Annex A Detailed results

Results from the pooled cross‑sectional and fixed effects logit models used to quantify the relationship between housing assistance and employment are presented in this annex (table 1). Models are presented both with and without interaction terms between housing assistance and state and income support payments (ISPs). Even if they are small, many of the odds ratios are estimated as being significantly different from one, given the very large estimation sample. Given this, a ‘dot’ next to an odds ratio in these tables is used to indicate that the parameter is considered *not* to be significantly different from one.

The logistic regressions presented were conducted to test the hypothesis that housing assistance negatively affects employment of recipients. Results from the pooled cross‑sectional models provide some support for this hypothesis. However, the preferred fixed effects models — which account for unobserved differences — indicate that housing assistance has minimal, if any, effect on employment. Though there is a small positive effect of Commonwealth Rent Assistance (CRA) on employment, the ratio of odds of employment among public housing residents to the odds of employment among those not receiving housing assistance is not significantly different from one.

A range of other variables were included as control variables in these model specifications, with the odds ratios of these control variables generally matching expectations. For example, the odds of employment among recipients of Newstart Allowance and Youth Allowance (Jobseeker) are estimated to be about 4 and 6 times that of the default ISP, Carers Payment in fixed effects model. A notable exception was the estimated effect of region on employment, where ISP recipients in remote or very remote regions were found to be more likely to be employed than those in major cities in the fixed effects models. Though this result is not key to understanding the relationship between housing assistance and employment, and may be related to the operation of Community Development Employment Projects in these areas, it could merit further investigation.

Results from the pooled cross‑sectional analysis of younger ISP recipients living with parents or guardians (table 2) and the analysis of neighbourhood effects among public housing residents are also presented (table 3).

### All income support payment recipients

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| Table 1 Odds ratios, pooled cross sectional and fixed effects models | | | | | | | | | | |
|  | | Pooled cross section | | | | | Fixed effects | | | |
|  | No interactions | | | | Interactions | | No interactions | | Interactions | |
| *Housing assistance status (default: no assistance)*a | | | | | | |  |  |  |  |
| CRA recipient | | | 0.980 |  | 0.885 |  | 1.080 |  | 1.047 |  |
| Public housing tenant | | | 0.617 |  | 0.626 |  | 1.015 | **\*** | 0.973 | **\*** |
| *Housing assistance × State interaction terms (default: Housing assistance × NSW)* | | | | | | | | | | |
| CRA × Vic | | |  |  | 0.975 |  |  |  | 0.984 | **\*** |
| CRA × Qld | | |  |  | 1.035 |  |  |  | 0.968 |  |
| CRA × SA | | |  |  | 0.942 |  |  |  | 0.969 | **\*** |
| CRA × WA | | |  |  | 0.975 | **\*** |  |  | 0.972 | **\*** |
| CRA × TAS | | |  |  | 0.968 | **\*** |  |  | 0.975 | **\*** |
| CRA × NT | | |  |  | 1.701 |  |  |  | 0.939 | **\*** |
| CRA × ACT | | |  |  | 1.036 | **\*** |  |  | 0.958 | **\*** |
| PH × Vic | | |  |  | 0.945 |  |  |  | 0.980 | **\*** |
| PH × Qld | | |  |  | 1.161 |  |  |  | 0.939 |  |
| PH × SA | | |  |  | 0.997 | **\*** |  |  | 0.943 | **\*** |
| PH × WA | | |  |  | 1.038 | **\*** |  |  | 0.966 | **\*** |
| PH × TAS | | |  |  | 0.989 | **\*** |  |  | 0.944 | **\*** |
| PH × NT | | |  |  | 1.605 |  |  |  | 0.959 | **\*** |
| PH × ACT | | |  |  | 0.984 | **\*** |  |  | 1.066 | **\*** |
| *Housing Assistance × ISP interaction terms (default: Housing assistance × Carer Payment)* | | | | | | | | | | |
| CRA × Disability Support Pension | | |  |  | 1.012 |  |  |  | 1.002 |  |
| CRA × Newstart Allowance | | |  |  | 1.158 |  |  |  | 1.077 |  |
| CRA × Parenting Payment (Single) | | |  |  | 1.013 |  |  |  | 1.083 |  |
| CRA × Parenting Payment (Partner) | | |  |  | 1.117 |  |  |  | 1.085 |  |
| CRA × Youth Allowance (Student) | | |  |  | 1.230 |  |  |  | 0.989 |  |
| CRA × Youth Allowance (Jobseeker) | | |  |  | 1.374 |  |  |  | 0.986 |  |
| CRA × Other | | |  |  | 1.577 |  |  |  | 1.019 |  |
| PH × Disability Support Pension | | |  |  | 0.969 |  |  |  | 0.924 |  |
| PH × Newstart Allowance | | |  |  | 1.257 |  |  |  | 1.172 |  |
| PH × Parenting Payment (Single) | | |  |  | 0.707 |  |  |  | 1.089 |  |
| PH × Parenting Payment (Partner) | | |  |  | 1.181 |  |  |  | 1.400 |  |
| PH × Youth Allowance (Student) | | |  |  | 0.896 |  |  |  | 1.136 |  |
| PH × Youth Allowance (Jobseeker) | | |  |  | 0.842 |  |  |  | 1.018 |  |
| PH × Other | | |  |  | 1.145 |  |  |  | 0.972 |  |
| *Income support payment (default: Carer Payment)* | | | | | | |  |  |  |  |
| Disability Support Pension | | | 1.205 |  | 1.216 |  | 1.067 |  | 1.083 |  |
| Newstart Allowance | | | 2.627 |  | 2.488 |  | 4.032 |  | 3.852 |  |
| Parenting Payment (Single) | | | 4.651 |  | 4.953 |  | 3.493 |  | 3.347 |  |
| Parenting Payment (Partner) | | | 1.605 |  | 1.547 |  | 1.496 |  | 1.404 |  |
| Youth Allowance (Student) | | | 4.539 |  | 4.284 |  | 2.824 |  | 2.787 |  |
| Youth Allowance (Jobseeker) | | | 3.549 |  | 3.332 |  | 6.017 |  | 5.933 |  |
| Otherb | | | 1.525 |  | 1.370 |  | 1.897 |  | 1.877 |  |
| **\*** Not statistically different from 1 at the 1 per cent level. | | | | | | | | | | |
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| Table 1 (continued) | | | | | | | | | |
|  | Pooled cross section | | | | Fixed effects | | | | |
|  | No interactions | | Interactions | | No interactions | | Interactions | | |
| *Age (default: 35 to 45)* | | | | | | | | | |
| Aged 15 to 19 | 0.449 |  | 0.462 |  | 0.469 |  | 0.465 |  | |
| Aged 20 to 24 | 0.755 |  | 0.758 |  | 0.782 |  | 0.783 |  | |
| Aged 25 to 34 | 0.903 |  | 0.906 |  | 0.879 |  | 0.879 |  | |
| Aged 45 to 54 | 0.899 |  | 0.897 |  | 1.103 |  | 1.102 |  | |
| Aged 55 to 65 | 0.460 |  | 0.462 |  | 0.748 |  | 0.747 |  | |
| Female | 1.461 |  | 1.457 |  |  |  |  |  | |
| Married/de facto | 1.034 |  | 1.037 |  | 1.279 |  | 1.280 |  | |
| Indigenous | 0.671 |  | 0.672 |  |  |  |  |  | |
| English as preferred language | 2.021 |  | 2.026 |  |  |  |  |  | |
| Children aged less than 5 | 0.491 |  | 0.489 |  | 0.498 |  | 0.498 |  | |
| Children aged 5 to 14 | 0.932 |  | 0.933 |  | 0.843 |  | 0.842 |  | |
| Medical condition | 0.661 |  | 0.659 |  | 0.581 |  | 0.581 |  | |
| *State (default: NSW)* | | | | |  |  |  |  | |
| Vic | 1.091 |  | 1.104 |  | 0.988 | **\*** | 0.998 | **\*** | |
| Qld | 1.207 |  | 1.178 |  | 1.201 |  | 1.225 |  | |
| SA | 1.283 |  | 1.307 |  | 1.038 | **\*** | 1.057 |  | |
| WA | 1.320 |  | 1.327 |  | 1.433 |  | 1.456 |  | |
| Tas | 1.215 |  | 1.228 |  | 0.966 | **\*** | 0.982 | **\*** | |
| NT | 0.980 | **\*** | 0.788 |  | 2.082 |  | 2.151 |  | |
| ACT | 1.428 |  | 1.428 |  | 1.599 |  | 1.624 |  | |
| *Year (default: 2005)* | | | | |  |  |  | |  | |
| 2006 | 1.093 |  | 1.093 |  | 1.258 |  | 1.259 | |  | |
| 2007 | 1.214 |  | 1.214 |  | 1.574 |  | 1.574 | |  | |
| 2008 | 1.316 |  | 1.316 |  | 1.910 |  | 1.911 | |  | |
| 2009 | 1.157 |  | 1.156 |  | 1.516 |  | 1.518 | |  | |
| 2010 | 1.144 |  | 1.142 |  | 1.514 |  | 1.516 | |  | |
| 2011 | 1.175 |  | 1.172 |  | 1.643 |  | 1.646 | |  | |
| 2012 | 1.085 |  | 1.083 |  | 1.531 |  | 1.533 | |  | |
| 2013 | 1.042 |  | 1.039 |  | 1.437 |  | 1.439 | |  | |
| *Region(default: major city)* | | | | |  |  |  | |  | |
| Inner regional | 1.135 |  | 1.135 |  | 0.947 |  | 0.946 | |  | |
| Outer regional | 1.078 |  | 1.073 |  | 0.993 | **\*** | 0.992 | | **\*** | |
| Remote or very remote | 0.778 |  | 0.788 |  | 1.343 |  | 1.342 | |  | |
| *Address changes in previous year (default: none)* | | | | |  |  |  | |  | |
| 1 change | 0.804 |  | 0.801 |  | 0.820 |  | 0.820 | |  | |
| 2 changes | 0.634 |  | 0.631 |  | 0.736 |  | 0.737 | |  | |
| 3 or more changes | 0.432 |  | 0.430 |  | 0.642 |  | 0.642 | |  | |
| SA1 IRSD decile | 1.051 |  | 1.051 |  | 1.011 |  | 1.011 | |  | |
| Constant | 0.053 |  | 0.054 |  |  |  |  | |  | |
| Observations | 17 690 692 | | | | 5 572 473 | | | | |
| **\*** Not statistically different from 1 at the 1 per cent level. PH – public housing. a The housing assistance variable indicates housing assistance status in the previous year. b Other payments include a range of less common income support payments, including Bereavement Allowance, Wife’s Pension, Wife’s Disability Support Pension, Austudy, Partner Allowance, Sickness Allowance, Special Benefits, Widow Allowance and Abstudy. | | | | | | | | | |
| *Source:* Author estimates based on Research and Evaluation Database. | | | | | | | | | |
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### Young ISP recipients living with parents or guardians

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| Table 2 Odds ratios, pooled cross sectional models | | | | |
|  | Pooled cross section without interactions | | Pooled cross section with interaction | |
| *Parental housing assistance status (default: No assistance)*a | | |  |  |
| CRA recipient | 0.798 |  | 0.834 | **\*** |
| Public housing tenant | 0.679 |  | 0.822 | **\*** |
| *Parental housing assistance × State interaction terms (default: Parental housing assistance × NSW)* | | | | |
| CRA × Vic |  |  | 1.008 | **\*** |
| CRA × Qld |  |  | 1.047 | **\*** |
| CRA × SA |  |  | 0.985 | **\*** |
| CRA × WA |  |  | 0.942 | **\*** |
| CRA × TAS |  |  | 0.933 | **\*** |
| CRA × NT |  |  | 2.408 |  |
| CRA × ACT |  |  | 0.893 | **\*** |
| PH × Vic |  |  | 0.848 |  |
| PH × Qld |  |  | 0.967 | **\*** |
| PH × SA |  |  | 0.928 | **\*** |
| PH × WA |  |  | 0.770 |  |
| PH × TAS |  |  | 0.892 | **\*** |
| PH × NT |  |  | 1.800 |  |
| PH × ACT |  |  | 0.740 |  |
| *Parental housing assistance × ISP interaction terms*  *(default: Parental housing assistance × Carer Payment)* | | | | |
| CRA × Disability Support Pension |  |  | 1.018 | **\*** |
| CRA × Newstart Allowance |  |  | 1.069 | **\*** |
| CRA × Parenting Payment (Single) |  |  | 0.883 | **\*** |
| CRA × Parenting Payment (Partner) |  |  | 0.958 | **\*** |
| CRA × Youth Allowance (Student) |  |  | 0.931 | **\*** |
| CRA × Youth Allowance (Jobseeker) |  |  | 0.958 | **\*** |
| CRA × Other |  |  | 1.075 | **\*** |
| PH × Disability Support Pension |  |  | 1.161 | **\*** |
| PH × Newstart Allowance |  |  | 0.979 | **\*** |
| PH × Parenting Payment (Single) |  |  | 0.736 |  |
| PH × Parenting Payment (Partner) |  |  | 1.009 | **\*** |
| PH × Youth Allowance (Student) |  |  | 0.909 | **\*** |
| PH × Youth Allowance (Jobseeker) |  |  | 0.772 |  |
| PH × Other |  |  | 0.800 | **\*** |
| **\*** Not statistically different from 1 at the 1 per cent level. | | | | |
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| Table 2 (continued) | | | | |
|  | Pooled cross section model without interactions | | Pooled cross section with interactions | |
| Female | 1.536 |  | 1.537 |  |
| Married/de facto | 0.927 |  | 0.930 |  |
| Indigenous | 0.549 |  | 0.553 |  |
| English as preferred language | 2.295 |  | 2.276 |  |
| Children aged less than 5 | 0.571 |  | 0.570 |  |
| Medical condition | 0.574 |  | 0.574 |  |
| *State (default: NSW)* |  |  |  |  |
| Vic | 1.096 |  | 1.122 |  |
| Qld | 1.434 |  | 1.416 |  |
| SA | 1.282 |  | 1.303 |  |
| WA | 1.405 |  | 1.502 |  |
| Tas | 1.052 | **\*** | 1.090 |  |
| NT | 0.856 |  | 0.589 |  |
| ACT | 1.176 |  | 1.351 |  |
| *Income support payment (Default: Carer Payment)* | | |  |  |
| Disability Support Pension | 2.225 |  | 2.151 |  |
| Newstart Allowance | 2.588 |  | 2.583 |  |
| Parenting Payment (Single) | 1.809 |  | 2.042 |  |
| Parenting Payment (Partner) | 1.322 |  | 1.357 |  |
| Youth Allowance (Student) | 2.785 |  | 2.936 |  |
| Youth Allowance (Jobseeker) | 3.119 |  | 3.377 |  |
| Otherb | 1.914 |  | 1.980 |  |
| *Year (default: 2005)* |  |  |  |  |
| 2006 | 1.059 |  | 1.060 |  |
| 2007 | 1.126 |  | 1.126 |  |
| 2008 | 1.109 |  | 1.110 |  |
| 2009 | 0.919 |  | 0.919 |  |
| 2010 | 0.895 |  | 0.896 |  |
| 2011 | 0.873 |  | 0.874 |  |
| 2012 | 0.883 |  | 0.884 |  |
| 2013 | 0.952 |  | 0.951 |  |
| *Region(default: major city)* |  |  |  |  |
| Inner regional | 1.154 |  | 1.157 |  |
| Outer regional | 0.992 | **\*** | 0.993 | **\*** |
| Remote or very remote | 0.518 |  | 0.545 |  |
| *Address changes in previous year (default: none)* | | |  |  |
| 1 change | 0.787 |  | 1.157 |  |
| 2 changes | 0.649 |  | 0.648 |  |
| 3 or more changes | 0.422 |  | 0.420 |  |
| SA1 IRSD decile | 1.052 |  | 1.053 |  |
| Constant | 0.036 |  | 0.034 |  |
| Observations | 1 140 839 | | | |
| **·** Not statistically different from 1 at the 1 per cent level. PH – public housing. a Parental housing assistance indicates parental housing assistance status in the previous year. b Other payments include a range of less common income support payments, including Bereavement Allowance, Wife’s Pension, Wife’s Disability Support Pension, Austudy, Partner Allowance, Sickness Allowance, Special Benefits, Widow Allowance and Abstudy. | | | | |
| *Source:* Author estimates based on Research and Evaluation Database. | | | | |
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### Neighbourhood effects model

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| Table 3 Odds ratios, fixed effects model  Public housing residents only | | |
|  | Odds ratios | |
| *Index of Relative Socioeconomic Disadvantage quintile (Default: Top three quintiles)* |  |  |
| Bottom quintile | 0.931 | **\*** |
| Second quintile | 0.934 | **\*** |
| *Age (default: 35 to 45)* |  |  |
| Aged 15 to 19 | 0.228 |  |
| Aged 20 to 24 | 0.481 |  |
| Aged 25 to 34 | 0.743 |  |
| Aged 45 to 54 | 1.093 |  |
| Aged 55 to 65 | 0.776 |  |
| Female |  |  |
| Married/de facto | 1.345 |  |
| Indigenous |  |  |
| English as preferred language |  |  |
| Children aged less than 5 | 0.440 |  |
| Children aged 5 to 14 | 0.757 |  |
| Medical condition | 0.619 |  |
| *Income support payment (Default: Carer Payment)* |  |  |
| Disability Support Pension | 0.890 |  |
| Newstart Allowance | 4.545 |  |
| Parenting Payment (Single) | 3.430 |  |
| Parenting Payment (Partner) | 1.989 |  |
| Youth Allowance (Student) | 2.359 |  |
| Youth Allowance (Jobseeker) | 5.376 |  |
| Othera | 1.724 |  |
| *State (default: NSW)* |  |  |
| Vic | 0.860 | **\*** |
| Qld | 1.086 | **\*** |
| SA | 1.066 | **\*** |
| WA | 1.427 | **\*** |
| Tas | 0.507 | **\*** |
| NT | 2.277 |  |
| ACT | 2.841 |  |
| *Year (default: 2005)* |  |  |
| 2006 | 1.339 |  |
| 2007 | 1.751 |  |
| 2008 | 2.314 |  |
| 2009 | 1.735 |  |
| 2010 | 1.595 |  |
| 2011 | 1.643 |  |
| 2012 | 1.504 |  |
| 2013 | 1.262 |  |
| **\*** Not statistically different from 1 at the 1 per cent level. | | |
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| Table 3 (continued) | | |
|  | Odds ratios | |
| *Region(default: major city)* |  |  |
| Inner regional | 1.079 | **\*** |
| Outer regional | 1.065 | **\*** |
| Remote or very remote | 2.326 |  |
| *Address changes in previous year (default: none)* |  |  |
| 1 change | 0.777 |  |
| 2 changes | 0.615 |  |
| 3 or more changes | 0.552 |  |
| Observations | 396 499 | |
| **\*** Not statistically different from 1 at the 1 per cent level. a Other payments include a range of less common income support payments, including Bereavement Allowance, Wife’s Pension, Wife’s Disability Support Pension, Austudy, Partner Allowance, Sickness Allowance, Special Benefits, Widow Allowance and Abstudy. | | |
| *Source:* Author estimates based on Research and Evaluation Database. | | |
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