

# **Are Casual and Contract Terms of Employment Hazardous for Mental Health in Australia?**

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## **Abstract**

The risk that flexible forms of employment are harmful to the health of workers is a major public health issue for the many countries, including Australia, where such forms of employment are common or have been growing. We ask whether the century-old system of arbitrated protections for workers and the distinctive welfare state in Australia averts any such harm to mental health. If Australian workers are harmed despite these protections, this adds weight to the international concerns about the hazards of flexible employment. Employing nine waves of panel survey data and dynamic random-effects panel data regression models, we examine the mental health consequences of unemployment, and of employment on a casual or fixed-term basis, compared with permanent employment. We control for demographic and socio-economic characteristics, occupation, disabilities status, negative life events, and the level of social support. We find almost no evidence that flexible employment harms mental health. Unemployed men (but not women) have significantly and substantially lower mental health. But among the employed, only men who are on fixed term contracts, most especially graduates, have lower mental health than those who are employed on full-time permanent terms. Women have significantly *higher* mental health if they are employed full-time on casual terms.

**Key words:** Precarious, flexible or contingent employment; Mental health; Longitudinal data; HILDA survey; Health inequalities; Econometric models; Australia

## 1. Introduction

Men, and increasingly women too, spend the bulk of the best years of their lives and the best hours of the day in paid work. What happens in these hours of work is important for the mental and physical health of the working population. The past century has seen great progress in economically developed countries in reducing the physical hazards of work, in particular from accidents. Safer work practices have been enhanced by the change in the structure of the economies of developed nations away from the (relatively hazardous) production of tangible primary and manufactured goods to the production of services: workers have moved from the factory floor and farm to the office. A consequence of the movement of work into the office is that any harm caused is likely to be more subtle than losing one's hand to a grinder in a tool shop, and to occur through mental health pathways. In part because of this shift to service production, the ways in which people are employed have also been changing, with a move from contracts of full-time permanent employment to a variety of terms that imply weakened 'implicit contracts' of continuing and substantial employment. It is the purpose of this paper to examine the impacts on the mental health of Australian workers of being employed on casual or fixed term contracts rather than on full-time permanent terms.

The proportion of individuals employed in flexible work, including part-time, casual, fixed-term, labour-hire and self-employed jobs, has increased greatly in all industrial countries since the 1980s (Bergstrom and Storrie, 2003; Quinlan, *et al.*, 2001).<sup>i</sup> Australia is no exception, with much of the change occurring in the decade to 1998. Since then, the share of flexible employment has remained high. In 2010, nearly 30 percent of all employees, excluding the self-employed, were employed on casual or fixed term contracts: one quarter of all employees were casuals and 3 per cent were on fixed term contracts (ABS, 2010). There is a clear gender difference: women are much more likely than men to be employed on casual terms and part-time (ABS, 2010). However, over the past 15 years, more women enjoyed the newly created full-time permanent jobs, while men of prime working age were increasingly in full-time casual employment.

The term "precarious" employment is often applied to such jobs and implies disadvantage. It emerged in European debates that were concerned with the growth of 'non-standard' forms of employment—i.e., forms that differed from the (male) norm of full-time, permanent, full-year. Analysts were concerned that workers were increasingly exposed to insecurity of employment and denied many of the benefits that came with standard employment, such as paid leave, unemployment insurance, health benefits and training (Benach *et al.*, 2002). The clear presumption was that the alternatives to standard forms of work were inferior and, while perhaps of benefit to employers, were detrimental to workers. Green *et al.* (2010) develop an index of job quality for Australia and conclude that flexible jobs are indeed inferior to permanent jobs. In particular, for both sexes, 'part-time casual job quality ranked below permanent part-time workers and full-time casuals.' p.622. This conclusion contrasts with that of Wooden and Warren (2004) but is based on more robust estimation methods. Specifically, Green *et al.* (2010) use the panel nature of their data to control for unobserved heterogeneity, which they find is important, and Wooden and Warren did not<sup>ii</sup>.

Our interest is not job quality per se, but the harm that flexible work is believed to cause to the (mental) health of workers.

There is growing international evidence that insecurity, high demands and powerlessness have negative health consequences (Kawachi, 2008; Virtanen *et al.*, 2005), even though the findings are not yet conclusive. In their recent overview, Ferrie *et al.* (2008, p.99) observe that “Moves towards a more flexible labor market have focused research attention on the health effects of downsizing, temporary employment, and job insecurity. Most published research documents adverse effects on health, although null findings and direct associations have been observed.” Job insecurity has been identified as a major pathway linking flexible employment with negative health outcomes (Ferrie 1999) and meta-analyses confirmed the significant associations between them (De Witte 1999; Sverke, Hellgren and Naswall 2002). However, subjective job insecurity is only one dimension of flexible employment and as such provides a partial picture of its health consequences (Benach *et al.* 2002; Benach and Muntaner 2007). Dockery (2007) finds that working non-standard hours (particularly, long hours) and job insecurity both reduce mental health for Australian workers.

Studies that examine how the objective form of employment, as distinct from the subjective feelings of insecurity and powerlessness, relates directly to health show inconsistent findings. For example, Benavides *et al.* (2000) studied cross-sectional data from 15 European countries and reported that ‘precarious’ employment was more stressful. In contrast, Virtanen *et al.* (2002) reported that both men and women with fixed-term employment generally had better self-rated health compared to their permanent counterparts. Using longitudinal data from both Britain and Germany, Rodriguez (2002) found only fixed-term employees in Germany reported significantly lower mental health. In a similar exercise with more detailed analyses, but focusing on British workers alone, Bardasi and Francesconi (2004) still did not find any significant health consequences of ‘precarious’ employment. A more recent study for Korea using longitudinal data reported significant health damaging impacts of flexible employment (Kawachi, 2008; Kim *et al.*, 2008).

Many studies find an association between being unemployed, and low mental health. Unemployment is a relevant category for our study, because flexible jobs are often justified as providing stepping stones into employment for people who are out of work. The strong theoretical expectation of a two-way causation between low mental health and unemployment makes it difficult to establish empirically the extent to which unemployment causes a fall in mental health. Panel data sets with a substantial number of waves of observations are making it possible for researchers to begin to unravel this knot. Dockery (2007:19), for example, uses 4 waves of panel data to conclude that ‘the negative impact of unemployment on mental health is not a monotonic one with respect to duration. There appears to be an initial negative ‘shock’, which then abates before mental health begins to deteriorate again.’ Psychologists, using different research strategies, have found that generally unemployment is harmful to mental health, but some types of jobs are more harmful than is unemployment (eg Winefield, 2000; Strazdins *et al.*, 2004).

We conclude that there is reason to be concerned about a direct impact of unemployment and some forms of flexible employment on mental health, but the exact form and strength of the connection is not settled. We expect any such effects to be mediated by the welfare

and employment protections offered in each country (Siegrist *et al.*, 2010), It is the purpose of this study to provide further evidence on the relation between the objective circumstance of being unemployed, employed on casual or fixed terms, and mental health, in the Australian context.

Australia is an interesting case. There has been an increase in flexible employment, and it remains at high levels. But there are distinctive protections against and compensation for the risks of such employment that are provided by the welfare state and the industrial relations system: we expect these to ameliorate their adverse consequences for workers. First, neither health care nor unemployment benefits are tied to prior employment history (unlike the insurance schemes variously used in North America and Europe). Second, the industrial relations system requires that casual employees be paid at a *higher* hourly rate than permanent workers doing the same work, in explicit compensation for the lack of security and paid leave. The typical ‘casual premium’ is 20-25 percent of the hourly wage. It is being progressively raised to 25 per cent for all modern awards. In addition, employers are equally obligated to contribute to the individual superannuation accounts of casual workers as for permanent workers.<sup>iii</sup> Third, casual workers have the same protections as permanent workers against unfair dismissal and discrimination. Fourth, casual employees are entitled to compassionate and carer’s leave, although unlike permanent employees, this is unpaid. They are entitled to penalty rates for work done outside normal business hours and in most cases, a minimum shift of three hours.<sup>iv</sup>

Employees on fixed term contracts have the same conditions as permanent employees, except that there is a defined end date to the job and an obligation on the employer not to dismiss them prior to that date. They tend to be young and highly educated working as professionals, in health and education—not the profile usually expected of vulnerable workers.

An important consequence of the conditions surrounding casual and contract employment in Australia is that these forms of employment might *reasonably be preferred* by some workers, including people with significant caring responsibilities, workers approaching retirement and full-time students. Casual jobs are not necessarily bad jobs, taken because a permanent job was not available.

Despite the protections, the higher hourly pay and the potential for the exercise of choice over when to work, casual work is disliked by some workers (Pocock, *et al.*, 2004; Watson, 2005). In addition to higher job insecurity, casual employees lack opportunities for on-the-job training and a career path (Richardson and Liu, 2004). In a qualitative study, Pocock *et al.* (2004) found that the experience of casual work varied greatly by employer and that for some workers casual employment is “undermining self-esteem and contributing to worry and stress over money and predictable work” (Pocock *et al.*, 2004, p.7). In Canada, in-depth interviews of intermittent workers reported similar findings (Malenfant *et al.*, 2007).

The experience of flexible employment is likely to be quite different for the many students who take on casual work while studying. Preliminary analysis of our data found no evidence that casual employment is problematic for full-time students (who primarily work as part-time casuals). For this reason, we exclude full-time students from our analysis. This enables us to focus our enquiry on employees who have made the transition from education

to work and are now in the ‘working’ phase of their lives, and it prevents the presence of full-time students from clouding the empirical relationship for ‘workers’.

The experience of flexible employment is likely to differ among men and women. We expect that men experience a conflict between their traditional family roles as breadwinners and the reality of uncertain earnings and low status employment that often goes with casual employment. At worst, they are stuck with “inferior” jobs with low pay, an implicit contract that says that their jobs and/or hours of work could be varied at any time by the employer, marginalisation in the workplace, little hope for career development and low status. All these could contribute to chronic mental distress. In contrast, many women who work on casual terms are second earners in the family, so job insecurity is more tolerable, and they may value the work and life balance made possible by casual and/or part-time work.

We propose two hypotheses. First, the distinctive protections for flexible employees in Australia, in particular for casuals, are able to ameliorate any potential harmful effects to their mental health. Second, to the extent that flexible employment is harmful to mental health, men are more at risk than women. We include unemployment as a category, and see whether movement between unemployment and the various forms of employment has an impact on mental health.

Given our first hypothesis, a finding of adverse mental health impacts of flexible employment in Australia would lend added weight to international concerns about the health risks of employing people in these ways.

## **2. Data and Method**

### *2.1 Data and statistical analysis*

We used the first nine waves of the HILDA survey, which is a broad social and economic panel survey with a focus on employment, income and family formation. The data are collected annually, starting in 2001, from over 7,000 randomly chosen households across Australia. Detailed information about the HILDA is available in Wooden and Watson (2007).

In line with our research hypotheses, we restricted our analysis to people who were unemployed or employees, at two or more points in time during the survey period. Employers and self-employed people were excluded, as were full-time students. The sample is also restricted to people in the range 15 to 64 years of age (inclusive) at wave 1. We analysed data for males and females separately. After exclusions and missing data, the estimation sample is 18,994 for males and 19,375 for females.

In the HILDA Person Questionnaire, employees were asked, in each wave: “Looking at Show Card ..., which of these categories best describes your current contract of employment?” In the show card, four mutually exclusive options were available: “(1) Employed on a fixed-term contract; (2) Employed on a casual basis; (3) Employed on a

*permanent or ongoing basis; and (4) Other (please specify)*”. The answers to this question provide the key explanatory variable in our analyses.

The Mental Health Inventory (MHI-5) is derived from the Medical Outcomes Study Short Form (SF-36) survey module (Ware Jr. and Kosinski, 2001) collected in the HILDA Self-completion Questionnaire. The dependent variable representing mental health is the normalised score ranging from 0 to 100 of the MHI-5.

Our objective is to establish whether workers employed on casual or contract terms have, on that account, lower mental health, compared with employment on permanent terms. We also explore differences in mental health arising from part-time as compared with full-time employment, and the consequences of being unemployed.

Our strategy is to estimate a robust model of mental health. The model estimates whether people who are unemployed, or employed on casual or fixed term contracts, have significantly lower (or higher) mental health compared with people (including themselves at another period) employed full-time on permanent terms, controlling for other potential determinants of their mental health. We distinguish full-time from part-time employment. The use of panel data techniques allows us to account for systematic individual-specific unobserved heterogeneity.

## 2.2 The Econometric Model

We use a dynamic random effects panel model, where the dependent variable is the index of mental health status (range 0 to 100) and a (one year) lag of the dependent variable is included. To allow for potential correlation between the individual specific effects and explanatory variables the Mundlak augmentation is used (Mundlak, 1978; Baltagi, 2003).

Following Heckman (1981) (see also Hsiao, 2003), information contained in the first wave of HILDA is used to derive a predicted value of initial mental health, which we include as an explanatory variable. The model of initial mental health includes individual attributes containing past and unchanging information (e.g. country of birth, the age they left school, region, Indigenous status and personality type). The estimated starting level of mental health is strongly influenced by the personality characteristic of ‘affectivity’<sup>v</sup>.

Equation 1 specifies the model of mental health that we estimate:

$$y_{it} = \beta' X_{it} + \zeta \hat{y}_{it} + \gamma y_{i,t-1} + \lambda \bar{x}_i + \varphi_1 FoE_{it} + \varphi_2 FoE_{i,t-1} + \alpha_i + \varepsilon_{it} \quad (1)$$

where  $y$  is current mental health score;  $X$  is a set of independent variables that are expected to affect mental health;  $\bar{x}$  are the Mundlak means;  $\hat{y}$  is the initial condition;  $FoE$  is form of employment.

From Equation 1, using data starting in Wave 2, we estimate the effects of differences in form of employment between people (the ‘between’ effect), and the effects of a change in form of employment for each individual (the ‘within’ effect) on mental health.

Endogeneity is a problem that plagues econometric strategies to identify the causes of people's health status. Theory can provide a guide as to which way any causation flows. There is no clear theoretical expectation that mental health is a significant determinant of form of employment. There is, however, a strong prior expectation that the state of a person's mental health will both influence and be influenced by whether or not they are unemployed. We thus anticipate endogeneity to be an issue for the unemployment:mental health relationship, but much less so for the form of employment:mental health relationship. We nonetheless keep unemployment as a category, because it is of such importance for understanding the relationship between work and mental health. We note that its inclusion has only trivial effects on the size and significance of the other variables in the equation.

We seek to deal with the possibility of endogeneity in several ways. First, we have no theoretical reason to expect that mental health determines form of employment. Second, we use 8 waves of panel data. This relatively long panel increases the number of occurrences of changes in forms of employment for each individual person. We thus have more opportunity to observe if a *change* in a person's form of employment is associated with a *change* in their mental health. Third, we include an estimate of initial level of mental health and a lagged value of mental health. Any effect of form of employment on current mental health is thus conditioned on the starting level and prior level of mental health.

In the end, we cannot rule out the possibility of endogeneity, and we share this problem with other similar estimations. We have dealt with the problem as fully as is possible in a single equation panel model. We do not use instrumental variables, because there is no sensible instrument for the categorical 'form of employment' measure. We note that the ways in which people are employed have changed a great deal in Australia (and elsewhere) in recent decades, and it is quite implausible to propose that these changes have been driven by prior changes in the mental health of the workforce. These points, together with the steps we have taken to deal with endogeneity in the model, reinforce our confidence that our results reliably reflect the impact of form of employment on mental health.

### 2.3 *Independent variables*

All analyses are done separately for men and women and exclude full-time students.

Table 1 shows the distribution across forms of employment and unemployment for males and females and demonstrates that females are much more likely than males to be employed part-time or on casual terms.

**Table 1**  
**Distribution of Form of Employment by Sex**

Form of employment	Male (%)	Female (%)
Permanent FT	68.9	40.7
Permanent PT	4.8	24.3
Contract FT	7.9	5.5
Contract PT	1.0	3.5
Casual FT	4.9	2.4
Casual PT	9.0	20.5
Unemployed	3.5	3.1
Number of observations	18,994	19,375

Notes: (1) Data are from waves 2-9 of the HILDA data and excludes fulltime students and age > 64.

Employment arrangements are dynamic and Table 2 shows that there is considerable movement between different forms of employment across the pairs of waves.

**Table 2**  
**Movement between forms of employment between one wave and the next (percent)**

<i>Form of Employment</i>	<b>Permanent FT</b>	<b>Permanent PT</b>	<b>Contract FT</b>	<b>Contract PT</b>	<b>Casual FT</b>	<b>Casual PT</b>	<b>Unemp.</b>
<b>Permanent FT</b>	<b>87.3</b>	3.9	4.7	0.3	1.4	1.5	0.9
<b>Permanent PT</b>	17.0	<b>68.3</b>	1.6	3.6	0.9	7.9	0.8
<b>Contract FT</b>	45.7	3.1	<b>40.9</b>	3.7	2.6	2.5	1.5
<b>Contract PT</b>	12.2	33.0	8.7	<b>31.3</b>	2.0	11.2	1.7
<b>Casual FT</b>	33.0	4.0	9.0	1.4	<b>36.5</b>	14.58	4.3
<b>Casual PT</b>	10.3	12.2	3.2	2.9	5.0	<b>62.9</b>	3.5
<b>Unemployed</b>	19.8	9.3	5.7	2.6	8.0	23.2	<b>31.6</b>

Notes: (1) Data are from waves 2-9 of the HILDA data and excludes fulltime students and age > 64.

Table 2 shows high persistence in permanent full-time employment and casual part-time employment, and considerable movement out of contract and full-time casual employment. The flexible form of employment that showed the greatest persistence was casual part-time work: it was even more persistent than unemployment. The table supports the idea that casual work is an initial destination for people who move from unemployment into a job: 23 percent of people who were unemployed in one year were in a casual part-time job in the next year. Table 2 displays sufficient movement from one form of employment to another to provide a robust basis for estimating the effects of change in form of employment on mental health.

The choice of explanatory variables for the model of mental health was based on both previous empirical studies and our research interest (see Table 3 below).

Demographic and socio-economic characteristics controlled for include age, education level, English language capacity and marital status, as psychological and sociological studies consistently demonstrate the social patterns of low mental health in the community (Pearlin and Schooler, 1978; Ross and Mirowski, 1989). All other things equal, we expect older, married, more highly educated people to have better mental health.

We also included the disability status of respondents, which is strongly associated with self-rated health (Butterworth and Croiser, 2004). There is data on whether respondents experienced a major adverse life event in the year prior to interview, namely death of a spouse or child, death of a close relative, separation, or own serious injury or ill-health. These are expected to have a substantial negative effect on contemporaneous mental health.

Financial stress can be an independent source of lower mental health. To control for this, we include measures of household income, whether the respondent has a mortgage, and whether a respondent reports being financially comfortable (as compared with having financial difficulty or just getting by).

Recent studies using HILDA data (Green *et al.*, 2010; Dockery, 2007) show that a dissonance between hours worked and hours desired has a strong effect on measures of job satisfaction. In particular, wanting to work fewer hours is strongly correlated with lower work satisfaction. We thus include variables to capture any effect this might have on mental health.

A large body of evidence suggests that social support is a buffer for mental health problems (Berkman and Glass, 2000; Kessler *et al.*, 1985). In the HILDA Self-completion Questionnaire, respondents were asked a set of 10 questions describing how much support they could get from other people, for example, “*I seem to have a lot of friends*”, “*I often need help from other people but can’t get it*”, and “*There is someone who can always cheer me up when I’m down*”. Responses were recorded as a 7-point scale, ranging from 1 “Strongly disagree” to 7 “Strongly agree”. The set of responses is then aggregated to construct a simple index: the higher the score, the higher the level of social support.

Finally, the overall strength of the labour market is expected to have direct consequences for the mental health of workers. When jobs are abundant, workers in stressful jobs have more options to find alternative work, and the threat of job loss is less worrying if alternatives are readily available. During the period of the HILDA survey, overall unemployment fell steadily from a high of 7.3 percent in early 2001 to around 4.5 percent by wave 6 of the survey, after which it rose again. To capture the state of the relevant labour market, we include a variable that gives the unemployment rate for each sex and age group, at each wave.

**Table 3**  
**Proportion and Mean Values of Explanatory Variables**

<b>Explanatory Variables</b>		<b>Male</b>	<b>Female</b>
Age 15-24	%	17.8	19.1
Age 25-34	%	22.4	19.8
Age 35-44	%	26.4	25.5
Age 45-54	%	22.8	25.4
Age 55-64	%	10.6	10.2
Household Income	Mean, in \$1,000	96.1	94.6
Has mortgage	Yes vs. no (%)	45.5	44.4
Financially comfortable	Vs. just getting by or having difficulty	28.7	28.1
Want more hours of work	Yes vs. no (%)	11.9	14.3

<b>Explanatory Variables</b>		<b>Male</b>	<b>Female</b>
Want fewer hours of work	Yes vs. no (%)	27.8	26.1
Major life event in last year	Death of close relative (%)	9.7	10.8
	Death of spouse or child (%)	0.4	0.4
	Separated from spouse (%)	4.1	4.2
	Serious personal injury/illness (%)	6.6	5.8
Educational achievement	Degree or higher	25.3	30.8
	Diploma/adv diploma	8.7	9.9
	Cert III & IV	26.6	14.5
	Year 12	16.4	18.3
	Year 11 or less	23.0	26.7
Marital status	Married/de facto	66.8	62.3
	Separated/divorced/widowed	6.3	12.9
	Never married	26.9	24.8
Disability status	Without disabilities	85.1	85.1
	Disabilities not affecting work	7.8	6.5
	Conditions limiting work	7.1	8.4
Social support	Scale 1-7, more support	4.5	4.7
English is not first language	%	7.1	8.3
Unemployment rate	%	4.9	4.9
Number of observations		18,994	19,375

Notes: (1) Data are from waves 2-9 of the HILDA data and excludes fulltime students and age > 64.

### 3. Results

Table 4 shows the mean scores for mental health for each form of employment. According to this bivariate view, both full-time contract and part-time casual employees reported statistically significant lower mental health than permanent full-time employees. This is also true for females on part-time contracts and males in full-time casual jobs. Unemployed people had much lower average mental health than any other category. Our model examines whether these relationships persist when we control for a range of independent factors that affect mental health.

**Table 4**  
**Mean Score for Mental Health, 2002-09 by Form of Employment**

<b>Form of employment</b>	<b>Male</b>	<b>Female</b>
Permanent full-time	77.0	75.5
Permanent part-time	76.0*	75.3
Contract full-time	76.1 ***	73.9***
Contract part-time	77.6	74.2***
Casual full-time	74.2***	74.5
Casual part-time	75.2***	73.0***
Unemployed	68.9***	66.1***
Number of observations	18,994	19,375

Notes: (1) Data are from waves 2-9 of the HILDA data and excludes fulltime students and age > 65. (2). Mental health scores are from SF-36 Mental Health profile with range 0-100. (3). Asterisks represent *p*-levels (\*represents  $p < 0.10$ ; \*\* represents  $p < 0.05$ ; \*\*\* represents  $p < 0.001$ ).

Table 5 below reports the results of the model estimation. We moved from the general model (comprising the variables in Table 3) to the specific one that is reported, by excluding variables that had no impact on either the overall explanatory power of the model or on the coefficients for other variables. Given our research question, we retain current and lagged form of employment in the model irrespective of their statistical significance.

The overall explanatory power of the model is quite satisfactory, and most of the differences in mental health are explained by differences between the respondents, rather than by changes in mental health for given individuals from one period to the next.

The model strongly suggests that in most cases there is *no* direct relationship between mental health and either current or previous period form of employment. For the current period employment, the exception is a *higher* level of mental health for women currently employed on part-time fixed contracts. Men who were employed on part-time casual terms in the previous period have a *higher* level of mental health in the current period. The only support for the proposition that flexible employment harms mental health is for men employed on fixed-term full-time contracts.

Unemployment is a different story. The model results are consistent with unemployment causing lower mental health for men although not for women. For men, being unemployed in the previous period is significantly associated with having a *higher* mental health in the current period. There are two likely explanations. The first is that some have moved from unemployment to employment (as we saw in Table 2) and their mental health has improved as a result. The second is that some people are adapting to being unemployed as their duration in that state becomes longer—consistent with the findings of Dockery (2007).

The model identifies a number of significant determinants of the mental health of employees, but they are not related to their form of employment.

There is considerable persistence in mental health. Lower levels of current mental health are strongly correlated with major adverse life events, such as serious illness/injury, separation and death in the family, and with own disability, especially disability that limits the capacity for work. Social capital proves to be an important correlate with good mental health: more abundant and deeper social connection is significantly and strongly linked with good mental health. The strong prediction of the sociology literature is that the link is causal, with more social capital boosting people's resilience and causing better mental health. Our model is consistent with this interpretation.

There is a strong and significant correlation between being financially comfortable and having higher mental health. Higher family income is also significant and positive for men, but not for women, and having a mortgage does not seem to affect the mental health of either sex. More than one quarter of respondents said they want to work fewer hours, and the model finds that these people have significantly lower mental health. Men have higher mental health as they get older, but there is no such association for women.

There are some surprises in the variables that do not show a statistically significant relation with mental health. These include level of education and the relevant level of unemployment. We find no effect of marital status for men, and for women the highest mental health is found among those who are divorced or separated.

**Table 5**  
**Determinants of Mental Health (Dependent variable Mental Health score 0-100)**

<b>Explanatory Variables</b>		<b>Male Coef.</b>	<b>p-value</b>	<b>Female Coef.</b>	<b>p-value</b>
Starting mental health	Estimated at wave 1 (0-100)	0.001	0.726	-0.004	0.156
Lagged mental health	Previous wave (0-100)	0.324***	0.000	0.303***	0.000
Current form of employment	<i>Permanent full-time—Base Case</i>				
	Permanent part-time	-0.431	0.418	0.080	0.819
	Fixed-term full-time	-0.626*	0.100	0.285	0.542
	Fixed-term part-time	0.275	0.778	0.394	0.511
	Casual full-time	-0.449	0.355	1.374**	0.042
	Casual part-time	-0.590	0.218	-0.049	0.905
	Unemployed	-2.647***	0.000	-0.852	0.205
Previous period form of employment	<i>Permanent full-time—Base Case</i>				
	Permanent part-time	-0.189	0.465	-0.011	0.950
	Fixed-term full-time	0.026	0.840	0.177	0.259
	Fixed-term part-time	0.084	0.729	0.188	0.210
	Casual full-time	0.130	0.169	0.007	0.961
	Casual part-time	0.153**	0.033	-0.080	0.206
	Unemployed	0.288***	0.000	0.063	0.459
Age group	<i>15-24 years—Base Case</i>				
	25-34 years	0.858*	0.100	0.224	0.690
	35-44 years	1.445**	0.034	0.366	0.632
	45-54 years	2.028**	0.012	0.825	0.358
	55-64 years	2.676***	0.005	0.503	0.637
Want more hours	Of paid work	-0.138	0.675	-0.199	0.524
Want fewer hours	Of paid work	-1.281***	0.000	-1.025***	0.000
Major life event (last 12mths)	Death of close relative	-0.446	0.131	-1.365***	0.000
	Death of spouse/child	-4.191***	0.006	-5.179***	0.000
	Separation	-4.670***	0.000	-3.590***	0.000
	Own serious illness/injury	-2.520***	0.000	-2.886***	0.000
Educational achievement	<i>Degree or better—Base Case</i>				
	Diploma/adv diploma	-0.509	0.692	0.181	0.888

<b>Explanatory Variables</b>		<b>Male Coef.</b>	<b>p-value</b>	<b>Female Coef.</b>	<b>p-value</b>
	Cert III & IV	0.801	0.481	-0.891	0.372
	Year 12	1.357	0.155	0.136	0.867
	Year 11 or less	1.029	0.358	-0.939	0.334
Marital status	<i>Married/de facto—Base Case</i>				
	Separated/divorced/widowed	0.807	0.240	1.218*	0.062
	Never married	0.628	0.208	-0.057	0.914
Household Income	Income \$'000	0.006***	0.007	-0.001	0.613
Financially comfortable	Compared with getting by/ having difficulty	2.253***	0.000	2.366***	0.000
Mortgage	Has a mortgage vs. no mortgage	0.093	0.725	-0.043	0.879
English is first language	English is the primary language	1.986	0.688	-4.787	0.254
Unemployment rate	ABS statistical regions	0.167*	0.088	-0.024	0.814
Disability status	<i>Without disabilities—Base case</i>				
	Disabilities not affecting work	-1.371***	0.000	-1.490***	0.000
	Disabilities limiting work	-2.952***	0.000	-2.621***	0.000
Social support	Scale 1-7 (7 is more support)	4.418***	0.000	4.401***	0.000
Constant		47.60***	0.000	51.40***	0.000
R2 Between		0.613		0.573	
R2 Within		0.022		0.014	
R2 Overall		0.431		0.404	
N (Observations)		18,994		19,375	

Notes: (1) Data are from waves 2-9 of the HILDA data and excludes fulltime students and age > 65. (2). Asterisks represent  $p$ -levels (\*represents  $p < 0.10$ ; \*\* represents  $p < 0.05$ ; \*\*\* represents  $p < 0.001$ ).

## 4. Further explorations

### 4.1 Different education groups

Our findings go against the weight of international and even Australian evidence of the harmful effects of being employed on casual or contract terms. Some of this evidence is qualitative, where cases are given of the difficulty people face in having uncertain incomes, being an outsider at work, having few opportunities for skill development and advancement (e.g. Pocock *et al.*, 2004).<sup>vi</sup> We do not want to dismiss this evidence. It may be that while for the workforce as a whole there is no systematic impact of form of employment on mental health, such an impact does exist for subsets of workers. For example, we would expect that workers with few employment options are more at risk of having to accept employment on terms that are harmful to their mental health than is the case for those with many options.

We examine this possibility by estimating the main model separately for subsets of the workforce, distinguished by highest level of education<sup>vii</sup>. Our expectation is that those with relatively low levels of education will be more likely to show a correlation between employment on casual or contract terms and lower mental health than do their more educated counterparts.

There are systematic differences in education levels between people employed on different terms. Our sample shows that men and women employed on contracts are the most likely to have a degree, followed by those in full-time permanent jobs. About one third of people (not fulltime students) who are employed on casual terms have not completed high school, compared with one fifth of those in full-time permanent jobs. People with low levels of education are concentrated in casual work, and therefore more at risk of any harm that such employment might cause to mental health.

Our chief interest is the results for forms of employment: these are displayed in Tables 6(a) and 6(b).

**Table 6(a): Impact of current form of employment on mental health for different education groups: women**

<i>Permanent full-time—Base Case</i>	Degree	Diploma	Cert 3/4	Year 12	< Year 12
Permanent part-time	0.420	-0.090	-1.104	1.019	0.009
Fixed-term full-time	0.227	1.152	-0.791	1.349	0.138
Fixed-term part-time	0.812	-0.162	0.405	2.413	-0.826
Casual full-time	-0.154	<b>3.725*</b>	-0.861	1.489	<b>2.498**</b>
Casual part-time	0.364	1.241	<b>-1.957*</b>	-0.116	0.264
Unemployed	-0.289	0.469	-2.641	-1.231	-0.617

Notes: (1). Selected coefficients from the same model as estimated in Table 5. (2). \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

**Table 6(b): Impact of current form of employment on mental health for different education groups: men**

<i>Permanent full-time—Base Case</i>	Degree	Diploma	Cert 3/4	Year 12	< Year 12
Permanent part-time	0.030	0.007	0.0785	-0.651	-1.599
Fixed-term full-time	0.045	<b>-2.479*</b>	-0.957	-0.466	-0.730
Fixed-term part-time	2.214	<b>-0.928**</b>	-0.159	-0.259	0.719
Casual full-time	1.907	0.170	-0.385	<b>-1.884*</b>	-0.705
Casual part-time	0.102	-1.299	-0.067	-1.293	-0.752
Unemployed	<b>-2.598*</b>	-2.623	-2.003	<b>-0.812***</b>	<b>-0.583**</b>

Notes: (1). Selected coefficients from the same model as estimated in Table 5. (2). \* significant at 10%; \*\* significant at 5%; \*\*\* significant at 1%

The main conclusion is that there are few significant relationships. The hypothesis that those who have lower education (and therefore fewer employment options) are more likely to be harmed by flexible forms of employment is not supported. The current form of employment has no significant relationship with mental health for either men or women who did not complete high school—our most ‘vulnerable’ group. For women, two of the three significant relationships (casual full-time for women with diplomas or who did not complete high school) are positive. In none of the education groups for women is even unemployment significantly harmful. The only category for which there is some evidence of harm for women is certificate 3/4 who are employed as part-time casuals.

There are some stronger associations for men. In particular, three of the five education groups have significantly lower mental health if they are unemployed. But for those with jobs, only fixed term employment for those with diplomas, and casual full-time employment for those with Year 12, have significantly lower mental health than those in permanent full-time work.

### *3.2 Change on change*

As a final test of a possible relationship between form of employment and mental health, we estimate the impact of a change in form of employment on the change in mental health. In order to limit the permutations of change, we restricted them to changes from permanent to casual employment and from casual to permanent employment. We estimate the same model as previously, but the dependent variable is change in mental health, rather than level of mental health. Neither the change from permanent to casual, nor the change from casual to permanent has a significant impact on the change in mental health, for either men or women. The independent variables that do have an impact on change in mental health are the same as in the main estimation—life events, disability, financial comfort, levels of social support and wanting fewer hours of work.

## **Conclusion**

We employed 9 waves of nationally representative panel data, for Australia, to examine the impacts of employment on fixed-term contract or casual terms, in contrast to permanent full-time terms, on the mental health of employees. Given the distinctive characteristics of the Australian labour market, in particular the unusual levels of protection for casual employees, we hypothesised that the harmful effects found in other countries might be avoided in Australia. To the extent that we observed harmful effects, we expected them to be more substantial for men than for women.

Our analysis supports the primary hypothesis: we find almost no evidence that casual or fixed term contract employment was harmful to the mental health of women or men. Indeed, the analysis suggests that women have higher mental health if employed full-time on a casual contract, including those who did not complete high school. This latter finding is reassuring, since employment on casual terms is particularly concentrated among those who did not complete high school and they show evidence of relatively high persistence in this form of employment. Surprisingly, for women even being unemployed does not significantly reduce their mental health. As expected, the same cannot be said for men, for whom unemployment seems to be quite harmful. With few exceptions, however, the flexible forms of employment are not harmful even for men.

Our findings do not demonstrate that no one suffers from being employed on casual or contract terms. Rather, we interpret the results as showing that if some are harmed, others benefit, so that on average there is no systematic relationship. The particular conditions around employment on casual and contract terms in Australia—in particular the pay premium for casual employment and the shared access to other employment benefits such as unfair dismissal protections, superannuation contributions, health and unemployment benefits—together with the flexibility they offer (casual) and access to otherwise good jobs

(contract) means that for some people these are the preferred forms of employment, or at least are not on balance disliked.

We have dealt with the vexed issue of endogeneity by using 8 waves of panel data, an estimated initial level of mental health, and a lagged value of mental health. We cannot conclusively rule out the possibility that endogeneity is not only present but is confounding the results in a way that undermines our main finding, but we think it quite unlikely.

Model results also support previous research that shows mental health depends importantly on individual attributes and circumstances—and in particular, adverse life events, disability and social support. It also shows that some work conditions do matter, including a negative impact from working longer hours than preferred and from financial stress.

It appears that the protections offered to Australian flexible workers, combined with their own social support and resilience, are sufficient to ameliorate any harmful effects of employment on casual and fixed contract terms. Australia has been called “the workers’ welfare state” (Castles, 1985). Our results suggest it still is.

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<sup>i</sup> Following Green et al, 2010, we use the term ‘flexible’ to embrace forms of employment that are not permanent or ongoing. The European literature uses the term ‘precarious’ and the US term is “contingent”.

<sup>ii</sup> Both use data from the Household Income and Labour Dynamics in Australia (HILDA) surveys, but the Wooden and Warren paper was published before many waves of data were available.

<sup>iii</sup> Provided that they work more than a small number of hours per week.

<sup>iv</sup> For details, see [www.fairwork.gov.au/employment/casual-employees](http://www.fairwork.gov.au/employment/casual-employees).

<sup>v</sup> Not shown here, but based on our model that predicts starting mental health, to derive the estimated values that we include in the main model. There is a strong negative relation between affectivity score and mental health.

<sup>vi</sup> For recent contrary evidence, see Keuskamp, D. et al. They find that casual workers were significantly less likely to report being bullied at work than workers on permanent or fixed-term contracts.

<sup>vii</sup> The education groups are: degree or higher, diploma, vocational certificate 3 or 4, completed high school, did not complete high school.