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Lone and Couple Mothers in the Australian Labour Market: Differences in Employment Transitions

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Abstract

While more mothers have been participating in the paid workforce over recent years, the employment rate of lone mothers remains lower than that of couple mothers. This paper provides new insights into these different rates of employment, by examining whether the lower employment rate of lone mothers is due to their being less likely to enter employment, more likely to exit employment once employed, or a combination of both. Monthly calendar data from the Household, Income and Labour Dynamics in Australia (HILDA) survey are used to identify and compare the rate at which lone and couple mothers move into and out of employment over a seven-year period. These data show that of those employed in a one-month period, lone mothers are more likely to transition out of employment than couple mothers; however, not-employed lone and couple mothers are no different in their likelihood of transition into employment. These analyses also show that educational attainment, work history and age of youngest child may contribute to the different employment rates of lone and couple mothers.

JEL Classification: J000; J080; J600

1. Introduction

While the proportion of lone mothers participating in paid work in Australia has increased over recent years, this proportion remains below that of couple mothers (Australian Bureau of Statistics, 2010; Gray *et al*., 2006; McHugh and Millar, 1996). The same is true in other developed countries, such as the United Kingdom (UK), the United States (US) and New Zealand (Millar and Evans, 2003). Concerns about the wellbeing of adults and children living in jobless households contribute to continuing interest in explaining the relatively low employment rate of lone mothers.

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Many explanations have been given for lone mothers' lower rate of employment, including differences in lone and couple mothers' characteristics, wages and abilities to combine work with caring for children (Eardley, 2001; Gray *et al*., 2006; Hynes and Clarkberg, 2005; McHugh and Millar, 1996; Walters, 2002). The role of government support is also important, especially as lone mothers are more likely to be in receipt of income support payments and are thus more likely to face financial disincentives to work due to the interaction of the income support system with wages (Adema and Whiteford, 2007; Millar and Evans, 2003).

This paper provides new insights into lone and couple mothers' employment by examining how transitions into and out of employment for these two groups vary. A focus on transitions enables us to examine whether the lower employment rate of lone mothers is due to their being less likely to enter employment or more likely to exit employment once employed, or a combination of the two.

Month-to-month employment transitions of lone and couple mothers are examined using the employment calendar data from Waves 2 to 8 of the Household Income and Labour Dynamics in Australia (HILDA) survey, covering the period from 2002 to 2008. The HILDA calendar data provide a unique opportunity to analyse mothers' employment transitions over an extended period of time, with a sample large enough to be able to differentiate mothers according to their relationship status.

Throughout the paper, comparisons between lone and couple mothers are made. However, the main focus is on lone mothers because for them lack of employment means family joblessness. Joblessness in families is linked to long-term welfare dependence, poor health for children and parents, lower levels of life satisfaction, housing and financial difficulties and poorer future educational and employment outcomes for children (Australian Institute of Health and Welfare, 2008; Dawkins, Gregg and Scutella, 2002; Heady and Verick, 2006).

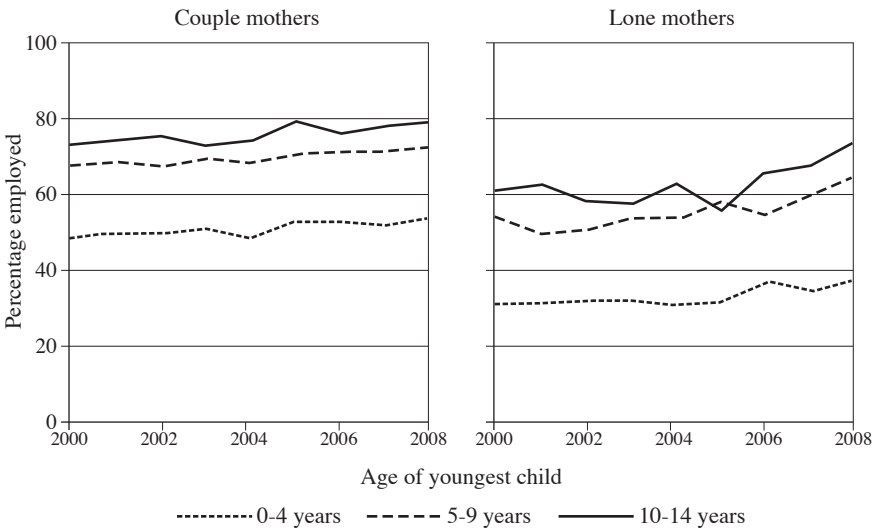
2. Background

Throughout the period under examination in this report the employment rates of lone mothers in Australia have been lower than those of partnered mothers (figure 1). In more recent years the gap between these groups of mothers has narrowed, as lone mothers' employment rates have increased more than partnered mothers, especially for those with older children.

In this paper we consider whether these different employment rates are to some extent related to lone and couple mothers having different rates of entering or leaving employment. As well as considering overall differences between lone and couple mothers, we also take account of a range of their characteristics, including those capturing human capital and health.

A study of employment transitions in the UK found that in 2002–03 lone parents were moving into employment at similar rates to couple parents, but were almost twice as likely to leave their job (Evans *et al*., 2004). Prior research on this topic is not available for Australia.

Figure 1 - Employment Rates of Mothers of Children Aged under 15 Years, by Age of Youngest Child and Relationship Status, June 2000 to June 2008 (ABS)



Source: ABS Labour Force Status by Sex, Age, Relationship (Supertable FM2)

Previous Australian research on employed men and women has found employment transitions are likely to vary with characteristics such as age and prior employment experience (e.g., Buddelmeyer, Wooden and Ghantous, 2006; Haynes *et al*., 2008; Knights, Harris and Loundes, 2000; Stromback, Dockery and Ying, 1998). In regard to employment experience, studies have found that those who have spent more time in employment are more likely to remain employed if already employed, or to enter employment if not employed. Similar patterns are likely in relation to other human capital characteristics such as education, as mothers with higher levels of human capital are more competitive in the labour market, and therefore better able to find employment in jobs with better pay and/or working conditions and are thus more likely to enter or retain employment. Lone mothers are at a disadvantage in this respect, given their relatively low levels of human capital (Harding *et al*., 2005). Lone mothers' employment participation is also likely to be affected by their higher rates of physical and mental health problems (Butterworth, 2003).

Transitions into and out of employment are of particular interest with regard to income support recipients, with research showing that many lone mothers who leave income support, often for employment-related reasons, return shortly after (Chalmers, 1999; Gregory, 2002). These studies focus solely on lone mothers and therefore do not allow a comparison with couple mothers (see, also Shaver *et al*., 1994). Cycling back into income support by parents who had recently left for employment is also apparent in the UK and the US (Evans *et al*., 2003; Acs, Loprest and Roberts, 2001; Cancian *et al*., 1999). These findings reflect that leaving income support for employment often involves take-up of casual or low paid jobs, which contributes to the 'churning'

between paid work and income support, or a 'low pay / no pay cycle' (Cancian *et al*., 1999; Evans *et al*., 2003; Evans *et al*., 2004; Fok, Jeon and Wilkins 2009; Gregory, 2002). This is particularly applicable when considering lone mothers' employment, given their higher rates of take-up of these types of jobs, relative to partnered mothers (Baxter *et al*., 2007), and the greater instability of casual and low paid jobs (Buddelmeyer, Wooden and Ghantous, 2006; Perkins and Scutella, 2008).

In Australia, there has been increased policy focus on the importance of paid work for income support recipient parents, the majority of whom are lone mothers (McHugh and Millar, 1996). This has been most recently highlighted by the Welfare to Work reforms, introduced in July 2006, which brought in compulsory employment-related requirements for existing Parenting Payment recipients with children of school-age or older and made Newstart Allowance (paid at a lower rate and withdrawn more sharply with increases in earnings) rather than Parenting Payment available to new income support recipients with children of school age or older (Centrelink, 2005). These changes accentuated the expectation that these recipients should be seeking work.

The income support system as a context for lone mothers' employment transitions is significant, considering that many lone mothers, even those in employment, draw at least some of their income from government payments (Barrett, 2002). There are complex relationships between earned income and eligibility for government support, and for some mothers, there are low additional returns from paid work relative to income support, once taxation, loss of benefits and costs of paid work (including child care costs) are taken into account (Harding *et al*., 2005; Toohey and Beer, 2003). This may be particularly important for lone mothers' ability to sustain employment.

Further, all mothers are likely to be influenced by a range of factors in making decisions about labour force participation, including their own preferences for caring full-time for children, weighed up against the financial implications of not working, and the potential to find employment that enables family obligations to be met. It is likely that lone and couple mothers are differentially affected by work-family strain and by childcare access (Baxter and Alexander, 2008; McHugh and Millar, 1996; Australian Bureau of Statistics, 2009), and these factors may contribute to differences in lone and couple mothers' ability to enter or remain in employment.

The analyses in this paper do not attempt to isolate which of the above factors is most influential in relation to lone and couple mothers' employment transitions. But by taking into account a range of characteristics (work histories, education, numbers and ages of children, health status and age) in addition to lone parenthood, we can provide a clearer picture of whether there may be certain factors that affect lone mothers' employment transitions more than those of couple mothers.

3. Data and Methods

This paper uses multiple waves of the HILDA calendar data to analyse lone and couple mothers' employment transitions. The sample is restricted to mothers with dependent children aged less than 15 years old.

The Household, Income and Labour Dynamics in Australia Survey

HILDA is a nationally representative, annual panel survey, which commenced with Wave 1 in 2001 (Watson and Wooden, 2002a). The sampling unit for the survey is households, with information being gathered on each member of the sampled

households and interviews conducted with household members aged over 15 years. For Wave 1, 11,693 households were sampled from 488 areas (Census Collection Districts) across Australia. Members of 7,682 households completed interviews, resulting in 13,969 completed individual interviews and a response rate of 66 per cent. While sample size has declined over the waves due to attrition, at each wave new members to households are added in. At each wave the sample included approximately 2,000 mothers of children aged less than 15 years. The analyses of employment transitions are based on unweighted data.

This paper uses data from Waves 2 to 8 of HILDA, primarily using the employment calendar component of the survey. Wave 1 calendar data were not used, primarily because significant changes to this component of the survey were made after Wave 1 in order to correct some design issues that affected data collection (Watson and Wooden, 2002b).

Calendar Data

The calendar component of HILDA is obtained at each wave of the survey, with details of work and study activities being collected for the period starting from 1 July of the previous year up to the survey date. Interviews commence each year in late August, and by early December most are completed, resulting in a period of between 14 and 18 months for most respondents. In relation to work, respondents are asked to indicate how many jobs they have had over this period and to identify the dates within which they worked in each of those jobs. From this information, a series of job indicator variables are created that identify whether, at the start, middle and end of each month covered by the calendar, each respondent worked in each of their jobs. Because calendar data for each wave covered a 14-18 month period, an 'overlapping seam', or a period of time in which data were available from two waves, was included. The job spell information reported closest to the period being recalled was taken as the more accurate for these analyses (Watson, 2009).[1]

These calendar data were aggregated for analysis in this paper. The job-level information was collapsed to obtain an indicator of whether or not respondents were employed in any job and the three within-month time periods (start, middle and end) were aggregated to one month, such that respondents were classified as being employed in a month if employed in any of those three time periods. This was to simplify the analyses and to allow a better match with respondents' characteristics, which were not collected at the within-month level. Relationship status, our key characteristic, could be matched to the monthly data (discussed further below).[2]

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[1] The presence of the overlapping seam allows us to examine the prevalence of recall errors in the data by comparing respondents' employment information given at each interview with that given for the same points in time, approximately twelve months later, in the following interview's calendar data. The majority of mothers had matching data in both reports, though five per cent gave one report of being employed and the other of not being employed for the same time period. There was no difference between lone and couple mothers in the proportion giving mismatching employment information.

[2] By collapsing the data to monthly periods, some employment transitions were missed, as respondents who were classified as employed may not have been employed for the whole month. Separate analyses of these data revealed that the number of cases affected was relatively small.

Note that instructions to respondents were to include periods of paid leave as part of a job spell, not as a break from employment, and therefore 'employed' can include time spent on paid leave. Periods captured as 'not employed' include time spent unemployed or not in the labour force.

Each respondent's calendar data was matched across all waves, that is, when available, from July 2001 to the interview month in 2008. Respondents who completed one or more waves were included in this analysis, and if employment data were missing for a wave, due to non-response or other reasons, the employment status was set to missing just for those periods affected.

Data were then converted to a person-month format, so that for every person, for every calendar month there was an indicator of whether or not they were employed at that time. The resultant dataset is therefore, by design, the number of respondents times the number of calendar months for which employment data were reported. Across all years, there was a total of almost 114,000 person-months for couple mothers and over 32,000 person-months for lone mothers.

Employment data in consecutive months were used to derive measures of employment transitions. For each month, two key measures were derived: for those employed in one month, the likelihood of leaving employment the next month; and, for those not employed in one month, the likelihood of entering employment the next month.

Data Items

Variations in employment transitions were examined first by relationship status, with couple mothers and lone mothers compared. Couples included mothers who were married or cohabiting. Relationship status was available at each wave, and changes that occurred between waves were identified using the detailed questions on the timing of any relationship commencement or separation. This enabled this variable to be derived at the monthly level. Note that most mothers in the sample did not experience a change in relationship status across waves, although lone mothers were more likely than couple mothers to have experienced such a change. For example, of the couple mothers at the Wave 8 interview, only 8 per cent had been single at some point over the previous seven waves. Of those who were lone mothers at Wave 8, 54 per cent had been in a cohabiting relationship or marriage at some time between Waves 1 and 8.

The analyses then took into account other variables that were likely to be important in explaining different employment outcomes for lone and couple mothers, based on prior research on lone and couple mothers' employment (e.g., Gray *et al*., 2006). Specifically, we include measures of mothers' recent work experience, educational attainment, ages and numbers of children, mothers' self-reported health status, country of birth and age.

Work history could be captured in a number of ways. We chose to focus on recent work history, in part because of difficulties in capturing a longer employment history, but also because a longer employment history will be dependent upon age and past childbearing patterns, which we also take into account in the analyses. Using the HILDA calendar data for the year prior to each time period, the percentage of the year spent in employment was classified as 'employed for 80 per cent or more of the previous year', 'employed for 20 per cent to less than 80 per cent of the previous year' and 'employed for less than 20 per cent of the previous year'.

Table 1 - Characteristics of Mothers with Children Aged under 15 years, by Relationship and Employment Status, Waves 2-8

	Couple Mothers			*Lone Mothers*		
	Employed	*Not employed*	*Total*	*Employed*	*Not employed*	*Total*
		%			%	
Recent work history						
Employed 0-19% previous year	2.4	79.2	26.7	4.0	83.3	37.4
Employed 20-79% previous year	9.4	14.8	11.1	13.2	12.2	12.8
Employed 80-100% previous year	88.1	5.8	62.2	82.2	4.0	49.3
Missing data	0.0	0.2	0.1	0.6	0.5	0.6
Educational attainment						
Bachelors degree or higher	33.8	17.2	28.5	24.0	6.1	16.5
Complete secondary/certificate/diploma	42.5	43.1	42.7	50.8	43.9	47.9
Incomplete secondary	23.8	39.7	28.8	25.2	49.9	35.6
Age of youngest child						
0-2 years	22.1	40.4	27.9	8.0	29.7	17.1
3-5 years	19.2	23.7	20.6	17.5	23.5	20.0
6-9 years	25.0	17.7	22.7	28.4	20.0	24.8
10-15 years	33.7	18.2	28.8	46.2	26.8	38.0
Number of children						
1 child	20.7	20.5	20.7	34.0	29.8	32.2
2 children	48.0	43.6	46.5	40.5	37.7	39.3
3+ children	31.3	35.9	32.7	25.6	32.5	28.5
Health status						
Fair or poor	7.2	13.1	9.1	12.2	20.7	15.8
Good or better	84.4	78.0	82.4	77.3	67.5	73.2
Missing data	8.4	8.9	8.6	10.5	11.8	11.0
Country of birth						
Australia	79.6	74.9	78.1	81.4	81.8	81.6
Overseas English-speaking	8.5	6.6	7.9	9.8	5.9	8.2
Overseas non-English speaking	11.9	18.5	14.0	8.8	12.3	10.3
Age (Mean [SD])	**38.7 (6.3)**	**35.8 (7.4)**	**37.8 (6.8)**	**39.2 (7.5)**	**35.1 (9.1)**	**37.5 (8.4)**

Note: Percentages are calculated based on the distribution of these variables over the pooled person-month data across Waves 2-8. Health status was collected in the self-completion questionnaires, which had much lower response rates than the interviews. To minimise the impact of missing health status data on results, a 'missing' category was included in the health status variable used in this analysis.

Categories of other variables are shown in table 1. Education and health status were collected at each wave and it was assumed that this information did not vary within survey periods. Age of mother (in years at last birthday) was included and was updated at the time of each survey. An age-squared term was also included in the multivariate analyses. Ages and numbers of children were updated at each survey, and also information on new births between waves was used to more accurately capture ages of youngest child and number of children at the monthly level.

The differences in characteristics of lone and couple mothers are apparent in table 1, with lone mothers having spent less of the prior year in employment and

having lower levels of education and poorer self-reported health. Lone mothers are more likely than couple mothers to have older children and less likely to have children under three years old and are more likely to only have one child. Differences between lone and couple mothers' characteristics are still apparent within each category of employment status.

Methods

The two types of employment transitions – leaving employment for employed mothers, and entering employment for not-employed mothers – were analysed separately using multivariate analyses. These analyses were used to ascertain whether relationships between lone parenthood and employment transitions were apparent once the characteristics of mothers were taken into account. Further, they allowed for examination of how much these characteristics explained differences in employment transitions, which is important given that lone and couple mothers have quite different characteristics as measured using these variables.

To do these analyses, the data from all months were pooled, and the analyses estimated the likelihood of leaving (entering) employment at time $t + 1$, for those who were employed (not employed) at time t. The models included explanatory variables, measured at time t, as well as variables to control for the year and quarter to which the data refer.

Models were also estimated separately for lone and couple mothers, to determine whether any of the factors had a stronger (or weaker) effect on lone rather than couple mothers. To test whether there were significant differences in the coefficients for lone and couple mothers, models were estimated in which relationship status was interacted with each of the variables. These analyses revealed no statistically significant differences (at the $p < .05$ level) between the two models' coefficients, for either leaving or entering employment, and have therefore not been presented. That is, we focus on the results of one model for leaving employment and one for entering employment, each with a relationship status indicator, along with a set of background variables.

As the outcome variables are binary (either leaving or entering employment), logistic regression is an appropriate method of analysis. However, as there are multiple records (that is, months) per person, more sophisticated techniques are required to allow for the within-person correlations. This is important in this type of analysis, as this person-level variation could be quite high, especially considering that the models include only a fairly small set of person-level explanatory variables. Therefore, random effects (RE) models were used as these models allow us to determine how employment varies with lone parenthood, as well as the range of background characteristics. The coefficients in these models estimate the difference in the log odds of being employed associated with the presence of a particular characteristic, such as being a lone parent as opposed to a couple parent. Because the estimation is based on multiple records per person, the coefficients represent both differences across respondents (at any one month) and differences within respondents (across months). Some characteristics do not change at all across time (e.g., country of birth and, usually, education), while some change considerably (e.g., age and ages of children) or have the potential to change (e.g., relationship status). For those variables that may change across months,

the estimated coefficient will reflect these changes among individuals as well as between individuals. This is the case for the relationship status variable, which for some mothers will remain constant across the waves, while for others will capture changes due to separation or partnering. These coefficients cannot be used to draw conclusions about causal relationships, but instead are used to describe associations between variables.

Results have been presented as marginal effects, as these estimates are easier to interpret than the model coefficients. The marginal effect is the change in the probability of leaving or entering employment associated with a particular characteristic (e.g., lone parenthood), holding constant the value of all other explanatory variables. For binary variables, the marginal effect is for a change in the value of the variable from zero to one; that is, from not having the characteristic to having it, as is the case with lone parenthood. For categorical variables, such as highest level of education, the marginal effect is relative to that variable's reference category, which is indicated in the presentation of results. Marginal effects were calculated assuming a random effect of zero (which is required when calculating marginal effects after RE estimation), and with other variables set at their sample mean.

4. Results

Overview of HILDA Employment and Transitions Data

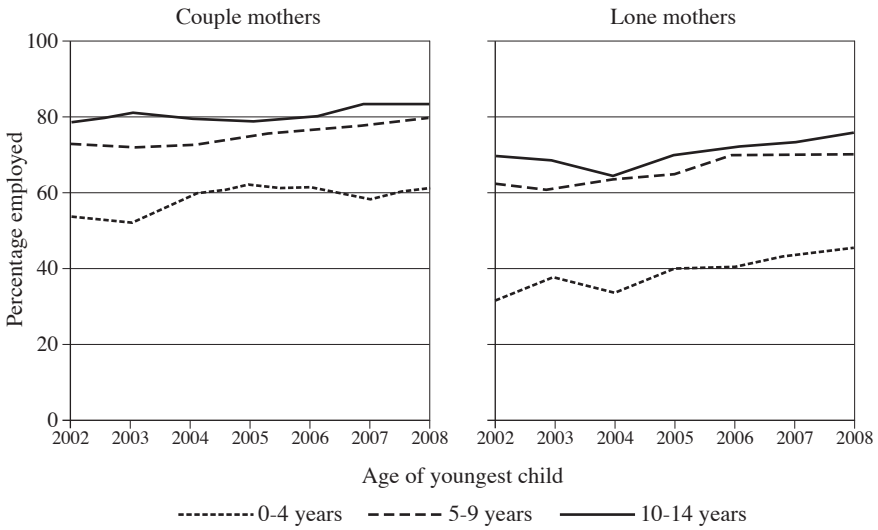
Before examining employment transitions, using the HILDA calendar data, figure 2 shows employment rates by relationship status and age of youngest child over time. While the employment rates in figure 2 are somewhat higher than those presented in figure 1, the overall patterns are the same.[3] Lone mothers are less likely to be employed than couple mothers, regardless of the age of their youngest child, although the employment rate of lone mothers has increased gradually since 2004.

Looking at the data as monthly employment transitions instead, table 2 shows that the proportion moving between employment and non-employment is small relative to the proportions remaining employed or not employed. Ninety-eight per cent of mothers did not change employment state from one month to the next, with 66 per cent staying employed and 32 per cent staying out of employment. Lone mothers were more likely than couple mothers to stay not employed (41 per cent compared to 30 per cent).

Of those employed in any one monthly period, only 1.5 per cent were not employed the next month, with a higher exit rate for lone mothers (2.0 per cent) compared to couple mothers (1.3 per cent). Of those who were not employed in one monthly period, a slightly higher percentage moved into employment (3.6 per cent), with no difference between lone and couple mothers.

[3] HILDA calendar data from June each year were used to match to the data from the ABS source. Similar patterns are observed if yearly averages of the HILDA data are used instead. The HILDA and ABS data are based on very different data sources, and it is therefore not surprising that each source produces a different estimate of the employment rate. In keeping with the rest of this report, the HILDA data are unweighted. Applying person-weights to the data results in lower estimates for the employment rates.

Figure 2 - Employment rates of mothers of children aged under 15 years, by relationship status and age of youngest child, June 2002 to June 2008 (HILDA)



Source: HILDA, Waves 2-7, pooled monthly calendar data

Table 2 - Month-to-month Employment Transitions of Mothers with Children Aged under 15 Years, by Relationship Status, Pooled Data, 2002-08

	Couple Mothers	*Lone Mothers*	*Total*
Employment transition month t *to month* t + *1*		%	
Stayed employed	67.5	56.8	65.8
Left employment	0.9	1.2	1.0
Entered employment	1.1	1.5	1.2
Stayed not employed	30.4	40.6	32.1
Total	100.0	100.0	100.0
Of employed, % left employment	1.3	2.0	1.5
Of not employed, % entered employment	3.6	3.6	3.6
Sample count (number of person-months)	**113,297**	**32,087**	**145,384**

Note: Percentages do not total 100% due to rounding.

Leaving Employment: Employment Transitions of Employed Mothers

To examine these transitions in more detail, we turn now to the multivariate analyses. These analyses incorporate relationship status in addition to a range of characteristics. First, the results for transitions out of employment are discussed.

Table 3 - Multivariate Analyses of the Likelihood of Leaving Employment for Mothers Employed in the Previous Month, Pooled Monthly Data

	Coefficient	*Standard Error*	*Marginal Effect*	*95% Confidence Interval*
Lone mother (ref. = couple mother)	0.38 ***	0.08	0.004	[0.002,0.006]
Recent work history (ref. = employed 0-19%)				
Employed 20-79%	-0.37 ***	0.11	-0.008	[-0.014,-0.002]
Employed 80-100%	-0.91 ***	0.11	-0.011	[-0.014,-0.007]
Educational attainment (ref. = bachelor degree or higher)				
Complete secondary/certificate/diploma	0.21 *	0.09	0.002	[0.002,0.006]
Incomplete secondary	0.38 ***	0.11	0.004	[0.002,0.006]
Age of youngest child (ref. = 0-2 years)				
3-5 years	-0.33 ***	0.09	-0.005	[-0.008,-0.002]
6-9 years	-0.47 ***	0.10	-0.007	[-0.010,-0.003]
10-15 years	-0.80 ***	0.13	-0.010	[-1.014,-0.007]
Number of children (ref. = 1 child)				
2 children	0.02	0.09	0.000	[-0.002,0.002]
3+ children	0.12	0.10	0.001	[-0.001,0.003]
Health status (ref. = "good" or better)				
"Fair" or "poor"	0.19 *	0.11	0.002	[-0.000,0.004]
Age of mother	-0.27 ***	0.04	-0.003	[-0.004,-0.002]
Age squared	0.00 ***	0.00	0.000	[0.000,0.000]
Country of birth (ref. = Australia)				
Overseas English-speaking	0.18	0.13	0.002	[-0.001,0.005]
Overseas non-English speaking	0.04	0.12	0.000	[-0.002,0.003]
Year (ref. = 2008)				
2002	0.10	0.14	0.001	[-0.002,0.004]
2003	0.14	0.14	0.001	[-0.001,0.004]
2004	0.19	0.14	0.002	[-0.001,0.004]
2005	0.09	0.14	0.001	[-0.002,0.004]
2006	0.06	0.14	0.001	[-0.002,0.003]
2007	0.03	0.14	0.000	[-0.002,0.003
Quarter (ref. = Jan.-Mar.)				
Apr.-Jun.	0.19	0.08	0.000	[-0.001,0.002]
Jul.-Sep.	0.48 ***	0.08	0.005	[0.005,0.003]
Oct.-Dec.	0.39 ***	0.08	0.004	[0.002,0.005]
Constant	1.50 *	0.72		
Number of records	95,855			
Number of persons	2,402			
Person-level standard deviation	0.94			
Rho[a]	0.21			

Note: Random effects model also included controls for missing health information and missing employment experience information. [a]Rho measures proportion of total variance contributed by person-level variance. *** $p < .001$, ** $p < .05$ * $p < .01$.

After taking into account all the variables, a significant difference between lone and couple mothers remained evident. Table 3 shows that when other characteristics are taken into account and held at their mean values, lone parenthood was associated with a marginal effect of 0.4 per cent. This means that the rate of exit from employment was predicted to be higher for lone than for couple mothers by 0.4 per cent. While this difference is small, it is noteworthy when considered in relation to

the overall transition rates for lone and couple mothers, which were themselves quite small (2.0 per cent and 1.3 per cent per month respectively). These results show that the higher probability of leaving employment for lone mothers was not entirely related to differences between lone and couple mothers in the characteristics explored. Of the 0.7 percentage point difference between lone and couple mothers, 0.4 percentage points were explained by lone parenthood, leaving 0.3 percentage points attributable to other factors.

The multivariate analyses also demonstrate the associations between several of the characteristics explored and transitions out of employment. In particular, transitions out of employment were most likely for those with little or no recent work history, while those with moderate amounts of work history were also more likely to transition out than those who were employed for most or all of the previous year. The marginal effects showed that compared to those who were not employed or were employed for less than 20 per cent of the previous year, those employed for 80-100 per cent of the previous year were predicted to have a 1.1 per cent lower chance of leaving employment and those employed 20 to under 80 per cent of the previous year were predicted to have a 0.8 per cent lower chance of leaving employment.

Also, more highly educated mothers were less likely to leave employment. Using the marginal effects, compared to those with a bachelors degree or higher, those with complete secondary/certificate/diploma were predicted to have an increased likelihood of leaving employment of 0.2 per cent, and those with incomplete secondary schooling were predicted to have an increased likelihood of employment exit of 0.4 per cent.

Exit rates from employment also varied by age of children and some associations were apparent for mothers' age and health status, year and quarter, while the number of children and country of birth were not significantly related to the likelihood of exiting from employment.

These models were also estimated separately for lone and couple mothers, to assess whether any factors had a stronger effect for one relationship group over the other (results not shown). Comparison of each coefficient in the lone mother model to the equivalent one in the couple model revealed that none of the coefficients were significantly different from each other. That is, there is no evidence that in the presence of a certain characteristic (such as low education), lone mothers behaved differently to couple mothers in terms of employment exit.

Entering Employment: Employment Transitions of Not-employed Mothers

As with the analyses of leaving employment, this section now explores how transitions into employment vary using multivariate analyses. Table 4 presents the regression coefficients and the associated marginal effects for this model.

Consistent with the initial analyses of employment transitions in table 2, the difference between lone and couple mothers in their rate of entering employment was not statistically significant.

Several of the factors included in these analyses were found to explain variation in the rate of entering employment. Recent work history was very important, with those who spent more of the previous year in employment being more likely to enter employment. Using the marginal effects, compared to those employed for less

than 20 per cent of the previous year, those who were employed for 20-79 per cent of the previous year were predicted to have a 2.4 per cent greater chance of entering employment, and those who were employed for 80 per cent or more of the previous year were predicted to have a 2.7 per cent greater chance of entering employment.

Table 4 - Multivariate Analyses of the Likelihood of Entering Employment for Mothers not Employed in the Previous Month, Pooled Monthly Data

	Coefficient	*Standard Error*	*Marginal Effect*	*95% Confidence Interval*
Lone mother (ref. = couple mother)	-0.02	0.08	-0.001	[-0.006,0.004]
Recent work history (ref. = employed 0-19%)				
Employed 20-79%	0.76 ***	0.08	0.024	[0.019,0.028]
Employed 80-100%	0.95 ***	0.11	0.027	[0.022,0.033]
Educational attainment (ref. = bachelor degree or higher)				
Complete secondary/certificate/diploma	-0.56 ***	0.09	-0.027	[-0.037,-0.016]
Incomplete secondary	-1.14 ***	0.11	-0.048	[-0.061,-0.035]
Age of youngest child (ref. = 0-2 years)				
3-5 years	0.33 ***	0.08	0.008	[0.004,0.012]
6-9 years	0.76 ***	0.10	0.021	[0.016,0.026]
10-15 years	0.78 ***	0.12	0.021	[0.015,0.028]
Number of children (ref. = 1 child)				
2 children	-0.28 ***	0.08	-0.010	[-0.017,-0.004]
3+ children	-0.38 ***	0.09	-0.014	[-0.021,-0.007]
Health status (ref. = "good" or better)				
"Fair" or "poor"	-0.58 ***	0.10	-0.019	[-0.026,-0.013]
Age of mother	0.07 *	0.03	0.002	[0.000,0.005]
Age squared	0.00 *	0.00	-0.000	[-0.000,-0.000]
Country of birth (ref. = Australia)				
Overseas English-speaking	0.01	0.13	0.000	[-0.009,0.009]
Overseas non-English speaking	-0.79 ***	0.11	-0.026	[-0.034,-0.018]
Year (ref. = 2008)				
2002	-0.55 ***	0.13	-0.021	[-0.033,-0.008]
2003	-0.39 **	0.13	-0.015	[-0.027,-0.004]
2004	-0.22	0.12	-0.009	[-0.020,0.002]
2005	-0.09	0.12	-0.004	[-0.014,0.007]
2006	-0.23	0.12	-0.009	[-0.020,0.002]
2007	-0.13	0.12	-0.005	[-0.016,0.005]
Quarter (ref. = Jan.-Mar.)				
Apr.-Jun.	-0.07	0.07	-0.002	[-0.006,0.002]
Jul.-Sep.	0.60 ***	0.07	0.020	[0.017,0.025]
Oct.-Dec.	-0.18	0.08	-0.005	[-0.010,-0.001]
Constant	-3.90 ***	0.61		
Number of records	49,104			
Number of persons	1,772			
Person-level standard deviation	0.80			
Rho[a]	0.16			

Note: Random effects model also included controls for missing health information and missing employment experience information. [a]Rho measures proportion of total variance contributed by person-level variance. *** $p < .001$, ** $p < .05$ * $p < .01$.

Maternal education was also important, with more highly educated mothers being more likely to enter employment. Compared to those with a bachelor degree, those with incomplete secondary schooling were predicted to have a 4.8 per cent lesser chance of entering employment and those with complete secondary schooling/diploma/certificate had a 2.7 per cent lesser chance of becoming employed.

Ages and numbers of children, health status and country of birth also had significant associations with the likelihood of entering employment. Significant associations were also apparent for year and quarter.

As with the multivariate analyses of leaving employment, separate models were also estimated for lone and couple mothers, but none of the lone mother coefficients were significantly different from those for couple mothers (results not shown).

4. Discussion

This paper set out to identify differences between lone and couple mothers in their likelihood of entering and exiting employment, in order to help in understanding the different employment rates of lone and couple mothers. These results show that lone mothers were more likely to leave employment than couple mothers, but they were no less likely to enter employment. These same findings have been observed in analyses of lone mothers' employment in the UK (Evans *et al*., 2004).

These analyses showed that quite small percentages of mothers, whether lone or couple, transition into or out of employment in any one month. However, when considered over a longer period, the percentages accumulate, and where gaps between lone and couple mothers exist, they will become more apparent over time. For example, when calculated over this sample, for lone or couples mothers who were not employed in one month, 3.6 per cent were employed the following month. If a 12-month period is used instead of the one-month period, 26 per cent of those not employed at the beginning of this period had entered employment at some time in the following 12 months. For employed mothers, there were different monthly rates of leaving employment for lone and couple mothers (2.0 per cent and 1.3 per cent respectively). Over a 12-month period, this translated into a gap of 5 per cent between lone and couple mothers (15 per cent of employed lone mothers and 10 per cent of employed couple mothers left employment over 12 months).

To use these findings about transition rates to explain why lone and couple mothers' employment rates are different, it is necessary also to take account of the proportions of lone and couple mothers 'at risk' of making a transition into or out of employment. Table 4 showed that, on average, 58 per cent of lone mothers and 68 per cent of couple mothers were employed in one month. This greater 'stock' of couple mothers who are employed, compared to lone mothers who are employed, is sustained over time, given the higher exit rates from employment for lone mothers. Conversely the 'stock' of not-employed mothers is greater in any one month as a percentage of lone mothers than couple mothers. Because the transition rates into employment are low, and are the same for lone and couple mothers, again, the lower rates of employment of lone mothers are perpetuated. Of course, this is a simplification of the transitions that occur, since mothers can transition into and out of lone parenthood as well as into and out of employment.

We could ask when or how this disparity in employment rates between lone and couple mothers arises. Does it occur after women become single mothers, either through separation or becoming parents while single? Or do women who become lone mothers already have lower employment attachment even before they become single parents? An indication that lone mothers have relatively low employment rates even before they become mothers can be revealed from the Longitudinal Study of Australian Children (LSAC). Using these data, Baxter and Gray (2008) reported that 79 per cent of mothers with only one child had been employed during the pregnancy for that child. If these data are disaggregated by mothers' relationship status, we find that of these mothers with one child, 65 per cent of lone mothers and 81 per cent of partnered mothers were employed during their pregnancy with that child. That is, even before lone mothers become parents, their attachment to the labour market is weaker. Whether employment rates are lower prior to relationship separation for lone mothers is an empirical question that could be explored further with LSAC or HILDA data.

Exploration of the impact of characteristics other than relationship status on mothers' employment transitions revealed that several factors, in particular education levels, previous work experience and health status, were important in explaining differences in transitions into and out of employment. These findings were especially important with regard to lone mothers' employment, given that, on average, lone mothers had lower levels of education, less work experience and poorer self-reported health than couple mothers.

While our analyses included a range of characteristics of mothers in order to isolate differences in employment transitions related to relationship status, it is possible that lone and couple mothers differed on other characteristics not included in these analyses. Butterworth (2003), for example, showed that for income support recipients in Australia, lone mothers had a greater incidence of mental health problems, substance abuse disorders and a history of having experienced physical or sexual violence than couple mothers. These factors may all contribute to lone mothers' difficulties in engaging with the labour market. Our finding of a higher exit rate from employment for lone mothers may therefore not just relate to lone parenthood, but to such differences in the characteristics of lone and couple mothers.

Related to this, the higher transition rate from employment for lone mothers may reflect differences in the types of jobs undertaken by lone and couple mothers. People leaving income support for employment, or combining income support with employment, often work in precarious jobs with low wages and with limited employment benefits, such that their short-term financial gains from employment are not always evident (Bodsworth, 2009). There is also the question of whether these jobs are a stepping stone to better jobs (such that 'any job is a good job'), or whether they are part of a 'low pay/no pay cycle' (Evans *et al*., 2004; Fok, Jeon and Wilkins, 2009). In this context, analyses of the types of jobs undertaken by lone compared to couple mothers, their reasons for leaving employment and longer term employment trajectories would be useful to further our understanding of the results presented in this paper.

These monthly employment data derived from the HILDA calendar can be used to explore employment transitions in ways other than those presented here. A possible extension of the analyses in this report would be to use duration modelling

techniques to take into account time dependence associated with the spell nature of the data. In addition, multivariate techniques could be used to jointly examine the transition between lone and partnered relationship status and the transition between employment states. Such analyses could help to ascertain how mothers' employment participation relates to the event of separation.

In terms of limitations, one issue is that we were only able to examine transitions between employed and not employed, and of particular value with regard mothers' employment would be the ability to analyse transitions between part-time and full-time employment. While this is not possible with the HILDA calendar data, this may be a topic worth pursuing instead with the between Waves employment data from HILDA. Likewise, these survey data could be used to more closely examine the types of jobs, and transitions between jobs, for lone and couple mothers.

The multivariate analyses presented in this paper were kept relatively simple to focus on the question of differences between lone and couple mothers, and to make use of data at the monthly level. The range of information in HILDA on job and family characteristics provide many possibilities for expanding on this work. For example, job characteristics, partners' characteristics (for couple mothers), welfare receipt status or history and housing costs could be examined. To provide a more thorough understanding of how lone and couple mothers differ in their engagement with the labour market, this might be especially valuable.

5. Policy Implications and Conclusion

A focus of government policy in Australia, as in other industrialised countries, has been on providing incentives for lone mothers to participate in the labour market. An important policy implication of this research is that a significant reason for the lower employment rate of lone mothers is their higher exit rate from employment, and thus there is a potential role for policy in improving employment retention for lone mothers. Given this finding, this section provides an overview of the range of policies that may potentially play a role in improving employment retention of lone mothers. Other OECD countries, especially the UK and the US, have begun to recognise job retention as an important policy focus (Bell *et al*., 2006; Evans *et al*., 2004; Kellard *et al*., 2002). Hirsch (2006), writing about possible approaches in the UK to improving lone parents' in-work outcomes, including job retention but also job advancement, suggests three broad approaches: 'sustainable entry strategies', 'support for new entrants' and 'improving jobs'.

'Sustainable entry strategies' are concerned with enabling and encouraging take-up of sustainable jobs through appropriate training and job search assistance. This addresses the fact that many lone parents, on entering employment, often take up precarious jobs; for example, short-term, low-paid, temporary and casual jobs. If, instead, lone mothers are encouraged or helped to take up jobs with better employment conditions or a better fit to their caring responsibilities, this might result in greater employment retention and therefore less churning back into non-employment. This is not without contention, however, as such jobs may be difficult for lone mothers to attain given their relatively low levels of human capital, and this then relates back to the question of whether any job is better than no job. Is it better for lone mothers to move into and out of different, relatively low status jobs, if the alternative is to remain longer out of employment while waiting for a more sustainable job?

'Support for new entrants' covers the provision of continued case management and support to lone parents after commencement of employment, as well as access to training; for example, the UK New Deal for Lone Parents, which includes access to advice and support in the period following entry into work (Millar and Ridge, 2009). Further work is underway in the UK and the US to explore policies that might result in better job retention, notably through their Employment Retention and Advancement programs. While not yet fully evaluated, in the UK, these programs included job coaching and mentoring; a retention bonus for staying in work for a specified minimum number of hours and weeks; training fees and bonuses; and services to assist parents to increase their earnings or to find a higher paying job (Bell *et al*., 2006; Kellard *et al*., 2002).

Support for new entrants can also include wage supplements or tax credits to help address the fact that some employed lone parents may earn quite low incomes, and may actually be no better off financially than if they were to remain out of employment, because of the withdrawal of benefits once income reaches a certain threshold. As a result, 'making work pay' is a very significant focus of policy in relation to lone parents' employment across the OECD countries (Knijn, Martin and Millar, 2007; Millar, 2008).

'Improving jobs', in Hirsch's (2006) framework, is related to wages, employment conditions and job protection for workers, especially those in more vulnerable jobs. In addition to access to basic employment conditions (such as reasonable wages), access to family-friendly working conditions is likely to be especially relevant to mothers of young children, which, for example, has been addressed in the UK in relation to parents' rights to request flexible work hours (Millar and Ridge, 2009). Demand-driven policies to improve job retention are particularly relevant here, including those in which effort is made to identify the demand for jobs in the local labour market through consultation with employers, in order to provide training opportunities and match jobseekers to those jobs (Kellard *et al*., 2002).

These policy approaches would extend the current focus on moving lone mothers into employment. Like Australia, most countries have policies that encourage transitions into employment, through 'activation strategies', or policies that require mothers, once children reach a certain age, to participate in paid work, in job search, or in other activities such as training or volunteer or community work, in order to develop work-related skills. Also relevant is that lone and couple mothers' employment decisions and outcomes are affected by a broader range of policies, including those in the areas of child care and industrial relations. See, for example, Adema and Whiteford (2007), Evans *et al*., (2004), Knijn *et al*., (2007), Millar (2008), Millar and Ridge (2009), and Yeo (2007) for discussion of these policies.

While we have focused above on lone mothers' employment transitions, it is important to note that concerns about gaining and retaining employment are relevant also to partnered mothers. As such, policies may be most effective when targeted to a broad range of mothers and not just those without partners. In fact, these analyses showed that employment transitions are not entirely explained by relationship status, therefore other characteristics of mothers, such as having a health condition or low levels of education, may be equally useful to consider in targeting policies relating to employment entrance or retention.

In conclusion, this paper has explored the employment transitions of lone and couple mothers to determine whether differences in exits from employment or entrances to employment could explain the lower employment rates of lone mothers. We found that lone mothers had a somewhat higher rate of exiting employment in any one month, compared to couple mothers, but found no difference between lone and couple mothers in their rate of entering employment. The different rates of exiting employment remained significant when the characteristics of lone and couple mothers were taken into account. Policy measures aimed at increasing the job retention of lone mothers may therefore help to increase the employment rate of lone mothers. However, the vast majority of lone mothers who are not employed tend to be continually out of work rather than transitioning between non-employment and employment. Some not employed mothers are likely to be focusing on providing full-time care to their children. Others want to work, but face substantial barriers to doing so. Providing additional tailored supports to these mothers may be another way of reducing the employment gap between lone and couple mothers.

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