

Stability of lone mothers' employment:
Using HILDA calendar data to examine work transitions

Jennifer Renda and Jennifer Baxter

Australian Institute of Family Studies

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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. Increasing employment rates of lone mothers is a goal for policy makers as participation in paid work is seen as central to reducing poverty and welfare dependence within lone parent families. However, if the work that lone mothers undertake is unstable they may continue to be at risk of poverty and welfare dependence. In order to examine whether or not lone mothers are more likely than couple mothers to experience unstable employment, calendar data from all seven waves of the HILDA survey are used to identify and compare the rate at which lone and couple mothers move into and out of employment. The calendar divides each month into thirds, and captures employment status in each of these time periods, so short periods of employment and non-employment can be measured. These data show that in any period lone mothers are less likely to be employed than couple mothers. Of those employed in a period, lone mothers are more likely to transition out of employment than couple mothers but not employed lone and couple mothers are no different in their likelihood of transition into employment. The analyses also consider whether factors other than lone parenthood differentiate mothers in their employment transition rates. These analyses show that educational attainment, work history and age of youngest child may influence, in part, the different employment transition rates of lone and couple mothers.

1 Introduction

While the proportion of lone mothers participating in paid work in Australia has increased over recent years, their employment rate remains below that of couple mothers (ABS, 2009; Gray et al., 2003). The same is true in other OECD countries, such as the UK, the US and New Zealand (Millar & Evans, 2003). A key underlying concern about jobless lone mothers is for the welfare of children growing up in these families. Joblessness in families has been 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 (AIHW, 2008; Dawkins et al., 2002 ; Heady & Verick, 2006).

Several explanations for why the gap in employment rates of lone and couple mothers persist have been put forward, including the different characteristics of lone and couple mothers, differences in their abilities to combine work with caring for children, and financial disincentives to work due to the interaction of the income support system and wages (Millar & Evans, 2003). However, there is still much that is not known about the reasons for the relatively low employment rates of lone mothers. This paper contributes to the knowledge base by analysing whether employed lone mothers in Australia are, at any point in time, more likely to exit employment than couple mothers; and whether non-employed lone mothers are less likely than couple mothers to enter employment at any time, taking into account their different characteristics. The employment calendar in the Household Income and Labour Dynamics in Australia (HILDA) survey is used to examine the employment transitions of all mothers with dependent children aged under 15 years.

In designing policy to increase lone mothers' employment it is important that both entrances into employment and exits from employment are considered. Given that not-employed persons are much more likely to remain not employed than they are to move into employment at any time (e.g. Buddelmeyer, Freebairn et al., 2006; Knights et al., 2000; Stromback et al., 1998), to narrow the gap between couple and lone mothers, significant effort would have to be put into ensure lone mothers increase their rate of movement into employment. Just as importantly, their retention in employment needs to be addressed so that mothers gaining paid work do not cycle back out of employment again. This appears particularly relevant to lone mothers as past research suggests that they have higher rates of employment exit than other groups in the population (see below for more detail).

Employment transitions, as distinct from employment rates, allow insights into how the labour force evolves for different groups – whether some are more static than others. Several analyses of Australian data have shown that employment transitions vary with particular characteristics, such as age and prior employment experience (e.g. Knights et al., 2000; Stromback et al., 1998), but as these analyses do not focus on mothers, their findings are not directly relevant to this paper. Whiteford (2001) showed the value of analysing the dynamics of lone mothers' employment using Australian data. He found that lone mothers were more likely to experience job transitions over a year than partnered men and women. Also, a significantly higher proportion of lone mothers had a job during the year than were employed at a point in time.

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. The wide range of characteristics available in the data set allow analysis of the factors that may contribute to any differences between lone and couple mothers.

The structure of this paper is as follows. A background section provides a brief review of the international and Australian literature. The next section discusses how the HILDA data have been used in this analysis. Section 4 presents the results —first an overview of the employment transitions, then more detailed analyses of leaving and entering employment. The final section discusses these findings and presents conclusions.

2 Background

2.1 Policy approaches

To address concerns about lone mothers' employment, several countries have introduced policy measures aimed at increasing employment rates, with specific policy goals and approaches varying from country to country (Bradbury, 2003; Millar & Evans, 2003). Such policy measures include activation strategies (or employment programs), enhancing financial incentives to work, and provision of advice, support and retraining services. Policy measures also extend to broader work–family measures such as expansion of childcare services (Millar & Evans, 2003).

Policy approaches are complicated, however, because parenting is recognised as an important and valuable activity, especially when children are young. In Australia, historically, lone parents have received income support not tied to labour market obligations, with a policy goal of alleviating poverty in those families, and recognising the parenting role of these lone parents. By OECD standards, this assistance has been relatively generous (Whiteford, 2001). Over time eligibility to income support has tightened up somewhat, and an emphasis on participation (or mutual obligation) adopted: from September 2003, Parenting Payment recipients (most of whom are lone parents) whose youngest child was 13 to 15 years old were required to undertake one or more activities (such as job search, education, training or community work), for up to 150 hours in each six-month period to develop and enhance their work-related skills to prepare them for a return to work (Alexander et al., 2005). Then in July 2006, compulsory employment participation or job search requirements were introduced for those whose youngest children had turned six, for couple mothers, or eight, for lone mothers (Centrelink, 2005). Policy changes have also addressed financial issues, particularly concerns about low additional returns from paid work relative to income support, once taxation, loss of benefits and costs of paid work are taken into account. Changes to the interaction between earnings, tax and benefits, and also changes in financial assistance for childcare have been introduced, but even so, the financial issues for lone parents moving into employment remain considerable (Whiteford, 2001).

2.2 “Welfare to work” research

The employment transitions of mothers, particularly lone mothers, that have commonly been studied are those that involve movements between employment and income support (or welfare). Interest in this area has expanded since the policy changes in Australia, the “New Deal for Lone Parents” in the UK and Personal Responsibility and Work Opportunity Reconciliation Act (PRWORA)(1996) in the US, which require or encourage lone mothers in receipt of welfare payments to enter paid employment. Frequent transitions between welfare and employment is recognised as an issue for income support recipients. In particular, there is concern that a large proportion of lone mothers leaving income support are entering jobs that are low paid and insecure and are thus commonly moving back onto income support after short periods in employment (Gregory, 2002).

Looking internationally, a UK study found that of those finding work through the “New Deal for Lone Parents” scheme between 1998 and 2002, 29% returned to income support within a year (Evans et al., 2003). Similar patterns have been found in

the U.S., with mothers who are less educated, who have younger and/or higher numbers of children being more likely than other mothers to return to welfare payments. U.S. research also suggests that a large proportion of lone mothers who left welfare for work after the 1996 welfare reforms entered temporary jobs (Cancian et al., 1999).

In looking at the transitions between welfare and employment, key factors to consider are the characteristics of the mothers and their potential jobs, and the influence of welfare generosity and eligibility criteria. With regard to welfare generosity, clearly there will be incentives for mothers—lone or partnered—to remain out of employment if the potential income from welfare is high relative to potential take-home earnings. Eligibility requirements dictate how many hours of work (in the UK) or how much earnings can be received (Australia) before government support is affected and no doubt this has implications for employment decisions. This importance of financial issues to employment decisions will possibly be different for lone and couple mothers, as it depends on entitlement to income support payments (which, in Australia, are more generous for lone mothers) and other household income (including partners' income for couple mothers). Financial issues for lone parents cannot be understated: some lone parents may even leave employment because they find the costs of working, along with the loss of government support, mean they are not financially better off while working (see studies cited in Richardson & Miller-Lewis, 2002).

2.3 Employment transitions around a birth or relationship change

Employment transitions of mothers have also been explored in relation to the period of time around a birth. However, even in the international literature, comparisons between lone and couple mothers appear limited. Where relationship status is included as a control variable in these analyses, some studies have found no evidence of differences in the timing of return to work according to relationship status (Joesch, 1997; Ondrich et al., 2003). International findings with regard to differences between lone and partnered mothers may not translate to Australia, since in many OECD countries, the employment rate of lone mothers is not significantly below that of couple mothers (OECD, 2007). For the UK, where the employment rate of lone mothers is relatively low, Dex et al (1998) found that lone mothers actually had a marginally faster return to work after a birth, compared to mothers with an employed partner. Also for the UK, and looking more broadly than the return-to-work period Evans et al. (2004) found that lone parents were twice as likely to leave employment as partnered parents, although moved into employment at similar rates. Baxter's analyses of mothers' return to work in Australia found that lone and partnered mothers were not significantly different in the timing of return to work when their pre-birth employment status was also taken into account. However, lone mothers did have a lower likelihood of having returned to work by 12 or 18 months after a birth if pre-birth employment status was not included in the analysis (Baxter, 2008).

Job entry and exit may be associated with the acts of becoming single and re-partnering. Recently divorced women are more likely to enter employment than other women (Jeon, 2008; Johnson & Skinner, 1986). This may be related at least in part, to the effect of divorce on family income and may impact on employment take-up in the lead up to divorce as well as afterwards (Johnson & Skinner, 1986). The reverse pattern has also been found – those who marry are more likely than others to leave employment – though the relationship wasn't as strong (Jeon, 2008). Stewart (2008)

found that lone mothers in her study who partnered were less likely to experience unstable employment than those who remained single.

2.4 Job characteristics, work-family balance, and employment retention and entry

Buddelmeyer et al.'s (2006) analysis of casual employment showed men and women employed in casual jobs at a point in time are more likely to be out of work at a later time, than those employed in non-casual job. Similarly, Scutella (2006) showed that those employed in low-paid jobs are less likely than other employed persons to be employed at a later time. Employed lone mothers are more likely to be employed in casual and lower status jobs, and less likely to have access to family-friendly work arrangements than couple mothers (Baxter et al., 2007). These occupational differences could be explained, in part by the fact that lone mothers have on average lower levels of educational attainment than couple mothers (Australian Institute of Family Studies, 2005).

Another factor that may contribute to mothers entering and remaining in employment is the degree of strain they experience in reconciling their work and family responsibilities. In exploring the differences in work-family strain of lone and couple mothers, Baxter and Alexander (2008) found that employed lone mothers were more likely than couple mothers to agree that they had missed out on home or family activities and more likely to agree that their family time is less enjoyable and more pressured because of work responsibilities. These differences, however, appeared to be related to the different characteristics of lone and couple mothers, rather than being a factor of lone parenthood itself.

Analyses of employment transitions show that movements into and out of employment are also likely to be strongly associated with past employment experience. Those who have spent more time in employment are more likely to remain employed, if employed, or to enter employment if not employed. In the economics literature, this is given considerable attention, in examining the role of "duration dependence" or "state dependence" in analysing future moves into or out of employment (Buddelmeyer et al., 2006; Haynes et al., 2008; Knights et al., 2000; Stromback et al., 1998). This may be particularly important for this paper, if lone mothers and couple mothers have quite different employment histories – that is, differences in lone and couple mothers may occur not just because of their parenting status, but because lone mothers may have had weaker attachment to the labour market in the past.

2.5 Work orientations

In discussing the employment rates of mothers, it is important to consider that mothers often prefer to look after children while they are young, and thus take a break from employment at this life cycle stage. Therefore a significant proportion of not-employed lone and couple mothers actually prefer not to work. However, it appears that not-employed lone mothers have a stronger desire to enter employment than not-employed couple mothers, as the unemployment rate of lone mothers is higher than that of couple mothers (Whiteford, 2001). Lone mothers, however, have more barriers to their employment, for example, they have high rates of physical and mental health problems (Butterworth, 2003).

2.6 Other characteristics

The likelihood of leaving or entering employment is likely to vary with factors such as the availability of suitable jobs, the ability to reconcile work and family responsibilities and the potential financial gain from employment. Lone and couple mothers are likely to differ in relation to these factors and their impact on employment entry and exit. Similarly characteristics, may, in part, explain differences between lone and couple mothers. These include family characteristics such as age and number of children, and maternal characteristics such as educational attainment, age and health status (Evans et al., 2004; Gray et al., 2003; Hynes & Clarkberg, 2005; Stewart, 2008).

To account for the possible impact of lone and couple mothers' characteristics, in this paper work histories, education, numbers and ages of children, health status and age are included in analyses of employment transitions. Because these data span several years, changes in employment transitions over these years are examined, and seasonal effects are also taken into account given we use monthly data.

3 Data and method

3.1 HILDA, Waves 1 to 7

The Household, Income and Labour Dynamics in Australia survey (HILDA) is an annual panel survey, starting from wave 1 in 2001. Each year interviewing commences in late August and finishes by March the next year, though the majority of interviews are completed by early December. At wave 1 the sample comprised 13,969 adults aged 15 and over from 7,682 households. While sample size declined over the waves, due to attrition, at each wave new members to households were added in. For more information about the survey refer to the HILDA User Manual (Watson & Wooden 2002a).

This paper uses data from all 7 waves of HILDA, primarily using the “calendar” component of the survey, although wave 1 has been excluded for much of the analyses. This is primarily because significant changes to this component of the survey were made after wave 1, to correct some design issues which affected data collection (Watson & Wooden, 2002b). All waves of the data were used in a brief descriptive analysis of the characteristics of employed and not-employed mothers by relationship status.

Following derivation of relevant variables, the analyses were limited to mothers of children aged under 15 years, which was around 2,000 persons at each wave. The analyses are based on unweighted data.

3.2 Calendar data

A series of “calendar” questions was included in each wave of the survey, asking about work and study activities from July 1st of the previous year, up to the survey date (a period of between 14 and 18 months for most respondents). In relation to work, respondents were asked to indicate how many jobs they had over this period and to identify the dates within which they worked in each of those jobs. This data was used to construct a series of job indicator variables that identified whether or not, at the start, middle and end of each month covered by the calendar, each respondent worked in job 1 through to 12 (the maximum number of jobs a respondent reported having over the time period in question). This information was collapsed to obtain an indicator of whether or not they were employed in any job in each period. Note that “employed” includes periods of paid leave, and therefore includes paid maternity or paid holiday leave. Those classified as “not employed” include the unemployed as well as those not in the labour force. Table 1 shows a summary of these data, just using Wave 2 of HILDA, for mothers with children aged under 15 years.

Table 1 Calendar information, lone and couple mothers with children aged under 15 years, wave 2

		Lone mothers	Couple mothers	Total mothers
Number of observations	N	409	1705	2,114
Employed	%	51	62	60
			<i>At survey date</i>	
			<i>In last financial year</i>	
Always employed	%	43	55	53
Some of year employed	%	15	14	14
At no time employed	%	42	30	33
Percentage of the year employed	Mean	45	57	55
Percentage of the year employed, of those employed at W1	Mean	88	92	91

Note:

Data for total mothers, for all waves, is given in Appendix 1.

At the time of the survey, couple mothers were more likely to be employed (62%) than lone mothers (51%). Mothers who were employed at the time of the survey (both lone and couple) reported having spent, on average, around 90% of the previous financial year employed. Looking at the financial year data for all mothers, 55% of couple mothers and 43% of lone mothers were employed for the whole previous financial year. The proportion spending some time, but not all year, in employment was 14%, with no difference between lone and couple mothers. The balance – 30% of couple mothers and 42% of lone mothers spent no time in employment. These data indicate that the majority of mothers are not transitioning between employment and non-employment over a one-year period, and also indicate that the rate of transition may not vary between couple and lone mothers. This paper explores this. The financial year calendar data are used in this analysis to capture prior work history.

The analyses in this paper make use of the calendar data to capture movements into and out of employment in consecutive time periods. However, the 3 within-month time periods were aggregated to one month, such that respondents were classified as employed in a month if employed in any of the 3 time periods. This was to simplify the analysis and the presentation of results.¹ It was also not possible to analyse changes in characteristics of respondents at the within-month level, whereas changes in relationship status could be matched reasonably well to the monthly level (discussed further below).

The calendar data from each wave were matched by respondent to develop a complete calendar across all waves (that is, from July 1st 2000 to the respondent's interview date in 2007).² Where data were missing, either due to non-response for that wave or

¹ If the data were retained at the more detailed level, the same relationships we present here are observed, but the proportions leaving or entering employment from one period to the next are smaller.

² While respondents were surveyed roughly every 12 months, calendar data for each wave covered a 14 to 18 month period. Therefore there was some overlap in the data collected, resulting in some calendar time periods having two, sometimes differing, reports of job

other reasons, the employment status was set to missing just for those periods affected.³ Data were then converted to a “person-month” format, so that for every person, for every calendar month (that is year by month), there was an indicator of whether or not employed at that time. This is the foundation of this analysis. Because this dataset is by design the number of respondents times the number of calendar months for which employment data were reported, there are significantly more “records” to analyse than there are respondents. For example, Table 2 shows that for employment transitions during 2002 there were over 4,300 person-months for 519 lone mothers and almost 20,000 person-months for 1,828 couple mothers. Across all years there was a total of over 28,000 person-months for lone mothers and almost 103,000 person-months for couple mothers.

Table 2 Person-month data for those with non-missing employment status, sample numbers, respondents with children aged under 15

	2002	2003	2004	2005	2006	2007	Across years
Number of person-month records							
Couple	18,696	18,031	17,234	17,244	17,319	13,397	101,921
Lone	3,989	4,973	5,172	5,067	4,958	3,930	28,089
Total	22,685	23,004	22,406	22,311	22,277	17,327	130,010
Which relate to the following number of persons							
Couple	1,828	1,652	1,590	1,608	1,665	1,534	9,877
Lone	519	521	527	525	522	479	3,093
Total	2,347	2,173	2,117	2,133	2,187	2,013	12,970
<i>Changed relationship within wave</i>	164	89	82	89	89	66	579

Note:

The person numbers refer to the total number of persons who were lone parents at some time and the total number who were couple at some time within a calendar year (or across any year). This double-counts respondents since across all waves 579 women changed between single and partnered between waves. The total numbers of persons are different to those presented in Table 1, as these are the number contributing data to each calendar year, rather than the number at a particular wave.

The employment data in consecutive months were then used to derive measures of employment transitions, specifically to derive whether respondents stayed employed, stayed not employed, left employment, or entered employment (see Table 4). For each month two key measures were derived: for those employed at one month, the likelihood of leaving employment the next month and, for those not employed at one month, the likelihood of entering employment the next month (Table 5). This paper

activity. For the current analysis, where this happened the most recent report of job activity was used. If the more recent of the two dates had a missing value attached, the less recent value was used.

³ Not all respondents completed all seven waves of data due to some respondents dropping out of the study others skipping a wave or waves and then returning and additional respondents being part of a top-up sample who commenced involvement after the first wave(s) had been completed. In the current analysis respondents who completed one or more waves are included.

focuses on these particular measures, comparing couple and lone mothers, along with other characteristics that are likely to explain such employment transitions.

3.3 Characteristics

Relationship Status

A central variable of this paper is relationship status, in which lone parents are differentiated from couple parents. Others who are not living with children are excluded. While relationship status was available at each survey wave, these analyses also consider changes in relationships that occurred between waves such that relationship status could be determined at each month. This was done by making use of the details of timing of relationship commencement and breakdown at each wave. Appendix 2 contains further information about the derivation of monthly relationship status.⁴

Child details

At each wave, information was collected from respondents on the numbers and ages of their children. Ages are provided only in years, meaning that matching to monthly data is somewhat problematic. In the case of new births, through the use of the household form, it was possible to identify in what month a new baby was added to the household, and this information was used, in conjunction with age of youngest child, to match the child data to months when a birth occurred between waves (and year and month of new birth provided). Where a birth did not occur (or details not provided), the birthday was assumed to be at the time of the previous survey. Clearly this is only an approximation, but it is not expected to have a significant impact upon results.

Other information (education, health and age of mother)

Highest level of educational background and self-reported health status were collected at each Wave. It was assumed that this information remained constant (that is, was not time-varying) within survey periods, so the status as at one Wave was attributed to all calendar data that were sourced from that Wave. Age of mother (in years at last birthday) was also included in the analyses in the same way.

Work history

To explore whether differences in lone and couple parent status were associated with prior work history, a categorical variable was created from the calendar data of the survey prior to each time period, classifying respondents into groups of high employment attachment (employed for 80% or more of the previous financial year), moderate attachment (more than 20% and less than 80% spent employed) and low attachment (20% or less of the previous year employed). This is not a perfect measure of prior work history – it captures data on just one year and also, since it is based on

⁴ Note that while relationship status is entered in the analysis as time-varying, we have not attempted to analyse how a change from partnered to lone, or lone to partnered is associated with employment transitions around the time of relationship changes. It is planned this will be explored in future analyses of these data. Wave 1 lacked key information about the recent history of relationships, and so it was not possible to derive monthly relationship status to match to the calendar data collected at Wave 1. This was another reason contributing to the decision to exclude Wave 1 data.

the previous financial year, will vary in distance from the month under examination. Nevertheless, it is expected to capture some of the effects normally found in taking into account duration dependence.

Summary of characteristics mapped to the calendar data

The different characteristics of lone and couple mothers are apparent in Table 3, with lone mothers having spent less of the prior year in employment, having lower levels of education and poorer self-reported health and being younger. Lone mothers are more likely than couple mothers to have older children (and less likely to have under-3-year olds) and are more likely to only have one child.

Characteristics of employed and not-employed mothers

To help provide background as to what mothers are ‘at risk’ of leaving work or of entering work, and how factors differ for lone and couple mothers, the paper also contains a brief examination of some characteristics found in the survey data, as they relate to women according to their employment status at the time of the survey. This section of the analyses is just meant to provide some insights as to why lone and couple mothers may have different outcomes in the labour market, and the results are presented at the beginning of each of the sections on leaving employment (a discussion of the employed mothers) and entering employment (a discussion of the not-employed mothers).

Table 3 Characteristics of lone and couple mothers with children aged under 15

	Couple	Lone	Total
	%	%	%
Employed <20% previous financial year	27.9	40.2	30.5
Employed 20-80% previous financial year	9.8	11.0	10.1
Employed 80-100% previous financial year	61.8	47.1	58.7
Previous employment information missing	0.5	1.7	0.7
Bachelor or higher	39.8	25.4	36.9
Certificate/diploma	34.3	51.2	37.7
Secondary only	25.8	23.4	25.4
Health status is “fair” or “poor”	9.1	15.6	10.5
Health status is “good” or better	81.8	73.2	80.0
Health status missing	9.1	11.2	9.5
Age of youngest child			
0-2	28.7	18.1	26.4
3 to 5	20.4	19.5	20.2
6 to 9	22.6	24.6	23.1
10 to 15	28.3	37.7	30.3
Number of children			
1	19.4	30.9	21.7
2	46.7	40.3	45.4
3+	34.0	28.8	32.9
Mother aged < 20	12.2	19.7	13.8

Notes:

Missing employment history occurred when respondents skipped one wave of HILDA so employment history for the previous financial year were not available.

Health status had a high proportion missing. This was the only variable in this analysis taken from the self-completion questionnaire rather than the interview, and so missing on this item reflects non-response to this instrument as well as non-response to this item.

Percentages are calculated based on the distribution of these variables over the person-month data

3.4 Bivariate and multivariate analyses

In this paper we focus largely on findings from descriptive or bivariate relationships as a first step towards understanding factors associated with lone mothers’ employment transitions, and how they compare to those of couple mothers. Some multivariate analyses are also included to draw the results together.

An important step in explaining the differences between lone and couple mothers is acknowledging that these mothers have different sets of characteristics, which in themselves may lead to different employment outcomes. We are therefore interested in examining to what extent differences in employment transitions of lone and couple mothers are related to their different characteristics, especially considering numbers and ages of children, and educational attainment, age and health status of the mother and prior work history.

To fully understand these relationships, multivariate analyses are required. In this paper, we present a simple approach – one in which the likelihood of leaving (entering) employment in time “t+1” is estimated for those who are employed (not employed) at time “t”. All months’ data are pooled, and the models include dummy variables to control for year and quarter. The explanatory variables are relationship status, numbers and ages of children, educational attainment, age and health status, all measured as at time “t”, and employment history, based on the proportion of time in employment in the previous financial year.

As the outcome variables are binary (either leaving employment or entering employment) logistic regression is appropriate. However, as there are multiple records per person, more sophisticated techniques are required to allow for the possible within-person correlations. This is important in this type of analyses, as this person-level variation could be quite significant, especially considering that the models include only a fairly small set of person-level explanatory variables. To do this, random effects models were used, using stata’s xtlogit. These models incorporate a random error term, which captures the correlation between person-level records.

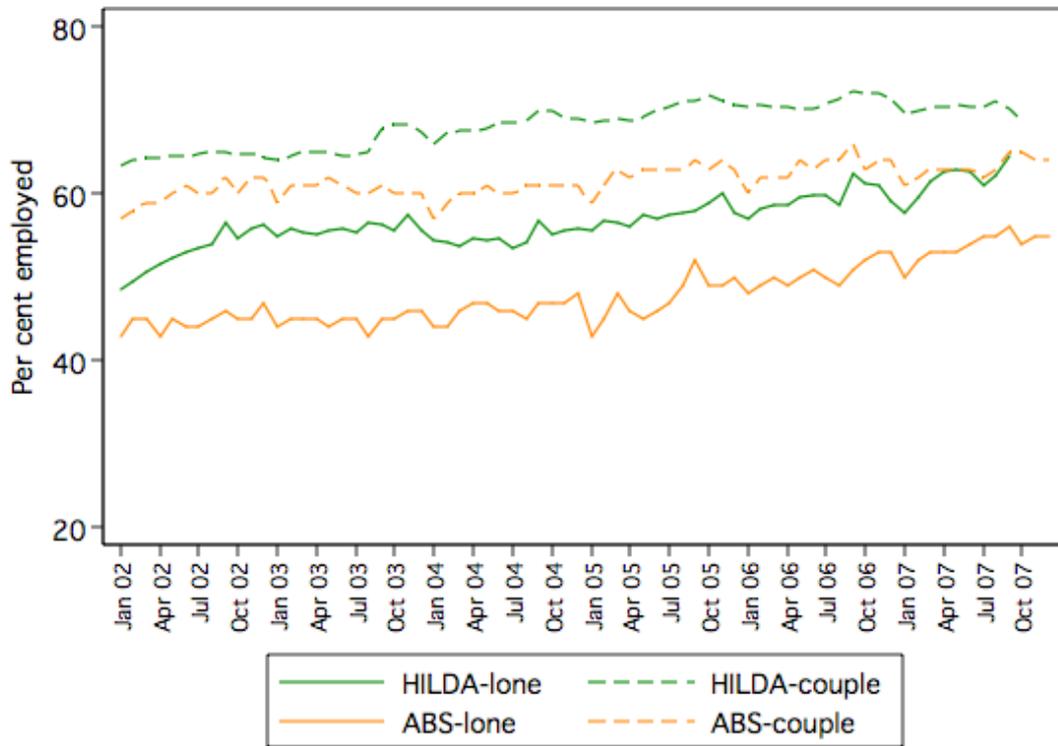
Models were estimated in two steps – first with and then without the employment experience variable – to allow us to examine whether the effect of employment experience caused other associations with the outcome variable to alter. Our method is far simpler than those used in other studies (e.g. Buddelmeyer et al., 2006; Haynes et al., 2008; Knights et al., 2000), as we are primarily concerned with finding an approach that allows us to discern how these transitions vary with relationship status, after taking into account other variables. More sophisticated approaches can be explored in future analyses of these data.

4 Results

4.1 Overview of the employment and transitions data

Figure 1 shows how the employment data vary both with relationship status and over time, and also compare these data to the “official” data from the Australian Bureau of Statistics. According to both HILDA and the ABS, lone mothers are less likely to be employed than couple mothers, although the employment rate of lone mothers has been increasing gradually since 2005. The ABS estimates of proportion employed are higher than those based on HILDA, and further analyses of these data is required to determine the reasons for this.

Figure 1 Percentage employed over time, by relationship status, mothers of children aged under 15 years



Source: Australian Bureau of Statistics, Labour Force Status (Supertable FM2) by Sex, Age, Relationship, by month.

Looking at the data as monthly employment transitions instead, Table 4 shows that, consistent with Table 1, the proportion moving between employment and non-employment is small relative to the proportions remaining employed or not employed. This is not surprising—various other studies of employment transitions have shown that there is a high degree of “state dependence” when looking at employment transitions, such that people are much more likely to stay in their state of employment than they are to change it (Buddelmeyer et al., 2006; Haynes et al., 2008; Stromback et al., 1998).

“State dependence” is especially likely to be apparent in these data, where we are evaluating month-to-month transitions rather than year-to-year transitions. Table 4 shows that of those employed at one time period, 1.7% are not employed in the next month, with a higher exit rate for lone mothers (2.3%) compared to couple mothers (1.5%). Of those who are not employed at one time period, a slightly higher percentage moves into employment (3.6%), with no difference between lone and couple mothers.

Table 4 Month-to-month employment transitions, pooled data 2002 to 2007, mothers with children aged under 15

	Couple	Lone	Total
Employment transition month t to month t+1			
Stay employed	66.7	55.0	64.2
Leave employment	1.0	1.3	1.1
Enter employment	1.2	1.6	1.1
Stay not employed	31.2	42.1	33.5
Total	100.0	100.0	100.0
Sample count (number of person-months)	101,921	28,089	130,010

Table 5 Month-to-month employment transition matrix, pooled data 2002 to 2007, mothers with children aged under 15

		Employed month “t+1”	Not employed month “t+1”	Total
		%	%	%
Couple at “t”	Employed at month “t”	98.5	1.5	100.0
	Not employed at “t”	3.7	96.3	100.0
Lone at “t”	Employed at month “t”	97.7	2.3	100.0
	Not employed at “t”	3.6	96.4	100.0

4.2 Employed mothers – those ‘at risk’ of leaving employment

Are the employed lone mothers and employed partnered mothers in jobs with different characteristics, such that we would expect different rates of leaving employment according to relationship status? Using the HILDA survey data at each wave, Appendix 3 (Table 9) provides a summary of some of the characteristics of, and perceptions about, jobs held by lone and couple mothers. Here we just comment on the two factors that were most different for lone and couple mothers: job contract and job tenure.

Looking first at job contract, while similar proportions are in permanent employment, lone mothers are more likely to be classified as casual, contract or fixed term. On the other hand, partnered mothers are more likely to be employed in their own business. For example, in 2007, 54% of lone and 55% of partnered employed mothers were in permanent jobs; 39% of lone and 29% of partnered employed mothers were in casual, contract or fixed term jobs; and 7% of lone and 16% of partnered employed mothers were employed in their own business. This higher rate of casual work of lone mothers may lead to their having a higher rate of exit from work than couple mothers.

Also, looking at job tenure, lone mothers were more likely than partnered mothers to have started their current job in the preceding 12 months (in 2007, 32% of lone and 20% of partnered employed mothers). This is likely to be related to the higher incidence of casual work among lone mothers, and again, suggests some instability in their employment.

Other characteristics examined in Appendix Table 2 were in some ways quite similar for lone and couple mothers – including their hours of work (lone mothers working slightly longer hours in most years) and gross wages (lone mothers earning slightly

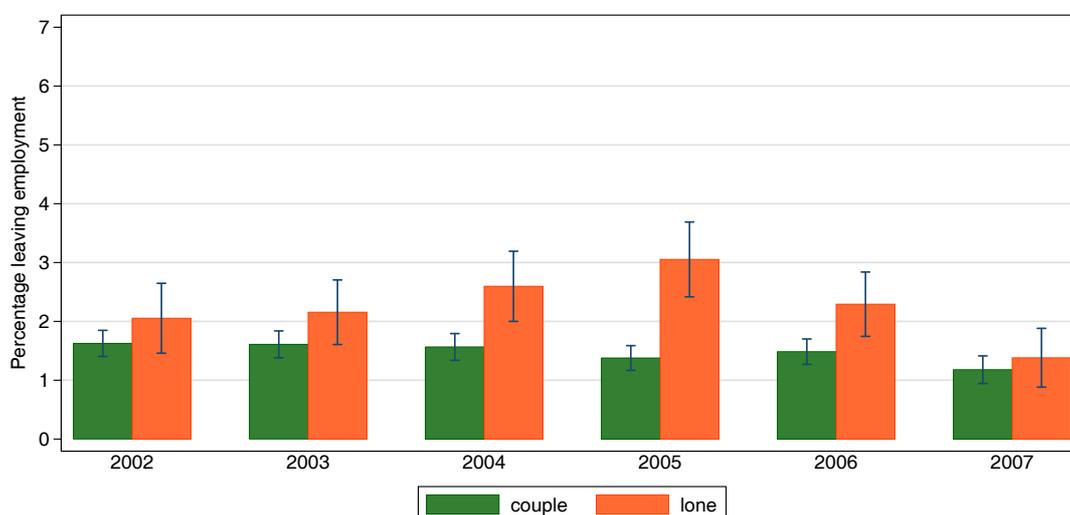
less). Overall job satisfaction (as a mean score) was similar for lone and couple mothers. A more detailed examination of these, and other characteristics, is warranted to further understand how jobs for lone and couple mothers compare.

4.3 Employed mothers leaving employment – bivariate results

In this section we focus on leaving employment – presenting differences in this rate for lone and couple mothers according to a range of other factors that have been identified as being important in explaining variation in mothers’ employment rates.

Table 4 showed that lone mothers are more likely to leave employment, if employed in the previous month, than partnered mothers. This is also shown in Figure 2, to be true across all years, although the differences are more apparent in some years than in others (in some years the difference between lone and couple mothers is not significant at the 95% confidence level).

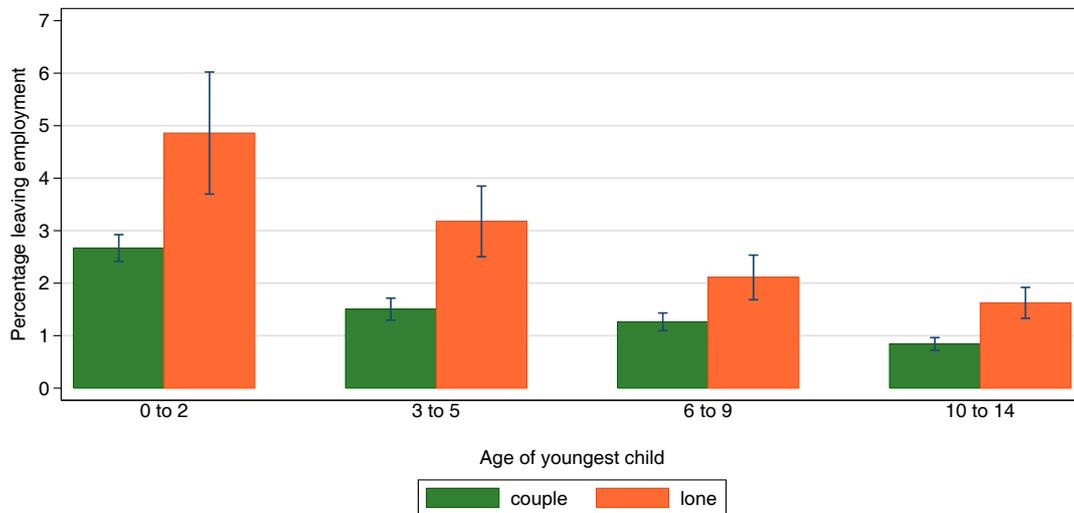
Figure 2 Likelihood of leaving employment by relationship status and year



We would expect mothers to have relatively high rates of leaving employment around the birth of a child, but because we have included only mothers, we don’t capture exits that occur prior to the first birth. Also, mothers who remain “employed”, because they are on a paid absence from work after a birth (e.g. paid maternity leave or holiday leave) will not be captured as an exit from employment. However, as unpaid maternity leave should be counted as “not employed”, moving from a period of paid to unpaid maternity leave should be captured as an exit from employment.

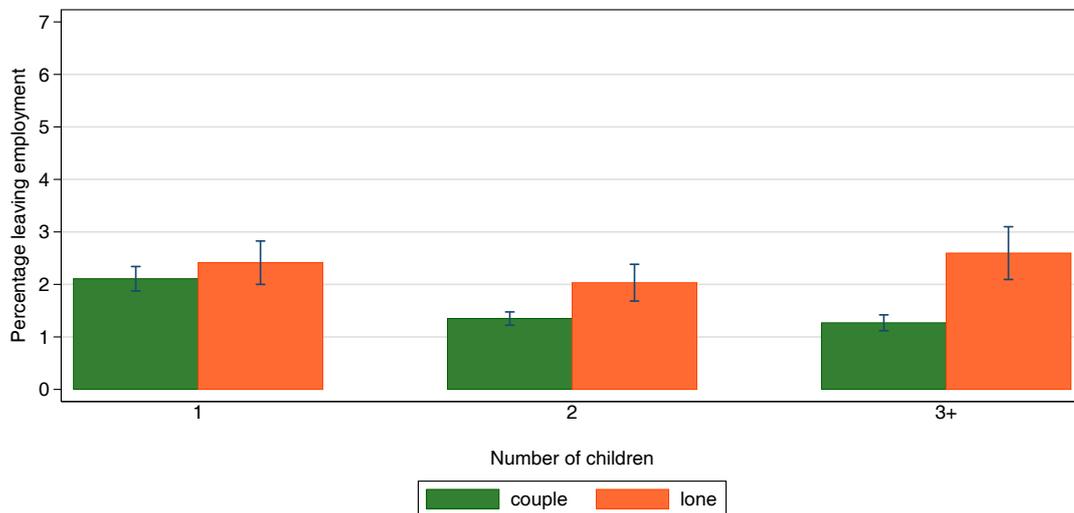
Figure 3 shows the likelihood of leaving employment is considerably higher for mothers of the youngest children, which may be related to movements out of paid leave. This is true for lone and couple mothers. Lone mothers were more likely to leave employment than couple mothers over all these child ages, but the gap is much larger for those with very young children. This may be due to differences in access to paid maternity leave at this time.

Figure 3 Likelihood of leaving employment, by age of youngest child and relationship status



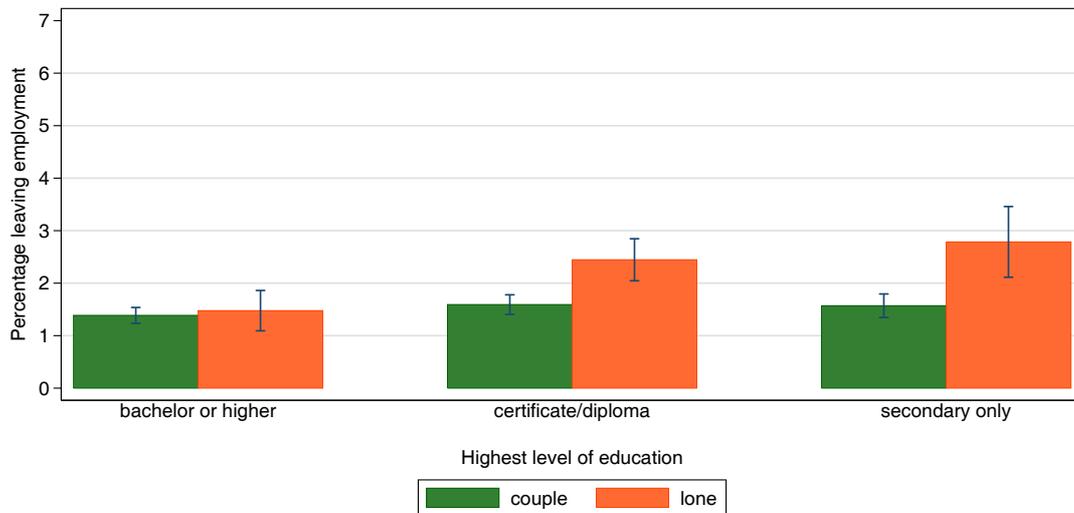
The number of children, on the other hand, does not make a significant difference to the likelihood of leaving employment (Figure 4). For families with 3 or more children, lone mothers are much more likely to exit employment than couple mothers. Lone mothers are also more likely to exit employment than couple mothers in one and two child families, but the differences between these groups of mothers aren't as great as in the larger families.

Figure 4 Likelihood of leaving employment, by number of children and relationship status



Looking at differences by level of education, overall, higher levels of educational attainment are associated with a lower likelihood of leaving employment (Figure 5). Comparing within education levels by relationship status, no differences between lone and couple higher educated mothers are apparent. However, for those with certificate/diploma qualifications or some secondary education only, lone mothers have a higher rate of exit from work than couple mothers.

Figure 5 Likelihood of leaving employment, by highest level of education achieved and relationship status



For couple mothers, those with poor self-reported health reported a higher likelihood of leaving employment, compared to those with good health. For lone mothers, however these differences according to health status were not statistically significant (Figure 6).

Figure 6 Likelihood of leaving employment, by health status and relationship status

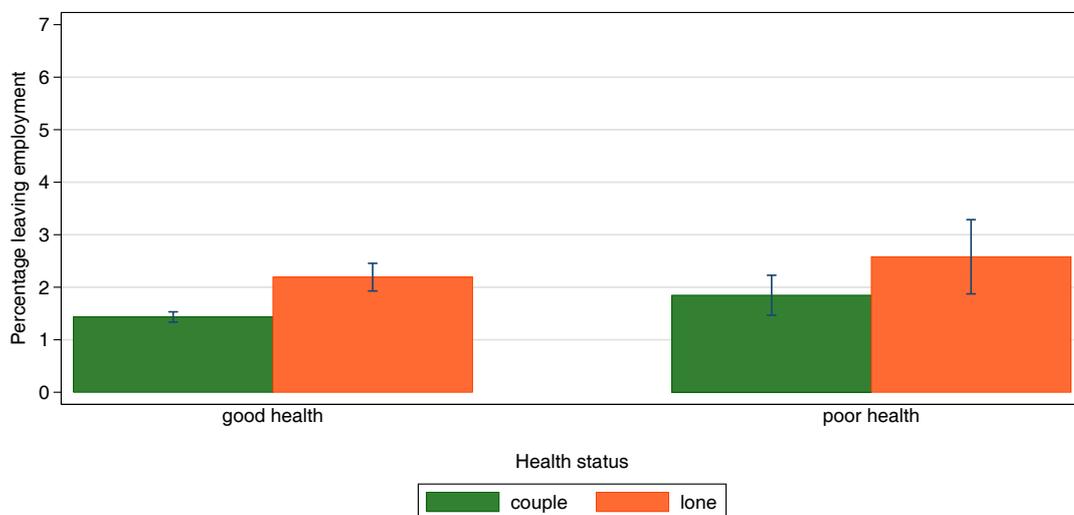
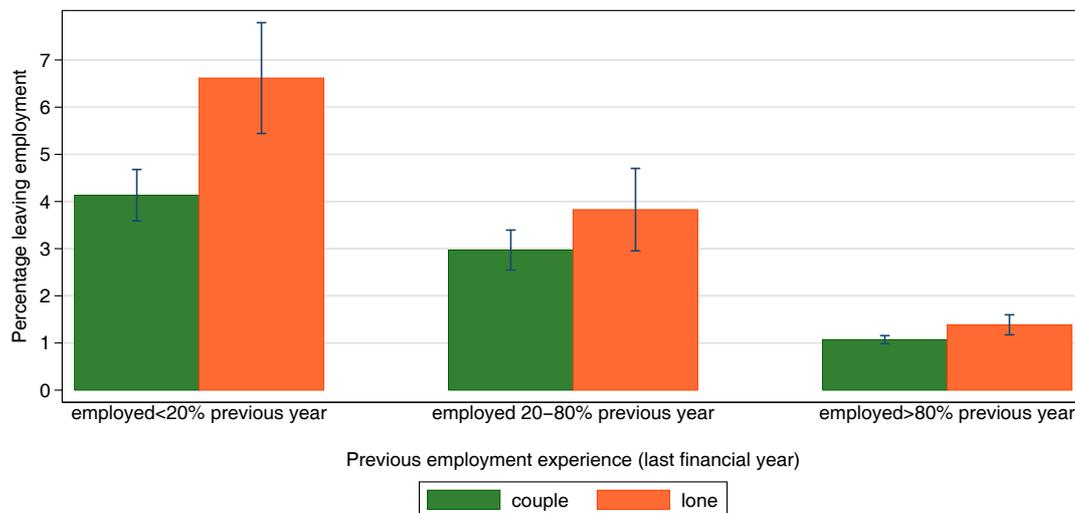


Figure 7 shows that there is a very strong relationship between prior employment experience and the likelihood of leaving employment, with very low transition rates for those who were employed for most or all of the previous financial year, but much larger transition rates for those who were employed for a lesser amount of time (or not employed at all). In each of these groups, differences between lone and couple mothers are apparent, especially in that lone mothers with little employment experience were more likely to leave employment than couple mothers with little employment experience.

Figure 7 Likelihood of leaving employment, by employment experience and relationship status



4.4 Employed mothers leaving employment – multivariate results

To explore these relationships between characteristics and exits from employment together, multivariate analyses were used to determine which factors remained significantly associated with a higher probability of exiting employment, when other variables were also taken into account (Table 6).

A high proportion of the model variance was explained by the person-level variance (29% in the model without employment experience and 16% once employment experience was taken into account). This variation will capture some of those personal characteristics that are difficult to observe – such as preferences for employment – as well as some more readily captured but not included in these data – such as possible effects of partner’s income in couple families.

The inclusion of employment history in the model, while it reduced the proportion of person-level variance, did not change the associations with other variables. Lone parenthood remained a significant explanatory variable, after the inclusion of this and other characteristics in the estimation.

Importantly, after taking into account all the background factors, a significant difference between lone and couple mothers remained evident. That is, the higher probability of leaving employment for lone mothers was not entirely related to different characteristics of lone and couple mothers. As we did not include information about the jobs held by lone and couple mothers in these analyses (since we did not have this information in the monthly data), some of these differences may be due to the higher rate of casual employment, and shorter job tenure, for lone mothers.

The multivariate analyses also confirm:

- Transitions out of employment are most likely for those with little or no employment experience (in the previous financial year), and those with moderate amounts of experience are also more likely to transition out than are those with high levels of employment experience;

- Exits from employment are more likely for mothers with younger children;
- Number of children does not make a significant difference to the likelihood of leaving employment;
- Younger mothers are more likely to leave employment;
- More highly educated mother are less likely to leave employment; and
- Mothers with poor self–reported health are more likely to leave employment.

Models were also estimated in which relationship status was interacted with these factors, to assess whether any factors had a stronger effect for one relationship group over the other, as seemed to be the case in some of the bivariate findings above. These interaction effects, however, were either not significant, or were very small in magnitude, so we have not reported them here.

Putting this together with the different characteristics of lone and couple mothers (Table 3), lone mothers' rate of exit from employment is likely to be greater than that of couple mothers because of their higher proportions being younger, having lower levels of education, having worse self–reported health and lower levels of employment experience. On the other hand, lone mothers are less likely than couple mothers to have very young children, which will have a depressing effect on the aggregate rate of exit from employment.

Table 6 Multivariate analyses of the likelihood of leaving employment, employed mothers of children aged under 15, pooled monthly data

	Model 1 – Random effects logit without “experience” (Odds ratio & 95% confidence interval)		Model 2 – Random effects logit with “experience” (Odds ratio & 95% confidence interval)	
Lone mother (reference = couple mother)	1.6***	(1.4, 2.0)	1.5***	(1.3, 1.7)
Percent employed previous financial year (reference=0 to under 20%)				
20 to under 80%			0.6***	(0.5, 0.8)
80 up to 100%			0.4***	(0.3, 0.4)
Age of youngest child (reference=0-2 years)				
3-5 years	0.6***	(0.5, 0.7)	0.6***	(0.5, 0.8)
6-9 years	0.5***	(0.4, 0.6)	0.6***	(0.5, 0.7)
10-15 years	0.3***	(0.2, 0.4)	0.4***	(0.3, 0.5)
Number of children (reference=1 child)				
2 children	0.9	(0.8, 1.1)	0.9	(0.8, 1.0)
3 or more children	1.0	(0.8, 1.2)	0.9	(0.7, 1.1)
Age of mother=15-29 years (reference=30 years or older)	1.9***	(1.5, 2.3)	1.7***	(1.4, 2.1)
Educational attainment (reference=bachelor degree or higher)				
Certificate/diploma	1.4***	(1.1, 1.7)	1.2**	(1.0, 1.5)
Secondary only	1.6***	(1.3, 2.0)	1.3***	(1.1, 1.6)
Self-reported health status = “fair” or “poor” (reference= “good” or better)	1.3**	(1.0, 1.6)	1.3**	(1.0, 1.6)
Year (reference=2007)				
2002	1.3*	(1.0, 1.6)	1.2*	(1.0, 1.6)
2003	1.3**	(1.1, 1.7)	1.3*	(1.0, 1.6)
2004	1.4***	(1.1, 1.7)	1.3**	(1.0, 1.6)
2005	1.3**	(1.0, 1.6)	1.2	(0.9, 1.5)
2006	1.2	(1.0, 1.5)	1.2	(0.9, 1.5)
Quarter (reference=Jan-Mar)				
Apr-Jun	1.0	(0.9, 1.2)	1.0	(0.8, 1.2)
Jul-Sep	1.7***	(1.4, 2.0)	1.6***	(1.4, 1.9)
Oct-Dec	1.7***	(1.4, 2.0)	1.7***	(1.4, 2.0)
Number of records	82,936		82,936	
Number of persons	2,280		2,280	
Person-level standard deviation	1.154		0.790	
Rho=proportion of total variance contributed by person-level variance	0.288		0.160	

Note: Model also included controls for missing health information and missing employment experience information.

* significant at 10% ** significant at 5% *** significant at 1%.

4.5 Not-employed mothers – those ‘at risk’ of entering employment

This section examines characteristics of mothers who are not employed, to see whether barriers to entering work may be different for lone and couple mothers. The data are presented in Appendix 3 (Table 10) , but we focus here just on few factors.

The majority of lone and couple not–employed mothers are not in the labour force, as opposed to unemployed. However, lone mothers are more likely than couple mothers to be unemployed (for example, of not-employed mothers in 2007, 20% of lone mothers and 8% of partnered mothers were unemployed). According to these data, then, lone mothers are more actively seeking work, and therefore–if successful in their job search–may be more likely to enter work.

Also, of those not in the labour force, somewhat more partnered mothers say they do not want a job than say they want a job while the opposite is true of lone mothers who, in most years, were more likely to say they want a job. In 2006 and 2007, this was not true, with lone mothers in these years more likely to say they did not want a job if they were not in the labour force. Of those not in the labour force, lone mothers were, in all years, more likely than partnered mothers to say they could start work in the next four weeks if a job was offered (e.g. 31% of partnered mothers and 49% of lone mothers not in the labour force in 2007). Again, these data suggest that not-employed lone mothers may be more likely to enter work than partnered mothers.

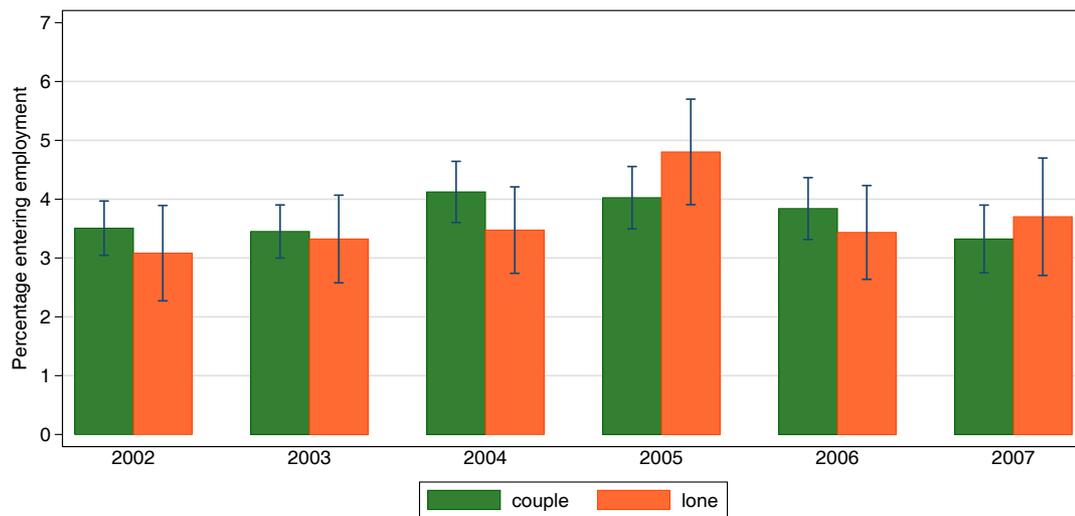
The majority of mothers who are not in the labour force say they are not looking for work because they prefer to look after their children (about two-thirds). Couple mothers were a little more likely than single mothers to give this reason for not looking for work (e.g. 66% of partnered mothers and 60% of lone mothers who were not in the labour force in 2007). Lone mothers appear to have more difficulties finding childcare (e.g. 4% of partnered mothers and 12% of lone mothers not in the labour force in 2007), and to be affected by their own illness, injury or disability (e.g. 12% of partnered mothers and 23% of lone mothers not in the labour force in 2007). Lone mothers, therefore, appear to be more likely to be affected by particular barriers (ill health, access to childcare) than couple mothers, which may adversely affect their rate of transition into employment.

This is a mixed picture, then, with lone mothers expressing more interest in being in employment, but at the same time, appearing to have more barriers to entering employment.

4.6 Not-employed mothers entering employment – bivariate results

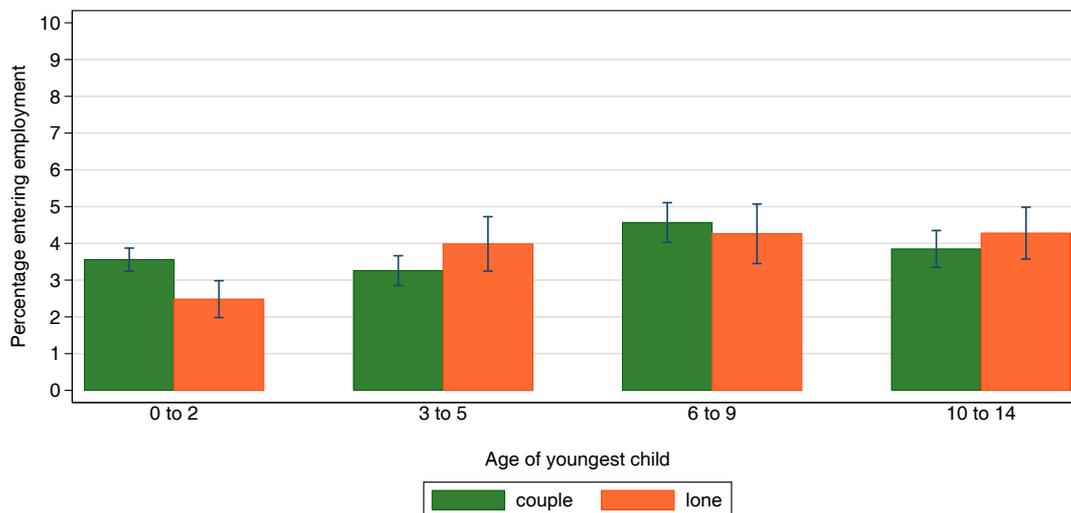
This section now turns to the likelihood of entering employment for those who are not employed, again making comparisons according to relationship status and other factors. In Table 4, differences between not employed lone and couple mothers in the likelihood of going into employment were not apparent. Figure 8 also shows no significant difference for any years, although during 2005, for lone mothers, the rate of moving into employment was higher than it was in earlier years.

Figure 8 Likelihood of entering employment, by relationship status and year



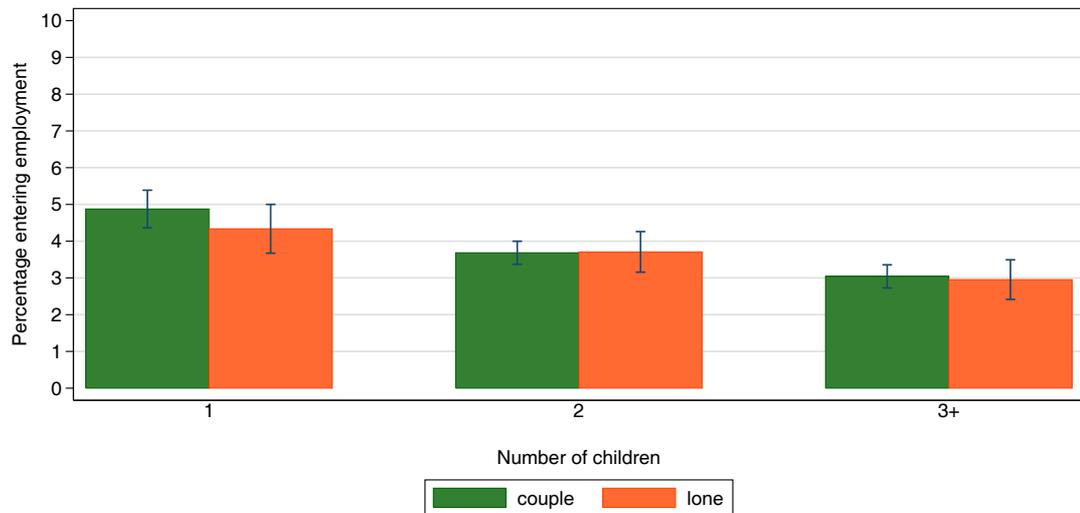
By age of youngest child, transitions into employment are least likely for lone mothers when they have a child aged under 3 years old. For lone mothers there is then no difference in the likelihood of entering employment according to age of children. For couple mothers, the likelihood of entering employment remains low when children are aged under 6 years old, after which time there is a higher likelihood of entering work. The difference between lone and couple mothers is significant for mothers of under 3-year olds, when lone mothers have a lower rate of entering work.

Figure 9 Likelihood of entering employment, by age of youngest child and relationship status



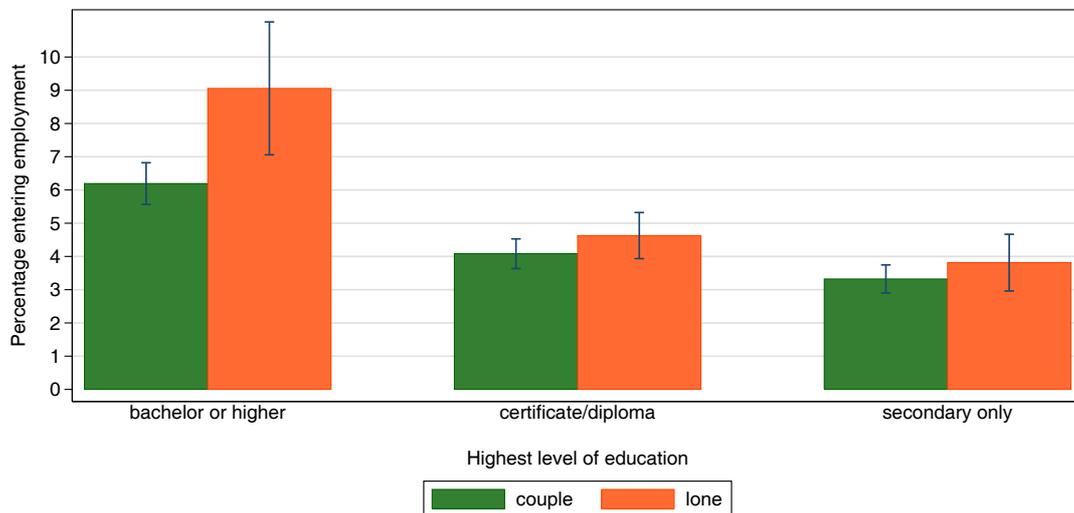
Generally, the likelihood of moving into employment is higher for mothers of single-child families, and lowest for larger families. There is no significant difference across the family size groups in the rate at which lone and couple mothers moved into employment.

Figure 10 Likelihood of entering employment, by number of children and relationship status



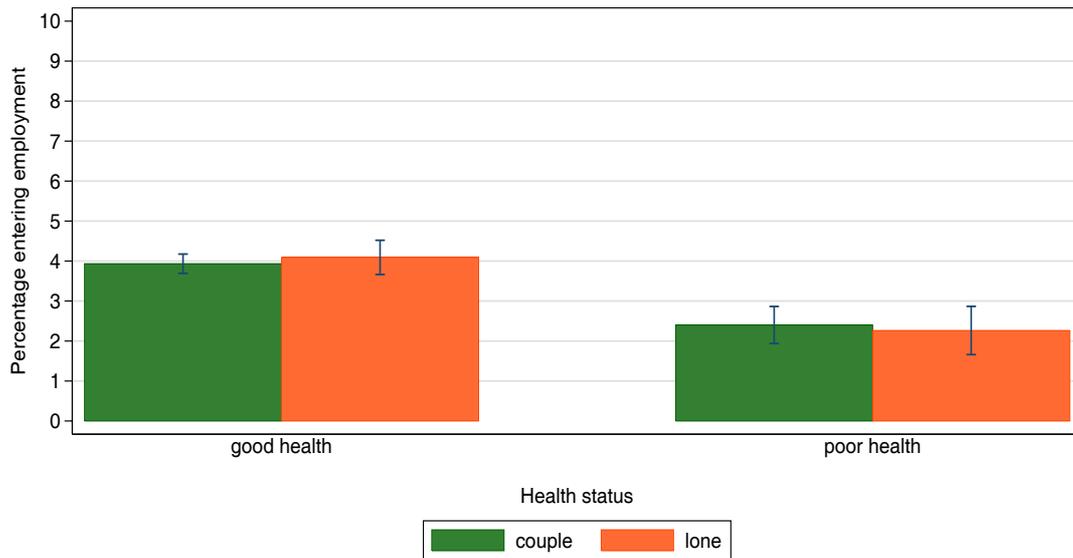
Level of education has a very strong association with the likelihood of moving into employment (Figure 11), particularly with regard to the distinction between those with and without tertiary qualifications. For lone mothers in particular, those with higher levels of education have a significantly higher rate of movement into employment compared to those with lower levels of education, and also compared to couple mothers with an equivalent level of education.

Figure 11 Likelihood of entering employment, by highest level of education and relationship status



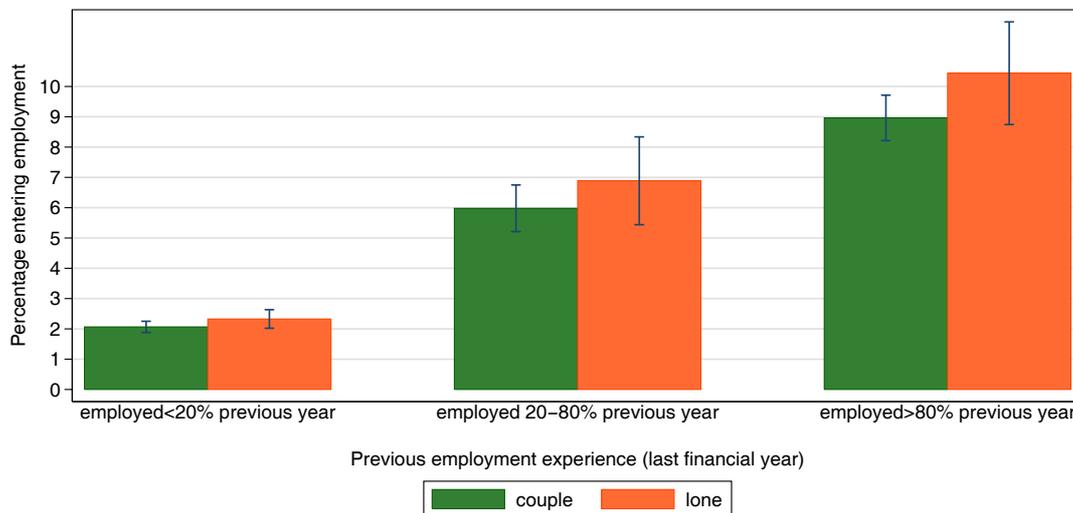
While mothers with poorer self-reported health were less likely to enter employment, if not employed, there were no significant differences between lone and couple mothers within these health status groups (Figure 12).

Figure 12 Likelihood of entering employment, by self-reported health status and relationship status



As with the transition out of employment, the transition into employment proved to be strongly associated with prior employment experience (Figure 13). Differences by relationship status were not apparent within any of these categories of employment experience, but overall those with no or low prior work experience (in the previous financial year) were much less likely to enter employment than those with more employment experience, and those who spent most or all of the previous financial year in employment were much more likely than others to enter employment.

Figure 13 Likelihood of entering employment, by employment experience and relationship status



4.7 Not-employed mothers entering employment – multivariate results

As with the transition out of employment, for the transition into employment, there was a significant amount of person-level variance in these models, confirming the need to take account of this with these data. The parameters of the models estimated with and without the measure of prior employment experience were again very

similar. Some relationship between prior work experience and year seem to exist, as the year coefficients were a little different once work experience was taken into account.

Consistent with bivariate findings above, overall, no significant differences between lone and couple mothers in the rate of entering employment were apparent. This is interesting, given the findings presented earlier, that lone mothers are more likely to be actively seeking work, and more likely to want a job and be ready to start work. These earlier findings also showed that lone mothers appear to have more barriers that may impede their take-up of employment, and the lack of difference in entrance rates to employment between lone and couple mothers therefore suggests that these barriers do indeed result in lone mothers having no greater take-up of employment despite their apparently stronger willingness or desire to work.

Several factors were found to explain variation in the rate of entering employment:

- Prior employment experience was very important, in the same way as was described in the bivariate results;
- Entering employment was least likely for mothers with younger children, and highest for those with children aged 6 to 9 or 10 to 15 years;
- Mothers of one child were more likely to enter employment than mothers with two or more children;
- More highly educated mother were more likely to enter employment; and
- Mothers with poor self-reported health were less likely to enter employment.

As with the multivariate analyses of leaving employment, interaction terms were tested to explore whether any particular factors had a stronger effect on the likelihood of entering employment for lone rather than couple mothers, but no significant interactions were apparent.

Table 7 Multivariate analyses of the likelihood of entering employment, not-employed mothers of children aged under 15, pooled monthly data

	Model 1 – Random effects logit without “experience” Odds ratio & 95% confidence interval		Model 2 – Random effects logit with “experience” Odds ratio & 95% confidence interval	
Lone mother (reference = couple mother)	0.90	(0.8, 1.1)	1.0	(0.9, 1.2)
Percent employed previous financial year (reference=0 to under 20%)				
20 to under 80%			2.1***	(1.8, 2.6)
80 up to 100%			3.1***	(2.6, 3.6)
Age of youngest child (reference=0-2 years)				
3-5 years	1.5***	(1.3, 1.9)	1.7***	(1.4, 2.0)
6-9 years	2.4***	(1.9, 3.0)	2.3***	(1.9, 2.8)
10-15 years	2.2***	(1.7, 2.8)	2.0***	(1.6, 2.4)
Number of children (reference=1 child)				
2 children	0.7***	(0.6, 0.9)	0.9*	(0.7, 1.0)
3 or more children	0.6***	(0.5, 0.8)	0.8**	(0.6, 0.9)
Age of mother=15-29 years (reference=30 years or older)	1.0	(0.8, 1.3)	1.1	(0.9, 1.3)
Educational attainment (reference=bachelor degree or higher)				
Certificate/diploma	0.5***	(0.4, 0.7)	0.6***	(0.5, 0.8)
Secondary only	0.3***	(0.2, 0.3)	0.4***	(0.3, 0.5)
Self-reported health status = ‘fair’ or ‘poor’ (reference= ‘good’ or better)	0.6***	(0.5, 0.8)	0.6***	(0.5, 0.8)
Year (reference=2007)				
2002	0.6***	(0.5, 0.8)	0.8	(0.7, 1.1)
2003	0.8**	(0.6, 1.0)	0.9	(0.7, 1.2)
2004	1.0	(0.8, 1.2)	1.1	(0.9, 1.4)
2005	1.2	(1.0, 1.5)	1.3**	(1.0, 1.5)
2006	1.1	(0.9, 1.4)	1.1	(0.9, 1.4)
Quarter (reference=Jan-Mar)				
Apr-Jun	0.8***	(0.7, 0.9)	0.8***	(0.7, 0.9)
Jul-Sep	1.6***	(1.3, 1.8)	1.4***	(1.2, 1.6)
Oct-Dec	1.0	(0.9, 1.2)	1.0	(0.8, 1.1)
Number of records	44,012		44,012	
Number of persons	1,733		1,733	
Person-level standard deviation	1.379		0.859	
Rho=proportion of total variance contributed by person-level variance	0.366		0.183	

Note: Model also included controls for missing health information and missing employment experience information.

* significant at 10% ** significant at 5% *** significant at 1%.

5 Concluding comments

This paper set out to identify differences between lone and couple mothers in their likelihood of entering and exiting employment. In accordance with past research, results show that lone mothers were more likely to leave employment than couple mothers, however, they were no less likely to enter employment.

These findings support Evans et al.'s (2004) argument that to increase employment rates amongst lone mothers, policy should not only focus on increasing the number of lone mothers entering employment but also on improving employment retention. Whilst Evans et al. were reflecting on UK policy approaches, their argument also seems valid in the Australian context. Providing continued support for lone mothers after they have entered employment, to improve their ability to stay in employment, may be an effective way of improving their overall employment rates. Further, it could be said that more effort should be given to ensuring that moves into employment are into higher "quality" (pay and/or conditions) jobs, which might provide for a more stable labour market experience (Scutella, 2006). This is accentuated by the fact that lone mothers are more likely than partnered mothers to be employed in casual, contract or fixed term jobs, which may not readily lead on to a strong labour experience.

While this study found no significant difference in the transition rate into employment for lone and couple mothers, it is important that government policy continue to encourage mothers to make this transition, such that lone mothers' transition rate into employment does not fall behind that of couple mothers. While the lower employment rate of lone compared to couple mothers will be in part because of lone mothers' more frequent movement out of employment, to address this gap, further efforts may be required to enable and support lone mothers to increase their transition into employment. This may require a further understanding of what are the barriers that lone and couple mothers face to entering employment. The issues appear to be different for lone and couple mothers, as lone mothers are more likely to be unemployed (indicating active job search), and to indicate they want to work and are available to start work. Yet they are not more likely to find employment, which may be related to their lower education levels and higher probability of having health problems, as well as other differences in characteristics that we have not considered here.

The current study explored mothers' characteristics other than relationship status. The different rate of exit from work for lone and couple mothers was not entirely due to their having different characteristics, although several factors, in particular education levels, previous work experience and health status, would contribute to a higher exit rate for lone mothers.

While no differences in entrance rates were apparent for lone and couple mothers, there were differences according to prior work experience, education and health status—those with less recent work experience, with lower education and poorer health were less likely to enter work. This would have a greater effect on lone mothers, as they are more likely to have these characteristics. However, ages and numbers of children also make a difference, and here it is partnered mothers most likely to be

affected, as they are more likely to have larger families and younger children – characteristics associated with a lower likelihood of entering employment.

This study found that those with lower levels of education were more likely to leave employment and less likely to enter employment. Education, however, may be acting in part as a proxy for factors relating to job quality and income, since these variables were not included in the analyses. Being in poorer quality jobs, which are less secure and have poorer access to family friendly work practices, is likely to negatively impact on mothers' abilities to remain in employment. Not having access to family-friendly work practices may in itself have a greater impact on lone mothers' ability to continue working as compared to couple mothers' as they do not have a partner to share caring responsibilities with.

In addition, those who are less educated are likely to earn less, and thus may be more likely to leave employment because their financial gains from employment are likely to be relatively low. This is especially the case for those lone mothers eligible for income support if not employed, who may feel that they are not much better off in paid work. Therefore improving educational opportunities for lone mothers as well as improving job quality in sectors commonly occupied by less educated mothers, including improving the financial return from working (for example, in-work benefits or higher wages), could reduce the rate at which lone mothers leave employment and increase the likelihood of entering employment.

Another key variable in this analysis was previous work experience. Consistent with the economics literature, the study found that past work experience strongly predicts mothers' employment transitions. From a policy perspective, this only strengthens the argument that women need to be supported and encouraged to remain connected to the labour market, such that their employment transitions are not adversely affected by their past experience. While this analysis has focused on mothers—some with young children, or children under school-age—who may wish to remain at home for some time to care for their children, it is still useful to be mindful of the affects of an absence from work on future labour market opportunities.

This paper has some limitations. In aiming to keep the multivariate analyses fairly simple, several key variables have not been incorporated; in particular we have not included potential wage, or income from other sources (such as partner's income). Given the range of information in HILDA on job and family characteristics, it may also be possible to take into account a broader range of factors than have been included here, such as housing costs, welfare receipt status/history and job characteristics. We also recognise that more sophisticated methods of multivariate analyses may be more appropriate for study of these transitions than has been presented here.

Also, these monthly employment data can be used to explore transitions in ways other than those presented here. For example, the types of employment transitions mothers are making can be examined in more detail, such as separating the not-employed into unemployed and not in the labour force. Men's employment transitions could also be considered, or transitions at different life cycle stages analysed. Also, more detailed analyses can be carried out on employment transitions both around the birth of a child and in the period before and after separation and re-partnering occurs. These ideas will be explored further.

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Appendix 1. Calendar data across waves

Table 8 Calendar information, mothers with children aged under 15 years, Waves 1–7

		Wave 1 (2001)	Wave 2 (2002)	Wave 3 (2003)	Wave 4 (2004)	Wave 5 (2005)	Wave 6 (2006)	Wave 7 (2007)
Number of observations	N	2363	2114	2047	1997	2012	1972	1956
Employed	%	58%	60%	60%	62%	65%	66%	66%
				<i>At survey date</i>				
				<i>In last financial year</i>				
Always employed	%	50%	53%	53%	55%	54%	57%	58%
Some of year employed	%	16%	14%	15%	15%	18%	16%	15%
At no time employed	%	34%	33%	32%	30%	28%	27%	27%
Percentage of the year employed	Mean	53	55	55	57	58	60	60
Percentage of the year employed, of those employed at W1	Mean	90	91	92	92	90	91	92

Appendix 2. Derivation of monthly relationship status

To measure relationship status, response to questions about when relationships began or ended were used. The structure of these questions varied slightly across waves. In Wave 1 respondents were asked how many times they had been legally married and the year each of these marriages took place. For the most recent one they were also asked for the month. They were also asked if they lived with their spouse before getting married and how long they were living together. In addition they were asked if their marriage had ended and if so, when. Similar questions were asked about de-facto relationships and when they had begun and ended. This information was used to derive a variable indicating what the respondent's relationship status was likely to have been on July 1st 2000. Additional variables were developed to indicate what the relationship status would have been for each calendar time period up until the date of the first interview. Similar data on the dates at which respondents began or ended marital or de-facto relationships from each of the subsequent waves was used to firstly create variables to flag changes in relationship status and then to develop indicators of respondents' relationship status at each of the calendar time periods.

A limitation of the method by which the relationship status information was collected in the HILDA survey is that there were limits to the number of relationships for which start and end dates were provided. For example in Wave 1, if a respondent had had more than one de-facto relationship prior to their current one, they were only asked the start date and duration for the first such relationship. Therefore if the additional de-facto relationships occurred after July 1st 2000, they would not have been taken into account in the indicator of relationship status used in the current study.⁵ In the subsequent waves respondents were only asked to provide dates and duration for the most recent relationship and the one before the most recent. These limitations to the number of relationships reported are not likely to heavily impact on the results of the current study as only a small proportion of respondents had multiple live-in relationships in each wave. However, it might affect the results if a movement into or out of a relationship that has not been able to be taken into account results in movement into or out of employment.

⁵ 398 respondents reported having 2 or more non-marital live-in relationships

Appendix 3. Characteristics of employed and not-employed mothers

Table 9 Employed lone and couple mothers with children aged under 15, selected employment characteristics

	2001		2002		2003		2004		2005		2006		2007	
	couple	lone												
Permanent job	46	52	49	50	52	50	53	57	52	58	51	58	55	54
Own business	20	5	20	6	18	8	18	6	18	8	17	7	16	7
Casual, contract, fixed term	34	43	31	45	30	42	29	37	30	34	31	35	29	39
Job tenure (years, mean)	5.5	4.4	5.6	4.1	5.7	4.7	5.4	4.9	5.5	4.7	5.5	4.9	5.6	4.5
Less than 1 year job tenure (%)	19	25	19	29	20	26	21	22	21	29	21	30	20	32
Hours per week in all jobs (mean)	27.4	27.6	28.0	28.1	27.8	29.4	27.9	29.3	27.4	29.5	27.7	29.0	28.5	30.7
Occupational status scale (mean of scale 1 to 100)	51.5	47.9	52.3	50.9	52.8	50.9	53.7	52.6	53.7	49.2	52.7	49.0	53.4	48.7
Per cent chance of losing job in next 12 months (mean, not asked if owns own business)	12.9	13.8	8.8	9.2	9.3	8.7	9.6	9.0	8.1	10.2	8.7	10.1	7.7	8.1
Per cent chance of vol leaving job in next 12 months (mean, not asked if owns own business)	16.0	25.1	17.2	20.6	18.3	22.0	17.4	17.0	18.1	19.0	19.4	23.7	17.5	17.5
Overall job satisfaction (mean of scale 1 to 10)	7.9	7.7	7.7	7.6	7.7	7.8	7.7	7.6	7.7	7.5	7.8	7.3	7.8	7.9
Receives government support (%)	9	60	7	58	7	55	7	53	8	53	8	56	8	54
Gross wages / salary (mean \$ per week)	455	425	466	450	479	500	499	526	538	583	586	566	644	638

Table 10 Not-employed lone and couple mothers with children aged under 15, selected employment characteristics

	2001		2002		2003		2004		2005		2006		2007	
	couple	lone												
Unemployed (%)	7	10	8	16	6	15	6	16	6	14	6	15	8	20
Not in the labour force (NILF) (%)	93	90	92	84	94	85	94	84	94	86	94	85	92	80
All not-employed														
Could work if offered (%)	45	61	39	57	36	57	33	54	33	57	33	53	31	49
Minimum hourly wage would accept (mean \$)	15.5	13.3	15.2	13.6	16.3	13.9	16.2	14.8	17.6	15.2	17.3	17.0	19.5	17.7
Hours per week prefer to work at that wage rate (mean)	24.3	26.5	23.3	25.7	23.5	24.0	22.4	24.9	22.5	24.7	21.0	24.9	21.4	21.2
Not in the labour force -														
Want a job (%)	44	65	36	51	31	58	29	54	32	54	28	48	27	39
Maybe (%)	9	6	6	6	6	6	7	5	8	6	8	8	8	3
Don't want a job (%)	47	28	57	43	62	36	63	40	60	40	65	44	65	57
Selected reasons not looking for work (NILF)														
Prefers to look after children	68	65	75	63	66	60	74	61	65	63	68	65	66	60
Difficulties in finding child care									5	10	7	16	4	12
Waiting until youngest child starts pre-school/primary school									8	9	12	11	9	12
Other childcare reason	18	25	12	19	17	15	11	20	4	6	6	4	7	2
Own illness, injury or disability	4	12	6	15	6	9	10	7	9	11	9	19	12	23
Ill health of someone other than self/other family re	6	6	6	9	4	10	8	7	8	9	9	6	7	12
Studying/returning to studies	7	12	9	13	8	18	4	15	4	8	5	12	6	10
Pregnancy/Maternity leave	7	7	5	3	9	5	4	3	6	3	6	1	8	2