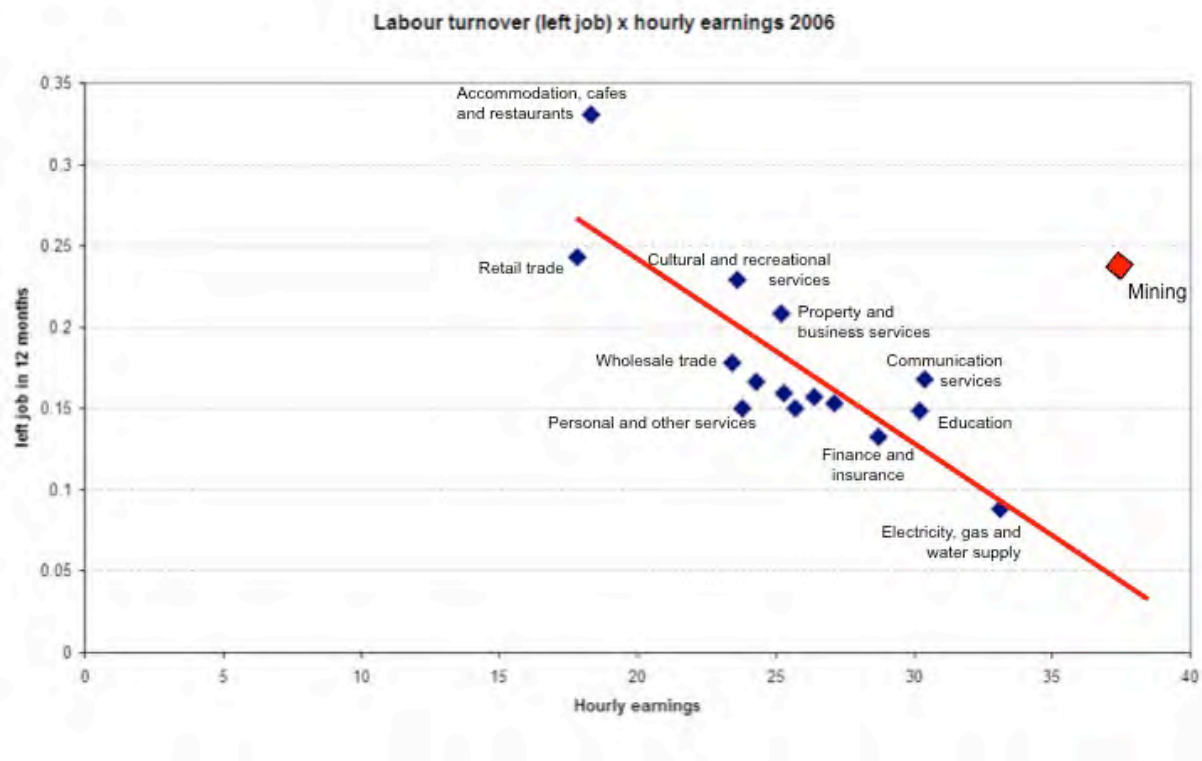
Figure 1 Labour turnover and hourly earnings by industry, 2006

Source: ABS Cat Nos 6306.0, 6309.0, reproduced from Peetz, D., and G. Murray. "'You Get Really Old, Really Quick': Involuntary Long Hours in the Mining Industry." *Journal of Industrial Relations* 53, no. 1 (2011): 13-29.

34. It is thus difficult to conclude anything about the relative duration of unemployment amongst retrenched workers in the mining industry, relative to other industries, from the data in exhibits DG-5 and DG-6 because there is a very high rate of labour turnover in the industry reflecting high job 'leaving' in the context of difficult working arrangements, and this may not reflect the relative employment prospects of retrenched workers in the industry.

35. The second problem with any reliance on exhibits DG-5 and DG-6 is that they do not reveal anything about the joblessness duration of people who are no longer in the labour force, being only published for people who meet the ABS definition of 'unemployed'. Yet many workers leave the labour force after being retrenched, and as shown in my

earlier report, and also in an OECD report, older workers and long tenure workers in particular are likely to leave the labour force after they are retrenched. For the workers most vulnerable to the effects of retrenchment, unemployment duration is not a useful indicator of the duration of joblessness, and so comparisons based only on the former are not useful.

36. The ABS labour force data have some merit as an, albeit imperfect, measure of unemployment duration of people whose previous job was in the mining industry, compared to other industries. However, to ascertain the relative situation of retrenched workers from the coal mining industry it is necessary to obtain data directly from them (that is, from workers retrenched from the black coal mining industry) and take account of whether they are still in the labour force. The data referred to in [45] do not relate to time spent unemployed by individuals retrenched from the industry and do not show that employees retrenched in mining are in the lower range of experience of most industries.

David Peetz
Professor of Employment Relations
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October 2016

Corrigenda to original report

- Page 71 – second paragraph:
  - 'Figure W41' (3rd line) should say 'Figure 27'
  - 'Figure X20' (5th line) should say 'Figure 26'

- Page 79 — table 15:
  - The notes at the foot of the table (5th-last to 3rd-last line) that say:

    ** Difference significant at 5% level using chi-squared test.
    * Difference significant at 5% level using chi-squared test.
    # Difference significant at 5% level using chi-squared test.

  should say:

    ** Difference significant at 1% level using chi-squared test.
    * Difference significant at 5% level using chi-squared test.
    # Difference significant at 10% level using chi-squared test.

- The following explanation should also be added in the note to that table:

    Chi-squared tests use the likelihood ratio method in SPSS. They test whether the probability, that there is no difference between responses in each the three tenure groups, is less than 5%.

- The same corrections should be made to Table 16 (page 82). Significance levels were omitted from Table 16. They have now been included, along with revisions to some numbers, so a revised version of Table 16 is over the page. As a result of the corrections to Table 16, and some inconsistencies between the original versions of Table 16 and the text, some amendments to the text also follow.

- There was, in the report, inconsistent treatment of missing values—that is, some passages of text included missing values (where the respondent did not answer the question) in the total or the denominator, while others do not. The changes below now specify where missing values have been included in text, and sometimes require minor changes in the numbers. The overall picture, however, does not change.

- page 76 paragraph 2, last line; and paragraph 4, last line
  - add in brackets at the end "(The percentages here include missing values in the denominator.)"

- page 78 last paragraph, last (third) line:
  - '88% for short-tenure workers; and 88% for medium-tenure workers' should read '85% for short-tenure workers; and 84% for medium-tenure workers'

- page 79, Table 15, 8th line of data ("Not employed"), the numbers "25%, 22%, 56%" should read "28%, 25%, 59%"

- page 80 paragraph 1:
    - line 4: 92% should read 94%
    - line 7: 67% should read 69%
- page 80 paragraph 2:
    - line 1: 'a large majority (81%)' should read 'a large majority (83%)'
    - line 3: 'the case for 69% of medium-tenure employees and 68% of short-tenure employees' should read 'the case for 67% of medium-tenure employees and 63% of short-tenure employees'
- page 80 paragraph 3:
    - line 6: 'ben' should read 'been'
    - in lines 10 and 12 the words 'mining contractors' should be replaced by 'contractors' (some of the contractors may not have been classified as being in the mining industry, e,g. vehicle maintenance)
    - 3rd last line: 'most adverse for long-tenure employees' should read 'most adverse for medium and long-tenure employees'
- page 81 paragraph 2:
    - line 5: 78% should read 79%

Table 16: Employment situation in June 2016 of black coal mining industry workers made reluctantly redundant after July 2013 and in employment in June 2016, Australia

	Tenure in job from which made redundant		
	up to 2 years	3-9 years	10+ years
Entitled to recreation leave in previous job	69%	96%	94%**
Entitled to recreation leave in current job	42%	40%	26%#
Change since made redundant	-24%	-58%	-67% n
Previously employed by a mine operator	42%	66%	81%**
Currently employed by a mine operator	21%	9%	14%
Change since made redundant	-21%	-57%	-67% n
Previously employed by a contractor	58%	34%	20%**
Currently employed by a contractor	46%	57%	56%
Change since made redundant	-12%	23%	36% n
Mine operator minus contractor (previous)	-15%	32%	61% n
Mine operator minus contractor (current)	-24%	-47%	-42% n
Majority of paid work since redundancy in casual or fixed term jobs	63%	67%	83%
Wages and conditions better than before	12%	14%	6%
Wages and conditions similar to before	9%	14%	6%
Wages and conditions worse than before	79%	73%	89%

Population: Black coal mining employees (union members) made reluctantly redundant after July 2013 and currently in employment in June 2016. (Reluctantly redundant includes those who said that they did not want to leave, but were forced to, and those who said that they would have preferred to stay, but were offered a package that was too good to reject.)

N= 196. (N=33, 127 and 36 in the three tenure groups respectively).

** Difference significant at 1% level using chi-squared test.

* Difference significant at 5% level using chi-squared test.

Difference significant at 10% level using chi-squared test.

n Chi-squared test not applied.

Chi-squared tests use the likelihood ratio method in SPSS. They test whether the probability, that there is no difference between responses in each the three tenure groups, is less than 5%.

Source: Essential survey of employees in the black coal mining industry

Chapter 1

Job displacement in Australia and its consequences

This chapter examines the prevalence and consequences of job displacement in Australia. Australia's flexible labour market shows up in a somewhat higher risk of job loss due to redundancy than in a number of other OECD countries for which comparable data is available. But it also shows up in a more rapid rate of re-employment. However, some groups of workers are more vulnerable to displacement, notably men, low-educated workers and short-tenure workers in small and medium-sized enterprises. Moreover, older workers, women and workers previously employed in casual jobs face greater difficulties finding a new job than other displaced workers. In addition, for a sizeable minority, the new jobs that displaced workers find are of poorer quality than the jobs they lost. Many displaced workers are not well equipped in terms of skills to switch to sustainable quality jobs in the service sector.

This chapter analyses the incidence and consequences of job displacement in Australia. Recent cyclical and structural developments in the Australian labour market are first summarised, in order to provide some context for understanding why workers are displaced and how they fare. The chapter then documents the number of stable workers who have been displaced due to economic reasons each year since 2000 and describes the characteristics these workers and their employers. Post-displacement consequences are then analysed, including the re-employment prospects of displaced workers and their wages and other job quality aspects in their new jobs. The chapter concludes with a discussion of how well displaced workers' skills match the requirements of the new jobs that they are able to find.

The Australian labour market context

The labour market has performed well since 2000 compared with most OECD countries, but less so the past several years

Compared with most other OECD countries, the Australian labour market has performed very well since 2000. The 3.5% annual GDP growth during the pre-crisis period (2000-08), was fuelled by rising exports to rapidly growing Asian economies and it translated into a continuous reduction in unemployment, from 6.8% in 2001 to 4.2% in 2008. At the same time, the employment rate increased continuously, reaching 73% in 2008, 7 percentage points above the OECD average (Figure 1.1). Labour market conditions were generally improving throughout the OECD area during this period, but not so markedly as in Australia.

The Australian economy also weathered the global financial crisis (GFC) better than most OECD countries. Labour market conditions deteriorated at the onset of the global downturn with unemployment peaking at almost 6% in mid-2009 and the employment rate dipping to 71.7% in the third quarter of that year. Nonetheless, the Australian economy and labour market displayed remarkable resilience. GDP growth was 1.5% at its lowest point in 2009 and progressively regained pace through 2012, while labour market conditions began to strengthen again in 2010 with the unemployment rate falling back to close to 5% by early 2011. Despite the rapid overall recovery of the labour market, there was a modest build-up in long-term unemployment with the share of unemployed who had been out of work a year or longer rising from 15.1% at the end of 2007 to a little above 19% in 2011.

A number of factors explain the resilience of the Australian economy and labour market in the wake of the GFC. First, the financial sector was not exposed to toxic securities and was subject to extensive regulation. Second, despite a sizeable fall in the terms of trade, the strength of China's economic

growth fuelled continued demand for Australian commodities. Finally, an expansive macroeconomic policy answer successfully mitigated the demand shock. Monetary policy was quickly and significantly loosened when the crisis struck. On the fiscal side, several very sizeable stimulus packages were introduced over the 2009-11 period, including transfers to households and public investments in housing, education and infrastructure, amounting in cumulative terms to about 7% of GDP.

Some of the drivers of strong growth have waned since 2011, causing labour market conditions to deteriorate, although they remain better than in most OECD countries. Employment growth slowed from about 2% in 2010 to about 1% in 2013 causing the unemployment rate to begin rising again, reaching 6.2% in the last quarter of 2014. Labour force participation fell in 2013 and 2014, partly due to weaker employment prospects discouraging people to look for work or enter the labour market. A number of mass layoffs were announced, notably with the planned closing of the last automotive plants and more recently layoffs in the mining sector. The recent softening of the labour market has also been associated with a further rise in long-term unemployment, especially in 2014, and in December of that year 23% of the unemployed had been out of work for more than 12 months.

Figure 1.1. **The labour market in Australia has been strong since 2000, but somewhat less so since 2011**

Employment and unemployment rates, Australia and OECD, 2000-14, percentages
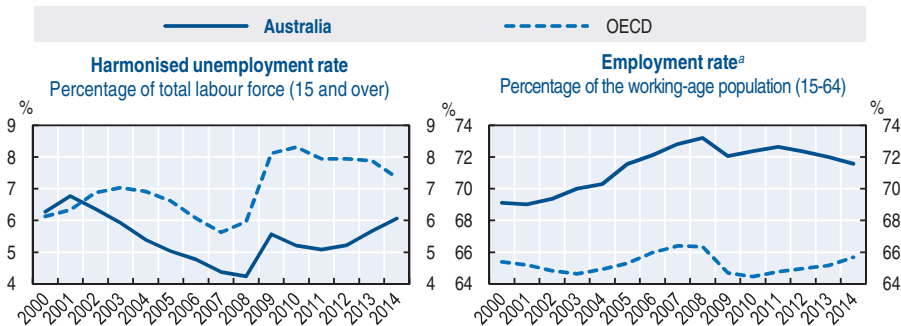
a) OECD estimates for employment rate are based on series from the *OECD Employment Database*, www.oecd.org/employment/database for the years 2000 to 2004.

Source: OECD (2014), "Harmonised unemployment rates (HUR)" (indicator), http://dx.doi.org/ 10.1787/52570002-en for harmonised unemployment rates; and *OECD Employment Database*, www.oecd.org/employment/database for employment rates.

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Mining and services have been the most important sources of employment growth

Other structural economic trends in Australia, which often started long before 2000, are also of importance for understanding the experience of displaced workers because they influence who is displaced and which types of jobs they are best able to find after displacement. In particular and as in most other OECD countries, the sectoral composition of employment in Australia has continued to evolve with the service sector being the main source of net employment growth and manufacturing the biggest (net) shedder of workers (Figure 1.2). Three service sectors – professional, scientific and technical services, health care and social assistance, and education and training (all included in "other services" in this figure) – have accounted for 40% of total employment growth over the 2000s (Borland, 2011). The large employment decline in the Australian manufacturing sector is similar to the pattern observed in many OECD countries, but Australia is unusual in that the mining sector was an important source of net employment growth between 2004 and 2011. Construction added job up until 2008, but has been less dynamic since the GFC. Reductions in trade and industry protections and greater competition have been driving these structural changes, as well as industrialisation and rapid growth in Asia, which have resulted in high prices for Australia's commodities and food exports, and a high Australian exchange rate.

The occupational composition of employment has also evolved significantly since 2000, with job growth favouring skilled workers. The share of managers, professionals, community and personal service workers has been growing, while a decreasing share of the labour force are employed as clerical and administrative workers, or as labourers. Changes in employment by industry appear to explain a large fraction of the occupational changes (Borland, 2011).

Figure 1.2.   **Service sector employment has been growing fastest,**
but growth in the mining sector was also substantial

Employment by economic activities as a percentage of total employment,[a] 2000 and 2013
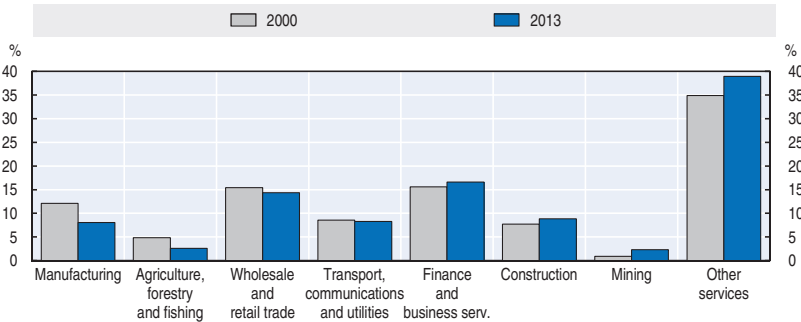
a)   Sectors are ranked in ascending order by employment change over the period 2000-13.

Source: Australian Bureau of Statistics (2015), "Labour force, Australia, detailed, quarterly", Table 04.
Employed persons by industry – Trend, seasonally adjusted, original, Cat. No. 6291.0.55.003,
http://www.abs.gov.au/ausstats/abs@archive.nsf/log?openagent&6291004.xls&6291.0.55.003&Time%20Se
ries%20Spreadsheet&132FC37B0475920ACA257E0C000F1AC0&0&Feb%202015&19.03.2015&Latest.

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Real wages have increased, but so did labour income inequality

The strong labour market performance has also been reflected in
an almost continuous increase in average weekly and hourly wages
since 2000, except for a small reduction in 2008, as well as in 2013
(Figure 1.3). Real wages have risen throughout the wage distribution, but
higher income groups have experienced above-average earnings growth so
that earnings inequality has further widened (Borland, 2011; and
Greenville et al., 2013).

Another driver of recent trends in wages has been significant reforms in the
industrial relation system over the past two decades. Despite a partial course
reversal with the introduction of *Fair Work* in 2009, the deregulation of
collective labour relations has affected wage setting in two main ways. First, the
number of employees whose pay is set by collective agreements or awards fell
from 72% in 2002 to 60% in May 2014.[1] Second, while sectoral and regional
awards used to play a major role in wage setting, firm-level agreements, now
play the dominant role and only one of five employees had their pay fixed by an
award in May 2014, while the rest was covered by a firm-level agreement. This
combination of reduced bargaining coverage and bargaining decentralisation is
very likely to have made wages more responsive to firm-level conditions, but
may also to have increased wage dispersion (OECD, 2012).

Figure 1.3.   **The good labour market performance
translated into continuous wage increases, except in 2009**

Change in real earnings^a and hours worked,^{b} 2000-13
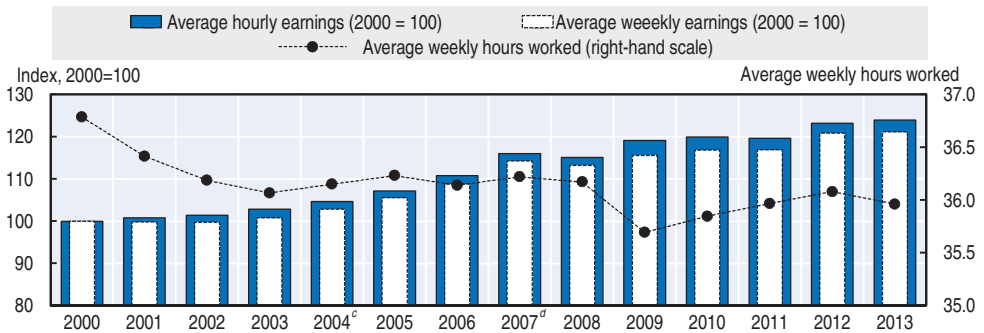
a) The average hourly earnings is the ratio of the average weekly earnings in all jobs of employees (deflated using the CPI) to the average actual hours worked (see note b).

b) The average hours worked refers to the average actual hours worked in all jobs per week by the employees currently working during the reference week.

c) There is a break in the weekly earning series in 2004. For more details see paragraph 28 of the Explanatory notes in ABS, "Employee earnings, benefits and trade union membership, Australia", Cat. No. 6310.0, August 2004.

d) There is a break in the weekly earning series in 2007 due to a change in the treatment of salary sacrifice.

Source: OECD estimates based on various issues of ABS, "Employee earnings, benefits and trade union membership, Australia", Cat. No. 6310.0, and ABS, "Labour force, Australia, detailed, quarterly", Cat. No. 6291.0.55.003.

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More and more part-time work and a high share of non-regular contracts
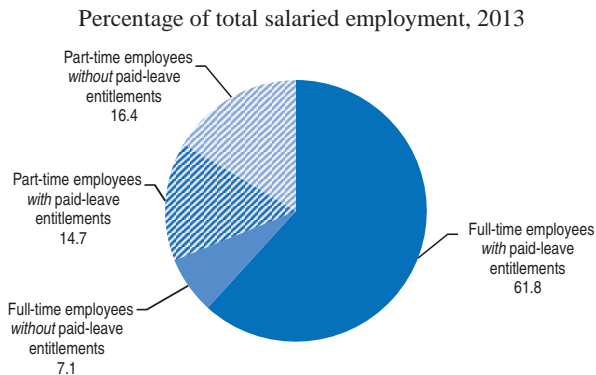
Average working hours have followed a declining trend since 2000, with a particularly sharp drop in 2009 from which there had been only a partial recovery by 2012 (Figure 1.3). The substantial cumulative reduction in weekly working hours since 2000 reflects in considerable part the ongoing increase in the participation of women in the labour market, often on a part-time basis. The strong decrease in working hours in 2009 has sometimes been interpreted as a sign that employers were retaining valued employees by transforming full-time jobs into part-time jobs. While this seems to have played some role, the reduction in the number of workers, moving from part-time to full-time jobs and the increasing number of new entrants taking part-time jobs also contributed, as well as some temporary reductions by leave-taking (van Wanrooy et al., 2009).

Continued growth in part-time work accounts for all of the recent increase in the employment rate (Borland, 2011). According to ABS, which defines part-time as working less than 35 hours, about 30% of the employees were working part-time in Australia in 2012, as against 27% in 2000.[2] Australia belongs to the group of OECD countries with the highest share of part-time employment. While much part-time employment is a voluntary choice on the part of the worker, the share of involuntary part-time work has risen since the outset of the GFC.[3]

Another very common form of non-standard employment in Australia is *casual employment*. Casual employment is an employment classification under Australian workplace law whereby an employee is paid at a higher hourly rate (at least a 20% wage premium) in lieu of having a guaranteed amount of working hours, and lacking other usual employment conditions such as paid sick leave. It is characterised by employment by the hour and no ongoing association with the employer: working time can vary on short notice and the contract can be terminated without notice. The share of casual jobs, if measured as the share of workers without paid leave entitlements, grew rapidly in the 1980s and 1990s but has been decreasing slightly over the past decade. Similarly, the share of workers paid from a labour hire firm and independent contractors expanded during the 1990s but stabilised in the past decade (Shomos et al., 2013). However, the prevalence of these forms of jobs remains high, with almost 20% of Australians employed under casual contracts in 2013, 9% as independent contractors and more than 1% through labour hire agencies.[4] In practice, casual and part-time employment frequently coincide, with more than half of part-time jobs being without paid leave entitlements (Figure 1.4).

Figure 1.4.   **Part-time employment and casual employment are important and strongly overlapping in Australia**

Percentage of total salaried employment, 2013

Part-time employees *without* paid-leave entitlements 16.4

Part-time employees *with* paid-leave entitlements 14.7

Full-time employees *without* paid-leave entitlements 7.1

Full-time employees *with* paid-leave entitlements 61.8

Source: ABS (2014), "Forms of employment, Australia", Cat. No. 6359.0, November 2013.

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Whether casual jobs are lower quality jobs than standard jobs (permanent or fixed-term) has been the subject of long-standing debate. While they probably satisfy some flexibility needs for certain groups such as students, a number of studies concentrating on precise job characteristics such as wages, limited control and discretion over working hours, training access, workers' representation and occupational health and safety conclude that they appear to be of inferior quality (van Wanrooy et al., 2009). They could represent a useful stepping stone to standard jobs. Estimating transition probabilities, Buddelmeyer and Wooden (2011) find that this is the case for men, while women had better chances to find a permanent job if unemployed rather than in casual jobs. Watson (2013), taking into account not only the individual characteristics of the worker but also local labour market conditions, concludes that workers on casual contracts have less chance to become permanent than those on fixed-term contracts and that the persistence of casual jobs is higher in disadvantaged localities and in industries with high shares of casual employment.[5]

## Displaced workers: Incidence and characteristics

The incidence of displacement

Job displacement is best understood in the context of overall job turnover, which is quite high in Australia compared with most other OECD countries. OECD job tenure data for the period 2011-12 provides an average separation rate of 19.4% (Figure 1.5). The high rate of turnover, with modest aggregate employment growth, is consistent with many new jobs on the labour market, and an accordingly high job vacancy rate.

According to the Household, Income and Labour Dynamics in Australia (HILDA) Survey and the Labour Mobility Survey (ABS-LMS) data, about one-fifth of all employees leave their job every year, voluntarily or not.[6] According to HILDA data, only a minority (one fifth) of workers who separated from their jobs during 2002-13 were dismissed by their employers for economic reason or for cause (in other words "retrenched", which is the term used in Australia for displaced workers) (Figure 1.6). This share increased to almost 35% in 2009 in the midst of the GFC, due to both an increase in retrenchments and a reduction in other job separations (Figure 1.6, Panel A). After having returned to 20% in 2011, it was back to 28% in 2013 due to the surge in retrenchments. On average, 17.3% of the employees aged 20-64 years separated from their employers each year, whereas just 3.7% of employees were dismissed due to economic reasons or cause, with a minimum of 2.9% in the years preceding the GFC and a maximum of 6% in 2009. Slightly more than a third of this group had less one year of job

tenure. In these cases, job separation happened soon after hiring and may have been the result of the firm and employee deciding that they were not well-matched, rather than displacement for economic reasons related to deteriorating business conditions or the adopting of new production technology.

Figure 1.5.   **Nearly one in five Australians separate from their job every year**

Separation rates^a in OECD countries, 2011-12 average
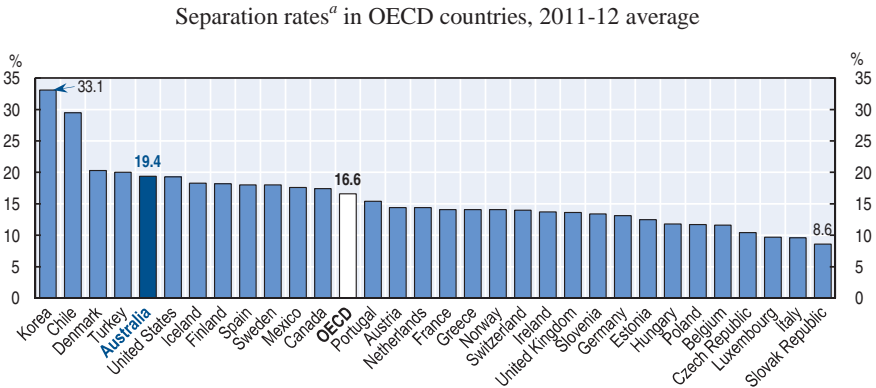
*a)*   Data refer to the difference between the hiring rate and the net employment change.

Source: OECD Job Tenure Dataset, a subset of the *OECD Employment Database*, www.oecd.org/employment/database.

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Along the lines set in OECD (2013a), to avoid unduly including this last type of separations, the displacement rate in this review is defined as the share of employees with tenure of at least one year who were dismissed for economic reasons or for cause.[7] Thus, over the period 2002-13, 2.3% of employees with tenure of at least one year were displaced each year on average, with a minimum of 1.7% in 2008 and a maximum of 3.7% in 2009. The impact of the GFC was important, but did not last long, as the displacement rate was back to 2.2% in 2011. In 2013, however, the displacement rate increased strongly again, to 3.1%. ABS-LMS data over the period 2006-12 provide relatively comparable displacement rates, with a minimum of 1.9% in 2008 and a maximum of 4.1% in 2010 of workers who were retrenched and whose duration of the last job was over one year (Figure 1.6, Panel B).

Figure 1.6. **Most workers separating from their jobs would not be considered displaced workers**

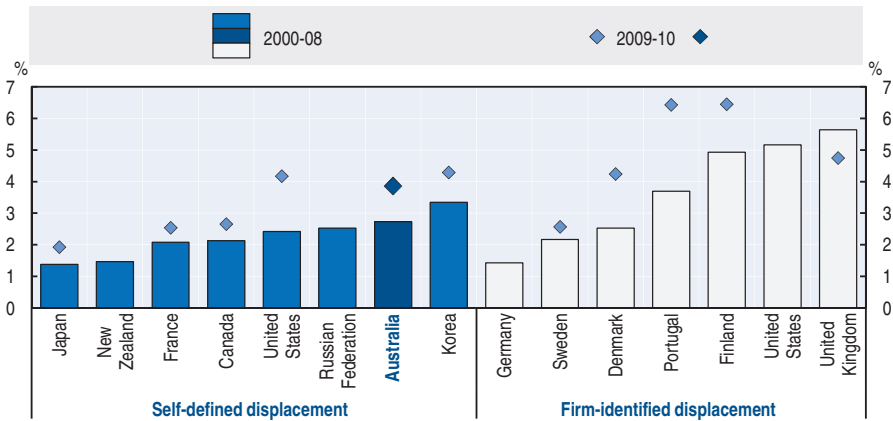Job separation rates by reason and tenure, 2002-13
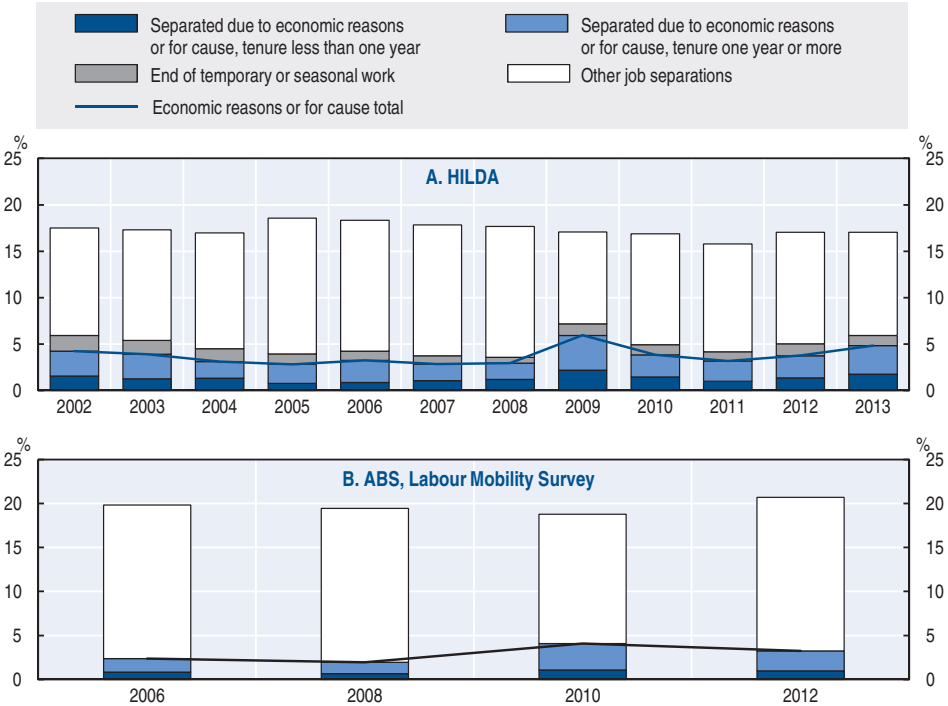
Source: OECD estimates based on data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey for Panel A, and from the Labour Mobility Survey (ABS-LMS) data for Panel B.

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Compared with other OECD countries where displacement is defined and measured in the same way, i.e. self-defined based on household panel data (Figure 1.7), displacement rates are relatively high in Australia. Although it is difficult to establish a clear causal relationship, this is likely to reflect the relatively low level of employment protection (see Chapter 3).

Figure 1.7.   **The Australian displacement rate is high in international comparison**

Percentage of employees aged 20-64 with at least one year of tenure who are displaced from one year to the next, averages; Australia and selected OECD countries, 2000-10^a

a)   Data refer to 2002-13 for Australia. Unlike for the other countries, multiple job holders are included in Australia's sample throughout this chapter; it does not significantly affect the results as it consistently reduces displacement rates by 0.1 percentage point.

Source: OECD estimates based on data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey, and 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, http://www.oecd.org/els/emp/Backtowork-report.pdf.

StatLink ᓂᒪ *http://dx.doi.org/10.1787/888933340063*
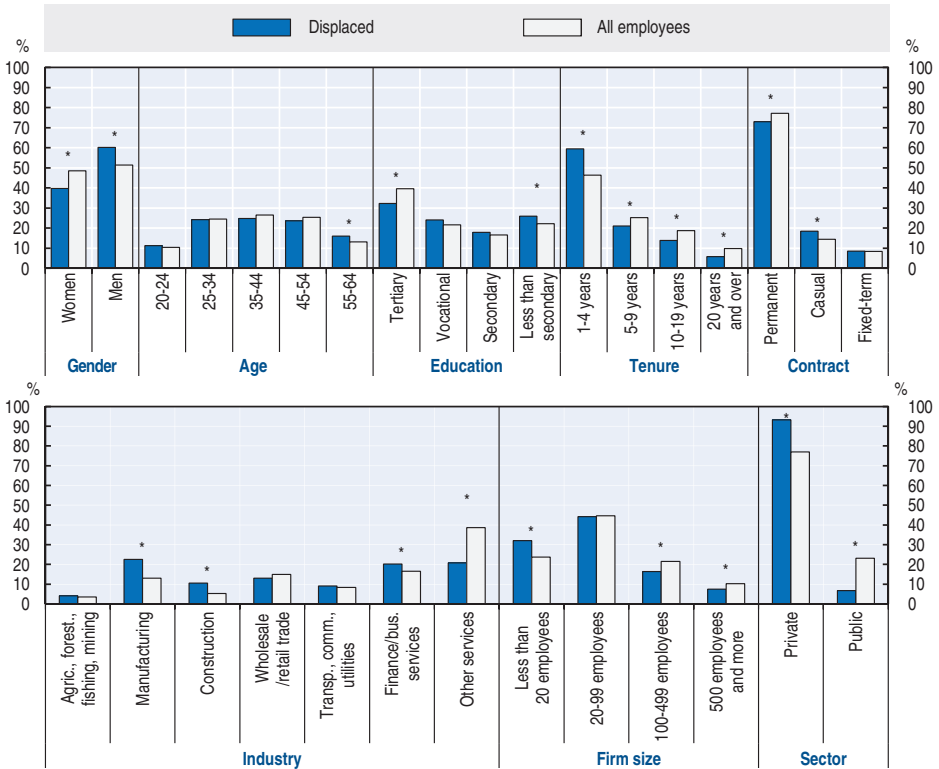
Characteristics of displaced workers

As in most OECD countries, men are more often affected by displacement than women (see Figure 1.8 where the displacement share of men exceeds their share of all employees). As regard age and education, workers aged 55 to 64 years at a greater risk of displacement than younger age groups; and workers without a tertiary education more at risk than the better educated (Table 1.A1.1 in Annex 1A.1 presents a multivariate analysis of displacement risk based on a probit regression, the results of which are very similar to the bivariate results shown in Figure 1.8.) Casual workers are a minority in the displaced workers population but their displacement risk is much higher than for other workers. The displacement risk falls with job tenure, so that a large majority of displaced workers have relatively short tenure (1-4 years).

According to HILDA data, manufacturing workers are over-represented among displaced workers, their probability of being displaced being twice as high as for workers in the category *other services* (Table 1.A1.1). This is also the case for construction workers. In terms of occupations, managers, professionals, trade

workers and plant/machinery operators have above-average displacement rates (data not shown). As in many countries, public sector workers face much lower displacement rates than workers in the private sector.

Figure 1.8. **The displacement risk is relatively high for men, less educated and low-tenured workers, and those employed in manufacturing or casual employment**

Selected characteristics of displaced workers compared with all employees, with at least one year of job tenure, 2002-13, percentages

Note: * Indicates the characteristics of workers/jobs and firms for which the distribution of displaced workers differs from that of all employees at the 5% level of significance.

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

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Displaced workers and the unemployed

While some displaced workers find a job quickly following displacement, many are out of work for a significant period of time, mainly

due to being unemployed. According to HILDA data, displaced workers represented on average 18% of all unemployed workers over the period 2005-13, with a peak of 28% in 2009[8] when the GFC hit hardest. Compared with all unemployed persons, displaced workers tend more often to be men and to be older and better educated (Figure 1.9). Displaced workers have thus higher levels of education and more work experience, which suggests that they may have less difficulty finding another job than the average unemployed person.

Figure 1.9.   **Compared with unemployed people, displaced workers are typically older men with tertiary education and long tenure**

Characteristics of displaced workers compared with unemployed,[a] 2002-13, percentages
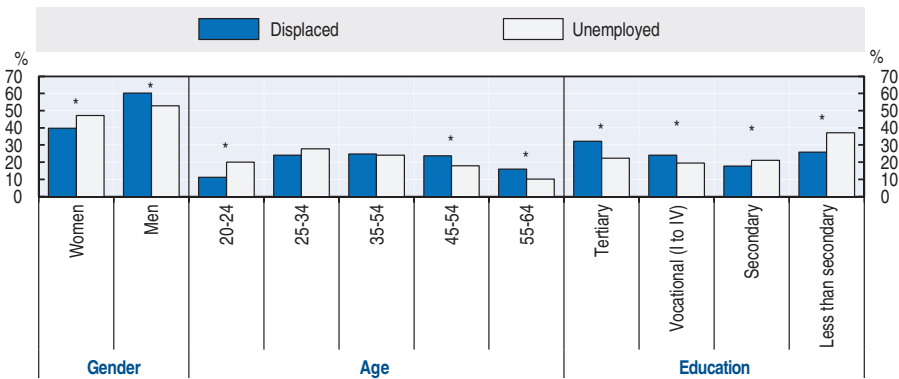
Note: * Indicates the characteristics of workers/jobs and firms for which the distribution of displaced workers significantly differs (i.e. at the 5% level) from that of all employees.

a)   Data refer to people aged 20-64 years. Displaced workers have at least one year of job tenure. Sample excludes public administration.

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

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Labour market outcomes following displacement

Getting back into work

In Australia, a large share of displaced workers rapidly finds another job following displacement: almost 70% are re-employed within one year, and almost 80% within two years (Figure 1.10, Panel A). Re-employment rates continue to increase in the third year, albeit slightly, but fall in the fourth year. They are lower for displaced workers than for workers experiencing other types of job separation.

Not surprisingly, re-employment rates fell significantly during the GFC. For example, the share of displaced workers re-employed within one year declined from 76% in 2008 to 57% in 2010 (Figure 1.10, Panel B). With the rapid rebound in labour market conditions, first-year re-employment rates were already back to 67% in 2011.

The OECD Back-to-Work project has assembled re-employment rates for displaced workers for a number of OECD countries using comparable time periods, samples of workers and definitions of displacement.[9] By comparison with other OECD countries for which data are available, re-employment rates are relatively high in Australia, both in the first and the second year after displacement (Figure 1.10, Panel C). This reflects the relatively good labour market situation described above and probably also the relatively flexible nature of the Australian labour market.
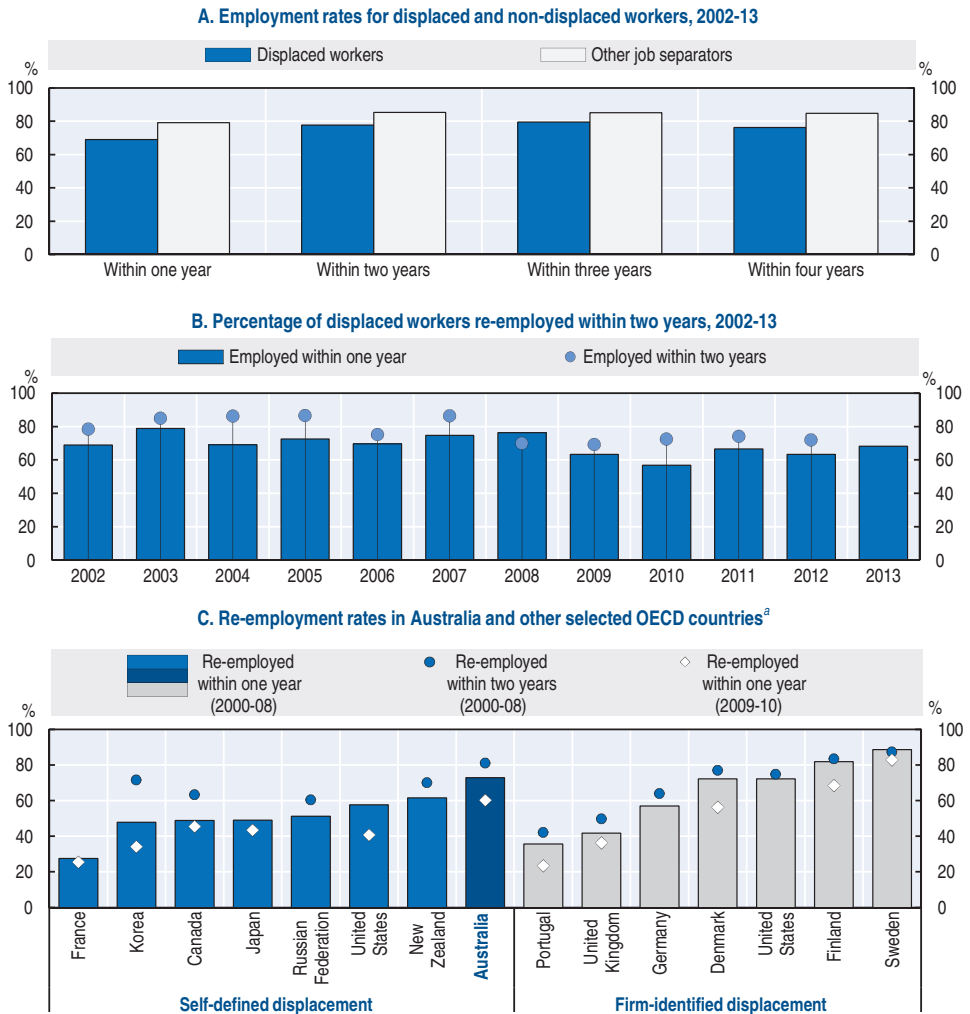
Which displaced workers find work most rapidly?

The probability and speed of re-employment after displacement varies considerably across groups of workers. Older worker, besides facing a higher risk of displacement than other age groups, also have poorer chances of finding a new job. Once other characteristics are controlled for, workers aged 55-64 have a probability of re-employment 23 percentage points lower than people aged 35-44 (Figure 1.11). In fact, re-employment rates within one year consistently decrease with age. Controlling for other characteristics, displaced workers with an intermediate level of tenure on the lost job (5-19 years) have a higher probability of re-employment than either shorter tenure displaced workers (1-4 years) or those with the longest tenure (20 years and more). Similarly, re-employment rates are higher for displaced workers with intermediate levels of education (e.g. a secondary or vocational degree) than those with lower and higher levels of education.[10]

The type of employment contract and employer also affect re-employment outcomes. For example, the re-employment rate for workers displaced from jobs where they had casual contracts are 21 percentage points lower than those for workers displaced from jobs where they had permanent contracts. Similarly, part-time workers have a probability of re-employment 15 percentage points lower than those working full time, once other characteristics are controlled for. Despite having a much lower probability of being displaced in the first place, public sector workers have below-average re-employment rates once they are displaced (Figure 1.11).[11]

Some displaced workers do not return to employment: 16% of them are unemployed at the time of the survey, whereas 15% have left the labour force. While only 7% remain unemployed one year after, the share of those out of the labour force increases very slightly. Women and older workers more commonly leave the labour force following displacement.

Figure 1.10. **Re-employment rates are relatively high in Australia,
but fell considerable during the global financial crisis**

A. Employment rates for displaced and non-displaced workers, 2002-13

B. Percentage of displaced workers re-employed within two years, 2002-13

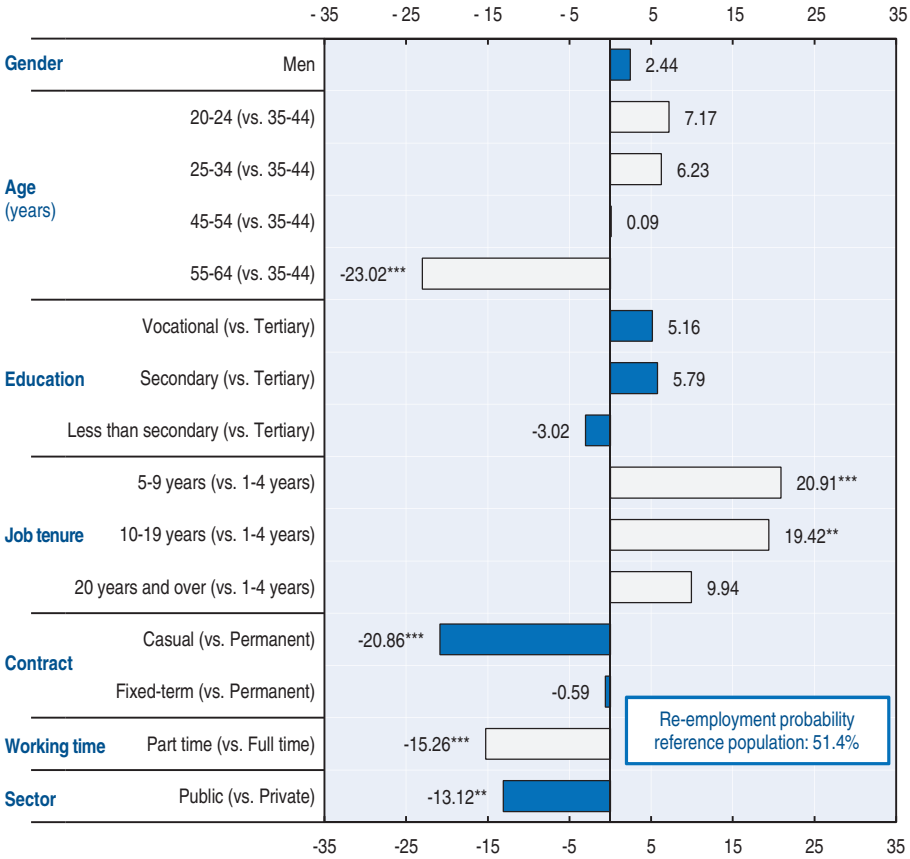**C. Re-employment rates in Australia and other selected OECD countries**[a]

a)   Data for Germany refer to 2004 and for Canada to an average over 2000-07. For the definition of
     displacement in each country and full details on data sources and methodology, see OECD (2013),
     OECD Employment Outlook 2013, OECD Publishing, Paris, http://dx.doi.org/10.1787/
     empl_outlook-2013-en.

Source: OECD estimates based on data from the Household, Income and Labour Dynamics
in Australia (HILDA) Survey for Panels A and B; and data compiled by the OECD using data sources
described in Annex 4.A1, OECD (2013), *OECD Employment Outlook 2013*, OECD Publishing, Paris,
http://dx.doi.org/10.1787/empl_outlook-2013-en for Panel C.

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Figure 1.11.   **Older, part-time and casual displaced workers struggle most
in finding a new job**

Marginal impact of selected characteristics on the likelihood of being re-employed within one year
of displacement, 2002-13, percentage points

		- 35	- 25	- 15	- 5	5	15	25	35

Gender — Men — 2.44

Age (years)
- 20-24 (vs. 35-44) — 7.17
- 25-34 (vs. 35-44) — 6.23
- 45-54 (vs. 35-44) — 0.09
- 55-64 (vs. 35-44) — -23.02***

Education
- Vocational (vs. Tertiary) — 5.16
- Secondary (vs. Tertiary) — 5.79
- Less than secondary (vs. Tertiary) — -3.02

Job tenure
- 5-9 years (vs. 1-4 years) — 20.91***
- 10-19 years (vs. 1-4 years) — 19.42**
- 20 years and over (vs. 1-4 years) — 9.94

Contract
- Casual (vs. Permanent) — -20.86***
- Fixed-term (vs. Permanent) — -0.59

Working time — Part time (vs. Full time) — -15.26***

Sector — Public (vs. Private) — -13.12**

Re-employment probability
reference population: 51.4%

Note: For each characteristic, the figure shows the difference in the probability for those displaced
between year *t-1* and year *t* to be re-employed at year *t* between each category and the reference
category (shown in parenthesis), estimated from a probit model. The model also includes controls
for industry, and occupation. ***, ** and * indicate that the marginal effects are statistically significant
at the 99%, 95% and 90% level, respectively.

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

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Wages and job characteristics following displacement

Displacement implies durable losses in wage income

The weekly income of displaced workers can fall significantly following displacement, in both absolute terms and relative to the earnings of workers who were not displaced (Figure 1.12). According to HILDA data, the average weekly income falls by 30% in real terms in the first year. It recovers gradually afterwards, but remains 14% below its level before displacement even three years later. In large part, this decrease in weekly income stems from the fact that some displaced workers – 31% in the year following displacement and 21% three years after – are not working. A smaller part of the decrease in average income comes from lower earnings levels for those who are in employment, be it due to shorter hours of work or to lower hourly pay rates.[12]

Figure 1.12.   **Job displacement has a significant impact on the income from work**

Average weekly income after displacement, 2002-13, Australian dollars (AUD) and percentages
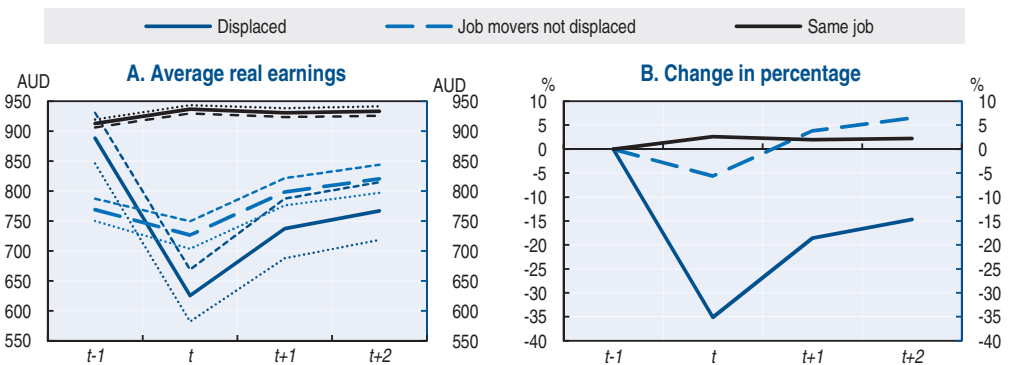
Note: The doted and hyphenated lines on Panel A correspond to the 95% confidence interval; the sample includes all employees between 2002 and 2008; the displaced workers group includes employees who were displaced between year *t-1* and year *t*.

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

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Re-employed displaced workers may experience significant changes in wages

Many displaced workers find a job in the year following displacement. But the new jobs often imply significant changes in wages. A detailed analysis of wage changes for displaced workers is not possible due to the small size of the HILDA sample. However, it is possible to calculate the shares of re-employed displaced workers whose earnings on the new job are: i) significantly below those on the lost job; ii) close to those on the lost job; or iii) significantly higher than on the lost job (Figure 1.13, Panel A). Overall, wage increases are slightly more frequent than wage losses: 44% of those in employment in the three-year period following displacement earn weekly wages more than 10% superior to their wage before displacement, while 36% have weekly wages more than 10% lower than their pre-displacement wages in the first year, and 31% two years after. While many displaced workers experience no enduring loss of earnings once re-employed, the share experiencing a significantly loss is much higher than the corresponding share for workers who were not displaced, and this difference is persistent over time. By and large, evolutions of weekly wages reflect changes in hourly wage rates (Figure 1.13, Panel B).

The group of most interest for policy makers is the displaced workers who incur large wage losses. Not only is the share of displaced workers losing more than 10% in hourly wage higher than for workers who are not displaced, but displaced workers also incur significantly larger average and median hourly wage losses, of 33% and 28%, respectively, in the first year compared with 25% and 21% for non-displaced job losers (Figure 1.14). Their wage losses are also more persistent over time. This is to be contrasted with job movers who are not displaced: those who incur a wage loss greater than 10% experience a smaller but significant average cut in their wage in the first year and they recuperate substantially in the two following years.

Figure 1.13.   **Wages in the new job are often higher than in the job before displacement**

Share of employees according to the change in wages compared with the pre-displacement year, 2002-13
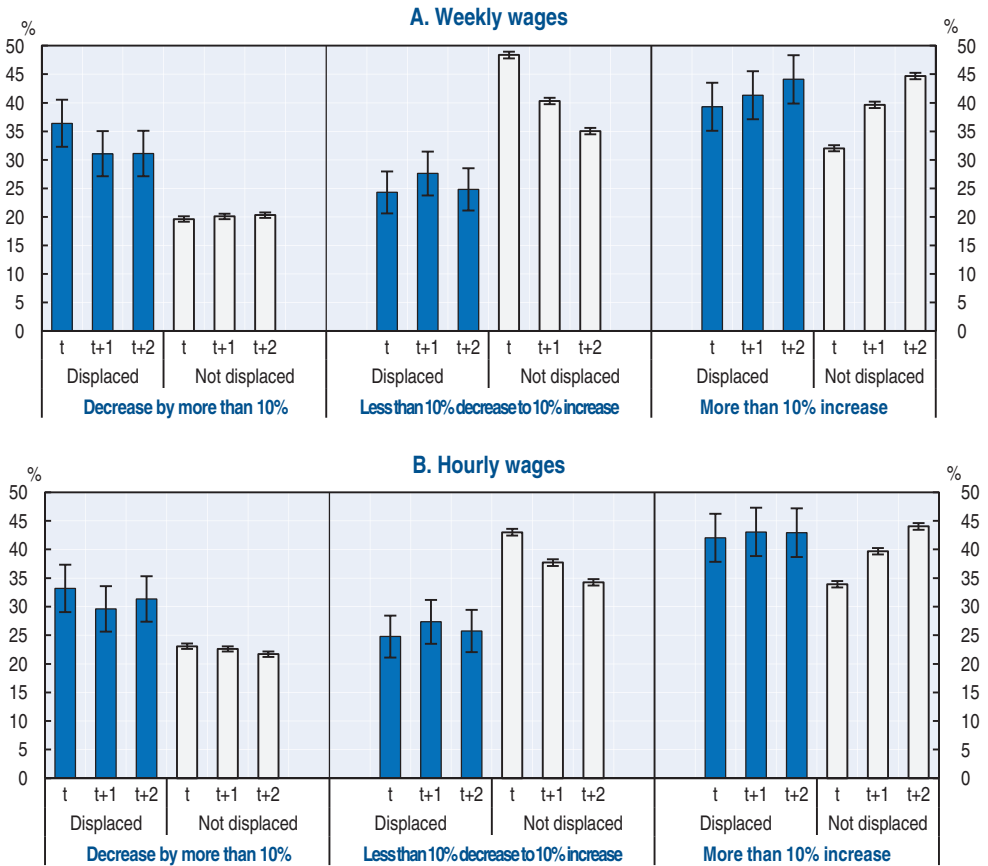
Note: The whisker on the figure represents the 95% confidence interval.

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

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Figure 1.14.   **For those who face hourly wage losses, the size of the loss is quite substantial**

Change in hourly wage compared with pre-displacement year for those incurring losses greater than 10%, 2002-13, percentages
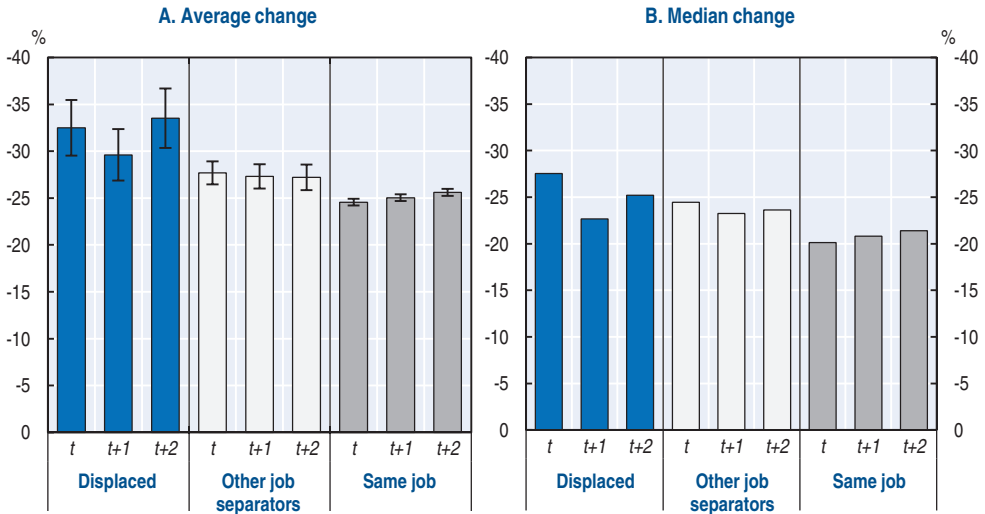
Source: OECD estimates based on data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey.

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Other job quality aspects

Wages are a major aspect of job quality, but other job characteristics also matter for workers' well-being. Figure 1.15 shows that displaced workers also tend to lose in terms of non-wage job quality, although the difference with their pre-displacement job tends to recede in the second year following displacement. The most striking change relates to the type of employment contract: while almost four in five displaced workers were on permanent contract before displacement, only 55% of those who are employed in the two years following displacement get such a contract in the first year and 62% in the second year. Many displaced workers switch from permanent to casual contracts or work for a labour hire agency which tends to imply the same kind of entitlements as casual work.[13] This explains sharp decreases in workers benefiting from paid holiday leave and paid sick leave, but may also explain part of the increases in the hourly wage mentioned above, as casual workers benefit from a wage premium to compensate them for not receiving other entitlements of permanent employees.[14] The share of displaced workers re-employed in casual jobs or via a labour hire agency

declines quite strongly in the second year after displacement, suggesting that a multi-year period may be required to find new jobs that match well workers preferences. There is also a significant and mostly temporary increase in part-time employment: 6% of the displaced workers who are employed in the two years following displacement switch from full-time to part-time in the first year, but the share drops to 1% in the second year following displacement.

Figure 1.15.   **In their new job, many displaced workers are under casual employment contracts**

Change in the distribution of workers between post- and pre-displacement jobs according to selected job characteristics, 2002-13, percentage points
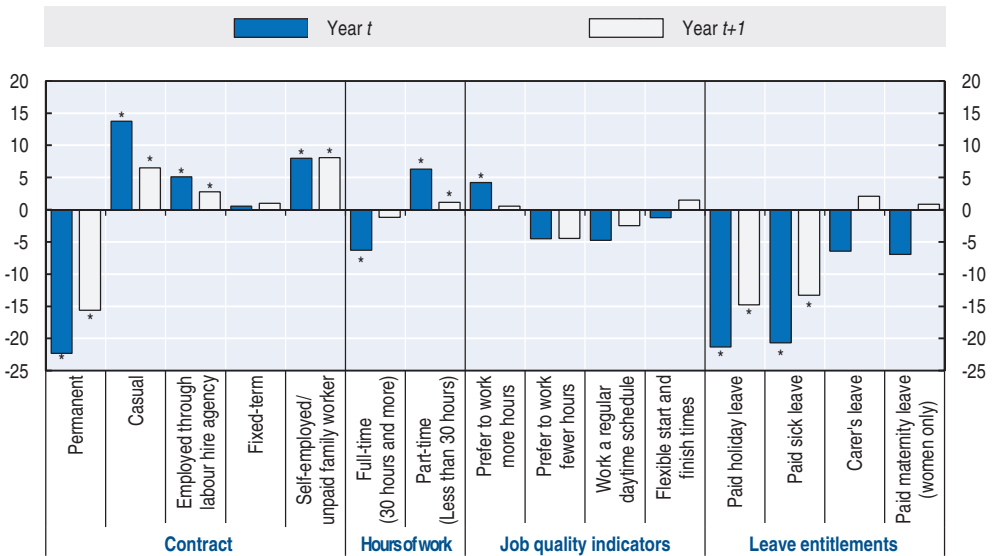
Note: * Indicates the characteristics of jobs for which the distribution of post- and pre-displacement jobs significantly differs (i.e. at the 5% level).

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

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Skill use of displaced workers

One possible explanation for wage losses following displacement is that skills used and developed in the old job may be lost. This loss may be due to skills depreciation during periods of unemployment or inactivity following displacement. Another possibility is that job and sector specific skills are not

valued by prospective new employers (i.e. a loss of industry-specific or occupation-specific human capital due to mismatch). Post-displacement shifts in industry and occupation can provide a rough proxy for skills depreciation. However, data on skills used at work in the pre- and post-displacement job give a better picture of the actual human capital loss following displacement, and allow this loss to be decomposed into more informative components. This is done below, building on the methodology used in OECD (2013a).

Occupational changes and changes in skill requirements

Among displaced workers in Australia who find work within one year, around half change occupation following displacement. Not all workers changing occupations move to new jobs with significantly different skills requirements than their old jobs. Figure 1.16 shows three alternative measures of skills switches that are derived from occupation-specific skill requirements (OECD, 2013a). All three skills-related measures – based on changes in the ranking of key skills used at work, as well as the intensity with which these skills are used – show significantly fewer switches than occupational changes. Between 19% and 32% of displaced workers switch skill-sets. These figures are comparable with those found in other OECD countries such as France, Korea and the United States, and differences in this regard between displaced workers and non-displaced job movers are small.

Figure 1.16. **Between one-fifth and one-third of displaced workers face skills switches**

Occupational changes and skill-set switches for displaced workers, 2002-13, percentages
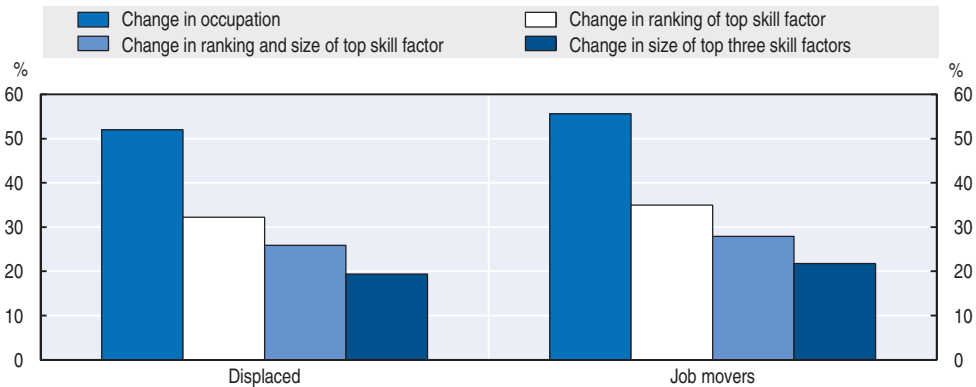
Source: OECD estimates based on data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey.

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Professional downgrading and skill loss following displacement

Not all skill switches lead to professional downgrading. Some displaced workers who are re-employed in occupations with different skill requirements may be moving to jobs with higher skill requirements than those from which they were displaced. One way to qualify skill switches as downgrades or upgrades is to use the change in the years of education required at work following displacement, under the assumption that a positive change is a signal that the person has moved up the career ladder while a negative change points to a move to a lower-level job. Figure 1.17 shows the share of displaced workers who experience a skill switch by socio-demographic characteristics and nature of the switch.

Figure 1.17.   **For displaced workers, skills downgrading is more frequent than skills upgrading**

Workers experiencing skill-set switches, 2002-13, percentage of each group
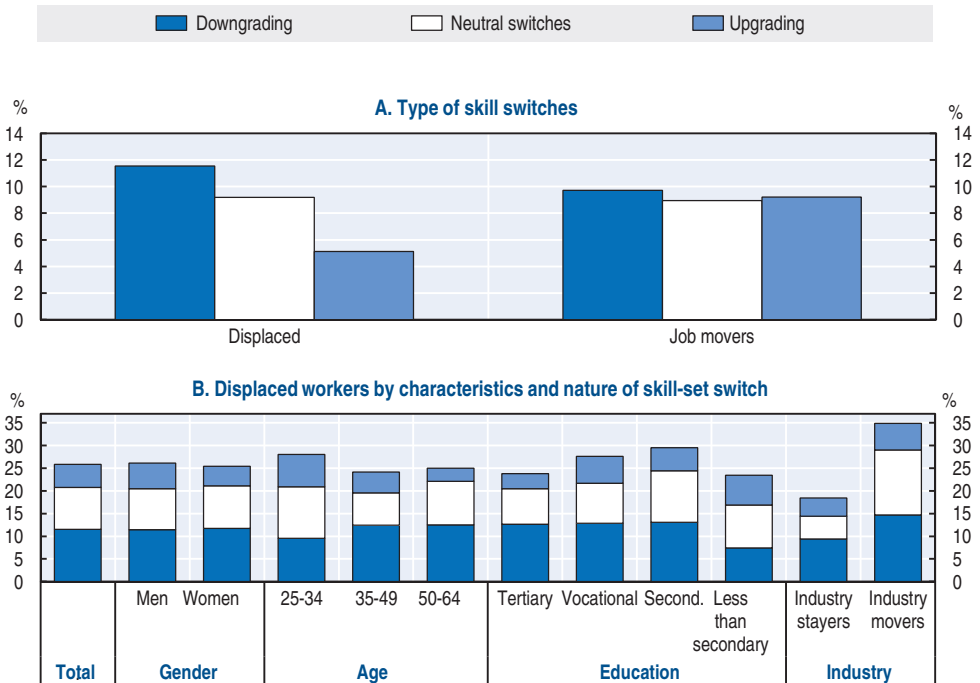
Source: OECD estimates based on data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey.

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Switches in skill requirements accompanied by a fall (rise) in required years of education of at least one year are defined as downgrades (upgrades). In Australia, approximately 12% of displaced workers experience a change in skill set accompanied by professional downgrading at re-employment. There is little variation in this share across displaced workers. Once re-employed, youth and workers with less than secondary skills are slightly less likely to experience downgrading, but this is likely to reflect their lower starting position. The share of displaced workers experiencing downgrading is also just slightly higher than for non-displaced job movers. Skills upgrading, on the other hand, is twice as likely for other job movers as for displaced workers (10% versus 5%). Skills upgrading is more frequent for youth, workers with a vocational education, and those who change industries.

In terms of the skills used in their new jobs, displaced workers tend to experience some human capital loss. They tend to experience a decline in the use of cognitive, mathematical, verbal and interpersonal skills, which are particularly important in the most qualified service sector jobs and occupations (Figure 1.18). By contrast, there is an increase in the use of gross physical skills that are needed in a number of low-skilled jobs. Non-displaced job movers fare significantly better on this account, experiencing pretty much the opposite changes. Whereas displaced workers tend to move toward less skilled jobs, especially as regards, cognitive, social and craft skills, toward the least skilled manual jobs, other job movers tend to flow toward more skilled service sector jobs.

The lower level of mathematical, verbal and cognitive skills used by displaced workers in their new jobs suggests they may be poorly placed to take up expanding and relatively qualified job opportunities in the service sector – the sector in which employment growth was projected to be fastest in the coming years according to Department of Education, Employment and Workplace Relations (DEEWR) job occupation projection 2012-17. This pattern suggests possible role for public policy to assist displaced workers with skill deficits to connect with training programmes that would allow them greater opportunities to access higher quality jobs, especially in the service sector.

Figure 1.18. **Human capital loss concerns especially mathematical, verbal and cognitive skills**

Year-to-year change in skill use for re-employed workers (units of a standard deviation)
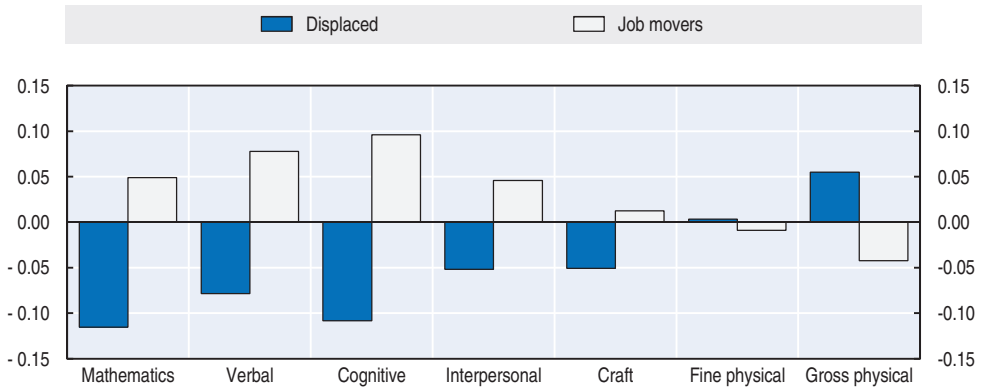
Note: Skill requirements are measured by indices with mean zero and unit standard deviation (see Box 4.3 in OECD, 2013a).

Source: OECD estimates based on data from the Household, Income and Labour Dynamics in Australia (HILDA) Survey; and 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, http://www.oecd.org/els/emp/Backtowork-report.pdf.

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Conclusion

Compared with other OECD countries, the Australian labour market is quite dynamic, with high flows in and out of employment, including displacement flows. After a strong increase during the GFC, the displacement rate quickly returned to much lower levels after the crisis. However, the recent softening of labour market conditions prompted a new rise in displacement that is likely to prove more persistent. Displaced workers in Australia are heterogeneous and not so dissimilar from the overall workforce, but are disproportionately male, young, less educated and working in small and medium-sized firms in the private sector, particularly in manufacturing, construction and finance/business services where they have relatively short job tenure.

Consistent with the dynamism of the Australian labour market, a high share of displaced workers gets back into employment rather quickly. Compared with the overall pool of unemployed, displaced workers have higher education levels and more work experience, which probably makes it easier for them to find a job. However, some groups of displaced workers find it more difficult

than others to find a new job. This is most notably the case for older workers and women, both groups with above-average propensities to withdraw from the labour force after displacement. Workers formerly employed under casual contracts also have lower re-employment rates after displacement.

Displacement can involve significant losses in income for the workers. These losses are mostly attributable to the period of joblessness that often follows displacement, but also reflect reductions in earnings between the lost job and the post-displacement job. However, the situation in terms of the income or re-employed displaced workers is highly variable. Some displaced workers incur wage increases, reflecting the premium associated with changing the job. Paradoxically, these wage increases may also partly reflect the lower quality of the jobs found after displacement: a very large share of permanent employees are only able to find casual or labour hire jobs after displacement. While less protected in many ways, workers under these forms of non-standard contract receive higher wages in compensation. Other displaced workers get lower wages in their new jobs, a loss which tends to persist over time and is significant in size.

One in two displaced workers change occupation in their new job, most often moving from a production occupation in manufacturing to a relatively low-skilled occupation in the service sector. Compared with the average Australian employee, displaced workers tend to be more endowed with craft and both fine and gross physical skills, but less strong in mathematics, verbal, cognitive and interpersonal skills, as reflected in the job skill requirements of their pre-displacement jobs. These differences tend to be reinforced in their post-displacement jobs, which make even less use of cognitive, social and craft skills, but greater use of gross physical skills. While not all displaced workers suffer human capital losses, the losses can be sizeable for a significant minority: about one in eight displaced workers experience a skill-downgrading as reflected by the educational requirements of their old and new jobs. Changes in the skills used on the job also point to some downgrading. These patterns suggest that many displaced workers are not well positioned to benefit from the career opportunities being created by the shift from a manufacturing to services-based economy.

Notes

1. Share of employees which pay was set by collective agreements and by awards only. *Source:* ABS, "Employee earnings and hours, Australia", Cat. No. 6306.0, May 2002 published in March 2003, and May 2014 published in January 2015.

2. ABS (2014), "Forms of employment, Australia", Cat. No. 6359.0, November 2013.

3. According the *OECD Employment Database*, www.oecd.org/employment/database, the share of involuntary part-timers went from about 27% of all part-timers to more than 34% in 2014. Unlike in Australian data, part time is defined as working less than 30 hours.

4. ABS (2014), "Forms of employment, Australia", Cat. No. 6359.0, November 2013.

5. Casual employment is very high in accommodation and food services, retail trade, and health care and social assistance (above 45% of employment) and high in education and training (36%). *Source*: ABS (2013), "Forms of employment, Australia", Cat. No. 6359.0, November 2012.

6. There are two sources to study labour turnover, including displacement, in Australia. The Labour Mobility Survey (ABS-LMS), a module of the Labour Force Survey, provides some information on a large representative sample of workers who change jobs and occupations. As it is not a panel dataset, workers cannot be followed over time. Moreover, it does not include information on earnings and only limited information on personal, job and firm characteristics. The Household, Income and Labour Dynamics in Australia (HILDA) Survey is a panel dataset which follows workers over time. Its main limitation is a small sample size and the resulting lower accuracy. This study relies primarily on the HILDA since it provides a fuller picture of displaced workers and how they fare than does the ABS-LMS, but the latter is used to verify certain findings based on the HILDA.

7. Ideally, job displacement should be defined as having left a job since the previous year for economic reasons. In practice, however, HILDA and ABS-LMS do not distinguish between economic reasons and dismissal for cause; hence, the latter group is also included in the analysis. Termination of a temporary or seasonal contract is another possible reason for having left a job, but it is not possible to distinguish workers who left a temporary contract voluntarily from those who do not have their contract renewed for temporary reasons. Workers who left their job after termination of their contract are not considered as displaced.

8. However, the small sample size implies a confidence interval of 21-33%.

9. OECD (2013a) describes the methods and data used in more detail.

10. These findings are relatively at odds with the research literature; in North America for example, it tends to find that re-employment rates fall continuously with tenure and rise continuously with educational level (see e.g. OECD, 2015a). For Japan, OECD (2015b) also finds that the re-employment probability rises monotonically with educational level. The education pattern in Australia might reflect the mining boom and its resulting strong demand for medium-skilled workers. However, Canada also had a mining boom without generating the same hump-shaped relationship between education and re-employment.

11.   Industry, occupation and firm size of the initial job do not come out significantly in the probit model.

12.   These estimates exclude labour earnings of displaced workers who became self-employed, since the HILDA Survey does not provide data on their earning. Approximately 6% of the displaced workers move into self-employment on average over the period 2002-13.

13.   In fact, most workers employed through a labour hire agency are also under casual contracts.

14.   This is confirmed by HILDA data which show that displaced workers were under permanent contract but found a casual job experience increases in their wage of more than 10% more often than other displaced workers.

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Annex 1.A1

Supplementary table

Table 1.A1.1.   **Probability of being displaced and probability of being re-employed if displaced**

Employees aged 20-64, job tenure one year or more, multiple jobs allowed,
excluding public sector and personal services

		Probability of displacement		Probability of being re-employed if displaced	
Gender	Men vs. Women	0.201		2.437	
Age	20–24 vs. 35-44	–0.231		7.173	
	25–34 vs. 35-44	–0.086		6.234	
	45-54 vs. 35-44	0.202		0.092	
	55-64 vs. 35-44	0.860	***	–23.024	***
Education	Vocational vs. Tertiary	–0.086		5.155	
	Secondary vs. Tertiary	0.060		5.786	
	Less than secondary vs. Tertiary	–0.037		–3.024	
Industry	Agriculture, forestry, fishing, mining vs. Other services	1.031	**	8.320	
	Manufacturing vs. Other services	2.172	***	–1.380	
	Construction vs. Other services	2.011	***	4.187	
	Wholesale/retail trade vs. Other services	0.038		–7.415	
	Transport, storage and communication, electricity, gas and water supply vs. Other services	1.016	***	2.077	
	Finance and business services vs. Other services	1.004	***	3.001	
Occupation	Legislators and managers vs. Professionals	0.786	***	–0.279	
	Technicians and assoc. professionals vs Professionals	0.031		7.521	
	Clerks vs. Professionals	0.360		–0.790	
	Service and sales workers vs. Professionals	0.078		8.861	
	Skilled agricultural workers vs. Professionals	–0.401			
	Tradespersons vs. Professionals	0.533		2.564	
	Plant/machinery operators vs. Professionals	0.243		–2.117	
	Elementary occupations vs. Professionals	0.103		1.047	

Table 1.A1.1. **Probability of being displaced and probability of being re-employed if displaced** *(cont.)*

Employees aged 20-64, job tenure one year or more, multiple jobs allowed,
excluding public sector and personal services

		Probability of displacement		Probability of being re-employed if displaced	
Firm size	Less than 20 employees vs. 20-99 employees	0.347	**	1.269	
	100-499 employees vs. 20-99 employees	-0.306	**	-2.748	
	More than 500 employees vs. 20-99 employees	-0.320		1.964	
Tenure	5-9 years vs. 1-4 years	1.473	***	20.907	***
	10-19 years vs. 1-4 years	0.353		19.422	**
	20 years and over vs. 1-4 years	0.284		9.940	
Contract type	Casual vs. permanent	0.569	**	-20.861	***
	Fixed-term vs. Permanent	0.391		-0.593	
Working time	Part time vs. Full time	0.020		-15.255	***
Sector	Public vs Private	-0.912	***	-13.122	**
Region	Victoria vs. New South Wales	-0.122		-0.955	
	Queensland vs. New South Wales	-0.189		2.745	
	South Australia vs. New South Wales	-0.364	**	3.455	**
	Western Australia vs. New South Wales	-0.618	***	7.656	
	Tasmania vs. New South Wales	-0.527	*	29.163	***
	Northern Territory vs. New South Wales	-0.137		28.261	*
	Australian Capital Territory vs. New South Wales	-0.262		-3.812	

Source: Results from the Household, Income and Labour Dynamics in Australia (HILDA) Survey.

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