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**The Determinants of Employment for Australian Mothers –
A Further Analysis of Lone and Coupled Mothers**

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Abstract

Building on previous work published by the Institute (Gray, Qu, de Vaus and Millward 2002), this paper explores the determinants of employment for lone and coupled Australian mothers. The analysis is based on the Family and Work Decisions (FAWD) survey, conducted by the Australian Institute of Family Studies in late 2002. This is a survey of 2,405 mothers (approximately half coupled and half single) that looks at a wide range of reasons as to why mothers with dependent children decide whether or not to participate in the paid labour market. The FAWD survey is unique in that it allows us to consider the relative importance of financial, social and psychological factors in the labour force participation decision. It is also unique because of the large sample of lone mothers from whom information was collected, thus allowing statistically reliable estimates to be made about this specific group.

Results from the analysis confirm those of earlier studies that the employment rates of lone and couple mothers are substantially reduced when they have children to care for, and that the impact is larger the younger are the children. Also consistent with earlier studies is the finding that lower levels of educational, a poor grasp of English or basic mathematics and renting or owning your own home (rather than purchasing) all reduce the probability that mothers will be in paid employment.

Where this study expands our understanding is in relation to mothers' attitudes about a career, their attitudes about the effects of maternal employment on children's development and well-being, and the impact of long-term health problems within the family. Mothers who were more career oriented were much more likely to be in employment than those who were not. As well, those who saw working mothers as a positive role model for their children or who did not feel their children were disadvantaged by having a working mother, also had a higher probability of being in employment. Of course, the direction of this association has not been established. And mothers who had a long-term health problem or who had to care for a family member who had a long-term health problem or disability were much less likely to be employed.

Importantly, the study found that for each of these determinants on the probability of employment, the impact on lone mothers was larger than that for couple mothers.

The Determinants of Employment for Australian Mothers – A Further Analysis of Lone and Coupled Mothers

Introduction

Researchers and policy makers have long taken an interest in what influences the capacity and willingness of individuals to work. With the dramatic increase in female labour market participation since the 1970s, much of that interest has centered on women and in particular, mothers. And with the ageing of the population and the implications this has for future labour supply growth, policy makers are increasingly focussing their attention on appropriate ways of increasing (further) the labour market participation of mothers, while at the same time being cognisant of the caring needs of children.

Policy makers have also been particularly concerned with increasing the labour market participation of lone mothers. This is partly because lone-parent families (the vast majority of which are lone mother families) are a significant segment of the jobless households in Australia: in recent years the numbers of jobless households have been increasing substantially. The focus on the labour market participation of lone mothers is also part of the shift in social security policy from one of passive welfare to one of active participation as a way of reducing poverty and the probability of long-term dependency on income support (McClure 2000). Part of the policy response has been to try and reduce the disincentives to work that result from the interaction of the Australian tax and income support systems, particularly for those on non-working and low-income families. Due to the way this interaction operates, it is often non-working mothers (particularly couple mothers) in low-income families that face the largest disincentives (Apps 2004).

The decision to participate in the labour market has been extensively studied by researchers from a range of academic disciplines. Economists have tended to focus on narrowly defined economic aspects. Sociology has offered explanations that focus on social roles and supports, family forms and gender relations and the role of paid employment in providing social status. Psychology focuses on differences in beliefs about what experiences are most important to children, their views about who should be responsible for children's care and upbringing, attitudes toward work and family roles and issues of individual fulfilment or identity.

There are many other factors besides the disincentive effects of the income support system that are expected to be important in mothers' employment decisions, including: underlying attitudes and beliefs about how best to combine parenting and paid work; perceptions and concerns about the needs and wellbeing of children and other family members; and the expectations, support and approval provided by partners and other people, which are often locally and culturally variable (Barlow and Duncan 2000; Duncan and Edwards 1999; Hakim 1998; Jordan et al 1992; Swinbourne et al 2001). Sociological and psychological models of mothers' employment decisions tend to emphasise the role of these non-financial factors in mothers' employment decisions. Some point to a 'hierarchy of decision-making' factors whereby financial incentives are only taken into account once other non-financial factors and concerns are considered (Fagan 2001). Others point to particular sub-groups of mothers for whom financial incentives do not feature at all – that is, they will choose to work or not to work regardless of the financial returns (Hakim 1998).

While in reality financial and non-financial factors are likely to interact in complex ways in mothers' employment decisions, and to vary for mothers in different circumstances; there is

virtually no Australian research that has combined models and explanations from different academic disciplines in order to assess the relative importance of financial, social and psychological factors in the labour force participation decision, and how they interact. This paper is a first step in attempting to fill this gap.

Aim and structure of the paper

This paper uses data from the Family and Work Decisions (FAWD) survey conducted by the Australian Institute of Family Studies in late 2002 to estimate statistical models of the determinants of the probability of employment of lone and couple mothers. Building on previous work published by the Australian Institute of Family Studies (Gray, Qu, de Vaus & Millward 2002), the purpose of this paper is to test an expanded model of mothers' employment determination that includes economic, sociological and psychological factors and to see whether these factors impact on lone and couple mothers in a similar or differential way.

The next section describes the employment rates of lone and couple mothers and how they vary with the age of children. Then the theoretical and empirical issues involved in analysing the probability of employment are presented. The next section describes the extent to which various factors affect the probability of employment for lone and couple mothers, before the final section provides a summary of the results.

Employment rates of lone and couple mothers

It is widely understood that the employment rates of lone and couple mothers vary considerably with the age of their children and particularly the age of the youngest child. Consequently, age of youngest child is one of the key determinants in any analysis of maternal employment. Previous studies have also shown that lone mothers have tended to have lower rates of employment compared to couple mothers and this is often assumed to be because of greater difficulties with childcare and/or because of a greater disincentive effect stemming from the Australian income support system for lone mothers. As a first step in understanding the differences between lone and couple mothers, Gray et al. (2002) were able to show that about a third of the employment gap between lone and couple mothers was simply due to differences in their characteristics such as lower overall levels of educational attainment.

Data from both the ABS Labour Force Survey (June 2002) and the second wave of HILDA (collected in 2002), clearly show this pattern of increasing employment rates for mothers as the youngest child moves from preschool age to primary school age and then to high school age and beyond (see Table 1). Although the actual figures differ marginally, both data sources also show that lone mothers have lower employment rates than couple mothers overall and for each category of youngest child. Differences are primarily due to differing sample sizes and data collection techniques. Clearly though, as the youngest child gets older, the employment rates of lone mothers increase more rapidly and by the time the child is 16 or older are approaching the rate of couple mothers.

Table 1 Employment rates of lone and couple mothers by age of youngest child, 2002

	HILDA 2002		LFS June 2002	
	Lone mother	Couple mother	Lone mother	Couple mother
Age of youngest child	%	%	%	%
0-4 years	29.1	48.8	30.0	48.7
5-9 years	60.8	70.9	48.8	67.1
10-14 years	72.4	76.2	56.1	75.6
15-24 years	67.1	76.9	69.9	74.8
Total	54.9	64.1	47.9	62.9

Source: HILDA Wave 2 (2002) Release 3.0; ABS *Labour Force Survey, June2002* (Cat no 6291.0.55.001)

Modelling the determinants of employment

In this section we describe the data used in the estimates of the determinants of employment (or more correctly the probability of employment). The conceptual framework that underpins the modelling is described, as is the empirical model.

Data

The data used to model the probability of employment comes from the Family and Work Decisions (FAWD) study, conducted by the Australian Institute of Family Studies, with assistance of the federal Department of Family and Community Services. The FAWD study was primarily conducted to collect information on factors that influence the labour supply decisions of lone and couple mothers. The survey collected information from 2,405 mothers of whom approximately half were lone mothers and half couple mothers. The sample was randomly selected from the Centrelink records of female Family Tax Benefit recipients. The interviews were conducted using Computer Assisted Telephone Interviewing (CATI), with 2405 mothers responding to the survey, 1160 of who reported being lone mothers and 1245 of who reported being couple mothers.

Whilst the FAWD data is representative of all lone and couple mothers in receipt of Family Tax Benefit, it is not representative of all mothers of working age, particularly all couple mothers. The lone mother sample is likely to be representative of nearly all lone mothers, because all lone mothers are eligible to receive Family Tax Benefit B, irrespective of the amount of income that may receive from being employed. This is because Family Tax Benefit B is only means tested on the second income in a family and for a lone mother there is no second income. For couple mothers, however, the second income is nearly always the mother's and she does not have to be working many hours per week before Family Tax Benefit B is completely withdrawn. Therefore the majority of couple mothers in the FAWD sample are from families which are still eligible for Family Tax Benefit A, which is assessed on the family's joint income. Consequently, the couple mother sample is predominantly made up of couple mothers who do not work or work very little (irrespective of their partner's income, because they still receive Family Tax Benefit B) and working couple mothers from low income families. In other words, working couple mothers from middle and higher income families are not represented in the sample.

This means that the employment rates of couple mothers in the FAWD sample are lower than in the general population. This can be clearly seen from the maternal employment rates

shown in Table 2, which show the employment rates of lone and couple mothers in the FAWD data in age groups that are consistent with the data presented for HILDA and the Labour Force Survey in Table 1. In the FAWD data, the overall employment rate of lone mothers is slightly higher than the rate found from other data sources, primarily because of the high employment rate when children reach 15 years old. But the employment rate for couple mothers is substantially lower than in the general population, for the reasons mentioned already. Also, lone mothers only have lower rates of employment in the FAWD data compared to couple mothers when children are of preschool age.

As a consequence, the findings in this paper are only applicable to mothers in receipt of government support, rather than the population of mothers generally (although for lone mothers the two populations are very similar). From a policy perspective, this is not necessarily a problem, as it is the recipients of government support who are the main focus of policy in this area.

Table 2 Employment rates of lone and couple mothers by age of youngest child, FAWD 2002

Age of youngest child	Lone mother %	Couple mother %	Total %
0-4 years	35.3	46.5	42.0
5-9 years	55.5	58.3	56.9
10-14 years	65.2	62.6	63.9
15-24 years	83.0	67.8	75.5
Total	58.9	57.5	58.2

Source: Family and Work Decisions survey, 2002 (AIFS)

Conceptual framework and empirical model

This paper uses the work of Gray et al. (2002) as a starting point for updating and expanding a model of the determinants of mothers' employment. Mainly as a result of the limitations in data they were using (being the 1996 census), Gray et al. (2002) present a fairly standard economic model of the determinants of mothers' employment in which both labour supply and labour demand variables are combined in a reduced form model. Although they acknowledge that the labour decision by mothers "is highly complex and involves many factors", they are unable to include many of the factors of interest because of a lack of information in the data they use.

By using the FAWD study instead, the standard economic and human capital variables are able to be supplemented by other factors from the sociology and psychology literature that are also considered influential in a mother's decision to seek paid employment or not. For example, as well as any financial incentives that paid work may offer, mothers preferences for employment may also take account of the intrinsic value of work that comes from having a career. At the same time, attitudes about the impact of maternal employment on the development and well-being of children and mothers' perceptions about their ability to undertake paid employment (in a physical and psychological sense) are likely to weigh heavily on the minds of mothers both in coming to this decision and then justifying their decision. The FAWD data is well placed to consider all these issues and the actual concepts in the model are discussed in detail below.

The model of employment outcomes can be expressed in a general form as:

$$E_i^* = X_i\beta + \varepsilon_i \quad (1)$$

where E_i^* is a latent (unobserved) variable that captures the propensity towards employment of individual i , X is a row vector of observed factors, β is a column vector of coefficients to be estimated and ε is a stochastic error term. Two observable outcomes are derived from E_i^* with reference to an arbitrary threshold of zero. Thus, the individual is held to be employed ($U = 1$) where E_i^* exceeds zero and not employed ($U = 0$) otherwise. This observed indicator variable (U) becomes the dependent variable in the analysis.

Given the binary nature of the dependent variable, a logit or probit model is appropriate. The logit model is used in this paper. With this model, the natural logarithm of the odds ratio of the probability of employment (E) to the probability of non-employment ($1-E$), $\log[E/(1-E)]$, is expressed as a linear combination of the explanatory variables, namely:

$$\log\left(\frac{E}{1-E}\right) = X_i\beta + \varepsilon_i \quad (2)$$

The specification of the logit model includes a number of variables which economic, psychology and sociological theory suggests will be related to employment status or which previous empirical studies have shown to be important determinants. While the details of the construction of the variables can be found in Appendix A, the remainder of this section provides a rationale for the empirical specification used. And given that this model builds on the model used in Gray et al. (2002), any variation from the variables used in that model are identified. The omitted categories of the respective variables are also listed in Appendix A with summary statistics being provided in Appendix B.

The age of the mother is included to capture any life-cycle effects and as a measure of potential labour market experience. A better measure of labour market experience would be length of time in the labour market since leaving school but this was not available. The square of age is also included to capture any non-linear relationship between age and the probability of employment.

Economic theory suggests that labour market success is strongly linked to individual productivity. And while this is a difficult concept to capture, is traditionally measured by the highest level of education attained. Rather than use the age at which mothers left school (which is what the census data captures), here we use the actual year of school that was completed, or in the case of post-secondary qualifications, the highest qualification obtained. Due to small numbers of respondents in some education categories, diploma, degree and post-graduate qualifications are combined. This is the omitted category in the regressions. A second category is those mothers with vocational or trade qualifications. Those with no post-secondary qualifications were categorised into those that left school after Year 12, those who completed Years 10 or 11, and those who completed less than Year 10.

Like Gray et al. (2002), this paper uses a number of variables to capture the impact of having child on the probability of employment for mothers. Firstly, the paper uses a set of variables that identify the age of the youngest child; however, the variables used here are slightly

different from other studies because in the FAWD study we are able to identify whether 4 and 5 year old children have started school or not. Therefore, rather than differentiating between children who are less than four years old and those who are between 5 and 11 years old etc, our categories are: children not yet at school (preschool age); those at school and up to age 11 (primary school age); those 12-15 years old and those 16-24 years old (provided the child was still a dependent because they were a student). Secondly, like Gray et al. (2002) we model the impact of having multiple children with a series of variables that identify those mothers with two or more preschool children, those with two or more primary school children and those with four or more children of any age.

The financial commitments of a family are likely to be a strong motivating factor on the decision of mothers to work or not. To capture this, we include a set of dummy variables that indicate whether the family owns its house outright, is purchasing its house, is renting or has some other form of house tenure (such as crisis housing or rent free accommodation). We also include a measure of financial stress on the household by identifying those mothers who indicated they could readily raise \$2000 in a week in an emergency (and therefore were not financially stressed).

The availability of suitable work will be important in determining the likelihood of mothers in employment. Determining the suitability of jobs for an individual is problematic, but we can attempt to capture the general level of labour demand using geographic variables. A mother's location is divided into four categories as specified by the ABS regional indicators: part of a major city; inner regional; outer regional; and remote and very remote (which have been combined due to small numbers of observations). The availability of jobs is also potentially captured by the ABS SEIFA index of disadvantage, which was attached at a postcode level. Lower levels of this index indicate greater levels of disadvantage. A variable indicating a mother being of Aboriginal or Torres Strait Islander origin was also included because of the known lower employment rates of indigenous groups (Hunter and Gray 1998).

English proficiency and basic mathematical skills are strongly related to labour market opportunities and therefore employment rates. Included in the model are two dummy variables where mothers indicated they had good or very good (as opposed to satisfactory or poor) English proficiency and mathematical skills, respectively. English proficiency was based on two questions relating to speaking and writing English for working purposes and mathematical ability was based on a question about maths ability or working with numbers. Being a migrant is also strongly related to employment opportunities and for migrants is strongly dependent on the length of time since they arrived in Australia (Le and Miller 2000). To capture this, mothers were also asked whether they spoke any other language other than English at home. They were also asked where they were born and for those born overseas, the year in which they arrived. In the analysis, we differentiate between Australian born mothers and those born overseas, and amongst the latter, between those who arrived before 1981, those who arrived between 1981 and 1990 and those who arrived after 1990.

Partner's income has been shown to play an important part in explaining the employment behaviour of couple mothers and so this is included in the couple mother regression only. Partner's income squared was also included to capture any non-linear relationship.

Individuals with long-term health problems or disabilities face obvious additional problems with participating in paid work (ABS 1997; Russo and Jansen 1998; Walker 2002) compared to others. Mothers with long-term health problems though, often face a double burden

because they may still take responsibility for the majority of childcare and domestic labour tasks (WWDA 2003). Irrespective of their own health circumstances, it is usually women that carry the majority of the care burden where a family member has a long-term health problem or disability. Variables that capture both of these circumstances are entered in the model.

Researchers have sometimes pointed to the circumstances that a person experiences as they are growing up to explain current behaviour or circumstances. The employment experience of parents is sometimes used to explain the current labour market experience of their offspring, particularly in cases where there has been on-going and chronic unemployment within a family. The employment history of both the mother and the father of the mothers in the FAWD study are entered into the model here in an attempt to test this proposition.

To assess the impact of attitudes about work on the employment decisions of mothers, the FAWD study used a series of statements about different aspects of work and asked respondents to indicate on a five-point scale how important each aspect was to them. Consistent with both economic and sociological thinking, both financial and intrinsic aspects of work were included. Based on an empirical interrogation of the responses, three attitudinal scales were then created and entered into the model.¹ Mothers' attitudes about parents using income support while they are raising children was also included in the model, particular as the FAWD sample is made up entirely of mothers in households who receive such support from the government.

In line with psychological thinking, FAWD also contained a series of questions about self-confidence and control. These five items were combined into a single index to see how well it helped explain the employment outcome of mothers.

Finally, there were a series of attitudinal questions about having a career, mothering responsibilities, the use of childcare and the positive and negative effects of maternal employment on the development and well-being of children.

Estimation results

In this section we present the estimates of the determinants of the probability of employment for lone and couple mothers. Whilst the analysis undertaken was that of two logistic regressions, simply reporting the coefficients of these regressions can only convey the significance and relative size of the effect for each variable on the underlying logit. To be able to interpret the coefficient, we need to convert the logit to its underlying probability (of employment) using the following formula:

$$\text{Pr}(\text{employment}) = \exp(\text{estimated logit}) / (1 + \exp(\text{estimated logit}))$$

Whilst the effect of each variable on the value of the estimated logit is shown by the coefficient in the regression, the effect of each variable on the transformed probability of employment is a non-linear relationship, and varies with the value of all the explanatory variables in the model, not just the value of the explanatory variable in question. Therefore, in order to illustrate how each variable affects the probability of employment, we need to consider at what values of the other variables in the model, we are making the calculation.

¹ The make-up of the scales are discussed in more detail in the results section. They are also detailed in Appendix A.

In this paper, the effect of each variable on the probability of employment is calculated relative to the probability of employment of a 'representative' mother. This 'representative' mother was determined using the mean value on those variables in the model that are continuous (mother's age, SEIFA index, partner's income and index of control and self-confidence) and the modal value on all remaining categorical variables.² Consequently, our 'representative' mother:

- has only one child, who is of preschool age;³
- is 39 years old;
- has a vocational or trade qualification;
- speaks only English at home;
- has good or very good English proficiency and maths ability;
- is not of Indigenous origin;
- was born in Australia and lives in a major city;
- lives in suburb with a SEIFA index of disadvantage score of 990 (Australian avg=1000);⁴
- is purchasing their own home;
- has a partner who earns \$655 per week (couple mothers only);
- does not have long-term health problems themselves or someone they care for;
- has a father who mostly or always worked and a mother who sometimes or never worked when they were growing up;
- felt pay, job security and a steady income were quite or very important;
- felt a respected job, where you could achieve and have contact with other adults was quite or very important;
- felt good hours for a job were quite or very important;
- agreed or strongly agreed there was no shame in parents getting government support;
- agreed or strongly agreed that they needed a career for a fully satisfying life;
- did not agree that working mothers leading busy and productive lives were good role models for children growing up;
- did not agree that children are less likely to form warm and secure relationships with a mother who is working full-time;
- agreed or strongly agreed they put family responsibilities ahead of work responsibilities;
- agreed or strongly agreed they worry when someone else cares for their children;
- scored 3.9 on an index of control and self-confidence (min=1, max=5);
- and who could not raise \$2000 in a week in an emergency (therefore was financially stressed).

² The mean and modal values were calculated for the complete sample of lone and couple mothers, weighted to take account of the relative over-representation of lone mothers in the FAWD sample. Partner's income is obviously only calculable for couple mothers.

³ Whilst there were more mothers with a youngest child who was at primary school than those with a youngest child who was of preschool age, our representative mother still has a single child who was preschool age. This is because an examination of the numbers of children in each of the four age categories revealed that a single child of preschool age was still the most prevalent of all possible combinations.

⁴ Half of the SEIFA distribution (between the 25th and 75th percentile) lies between 955 and 1027, so 990 is only marginally different from the average across all households.

The marginal effects of each variable on the probability of employment for mothers is shown for lone and couple mothers in Table 3. The estimated probability of employment for our 'representative' mother was 59.2 per cent for couple mothers and 62.7 per cent for lone mothers, (which are very similar to the average rates of employment for lone and couple mothers found in the FAWD study and shown in Table 2). It is the change from these estimated 'representative' probabilities that are displayed in Table 3. The coefficient estimates of the two underlying logistic regressions are shown in Appendix C.

After taking account of missing data, the estimation sample comprised data from 908 of the 1245 couple mothers and 1039 of the 1160 lone mothers in the FAWD sample. The greater loss of observations for the couple mothers was due to the inclusion of partner's income in the couple mother regression, where data loss was substantially higher.

Table 3: Marginal effects on the probability of employment, FAWD (2002)

Variable	Couple mothers %	Lone mothers %
<i>Children</i>		
Youngest child at primary school	6.8*	4.2*
Youngest child 12-15	11.0**	9.2*
Youngest child 16-24	25.9**	30.0**
Two or more preschool children	-14.1*	-14.6
Two or more primary school children ^(a)	-10.5*	-15.8**
Four or more children	-0.2	-5.5
<i>Educational attainment</i>		
Degree or diploma	8.9#	6.6
Year 12 only	3.5	0.4
Year 10 or 11 only	-8.2**	-2.0
Less than Year 10	-10.9*	-15.6**
<i>Other demographics/skills</i>		
Age (5 years)	-5.6	0.0
Aboriginal or Torres Strait Islander origin	-3.5	-7.4
Non-English speaking at home	-9.4	-9.6
Satisfactory or poor written & spoken English	-7.7	0.0
Satisfactory or poor maths	-12.0*	-15.9**
<i>Residential location</i>		
Inner regional	-0.2	0.4
Outer regional	-0.3	10.3#
Remote or very remote	12.9	-14.0
SEIFA Index of disadvantage (100 pts)	0.4	0.4
<i>Year of arrival in Australia</i>		
Migrant who arrived prior to 1981	0.0	-6.8
Migrant who arrived 1981-1990	-6.3	-8.4
Migrant who arrived 1991-2002	-36.1*	17.0
<i>Housing tenure</i>		
Own house outright	-3.4	-15.2*
Renting	-5.9	-19.8
Other housing	-9.3	-25.6
Partner's weekly income (per \$100)	0.1	0.0

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Variable	Couple mothers %	Lone mothers %
<i>Health issues</i>		
Mother's long-term health problem	-27.6**	-29.5**
Care for family member with health problem	-17.0*	-20.9*
<i>Family employment history</i>		
Father sometimes or never in paid employment	-4.1	-0.7
Mother mostly or always in paid employment	-5.4	-4.6
<i>Attitudes about jobs & income support</i>		
Pay, security & steady income not important	6.1	3.5
Respect, achievement and contact not important	-4.2	-4.3
Hours not important	-17.8#	-12.4
Not agree, no shame parents get income support	3.9	-1.5
<i>Attitudes about career & maternal employment</i>		
Agree career important	12.7**	3.2
Agree mothers are good role models	12.0**	17.6**
Agree, children less secure	-10.4**	-3.6
Not agree, put family ahead of work	11.8*	5.3
Not agree, worry when someone else cares for children	10.9**	14.2*
Index of control and self-confidence	-1.6	-1.7
Financially stressed	-3.9	-15.5**
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Probability of employment for 'representative' mother	59.2%	62.7%
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<i>Notes:</i>	The marginal effects are calculated relative to a 'representative' mother who	
	<ul style="list-style-type: none"> • has only one child, who is of preschool age; • is 39 years old; • has a vocational or trade qualification; • speaks only English at home; • has good or very good English proficiency and maths ability; • is not of Indigenous origin; • was born in Australia and lives in a major city; • lives in an area with a SEIFA index of disadvantage score of 990 (Australian avg=1000); • is purchasing their own home; • whose partner earns \$655 per week (couple mothers only); • does not have long-term health problems themselves or someone they care for; • whose father mostly or always worked and whose mother sometimes or never worked when they were growing up; • who felt pay, job security and a steady income were quite or very important; • who felt a respected job, where you could achieve and have contact with other adults was quite or very important; • who felt good hours for a job were quite or very important; • who agreed there was no shame in parents getting government support; • who agreed they needed a career for a fully satisfying life; • who did not agree that working mothers leading busy and productive lives were good role models for children growing up; • who did not agree that children are less likely to form warm and secure relationships with a mother who is working full-time; • who agreed they put family responsibilities ahead of work responsibilities; • who agree they worry when someone else cares for their children; • who scored 3.9 on an index of control and self-confidence (min=1, max=5); • and who could raise \$2000 in a week in an emergency (therefore were not financially stressed). 	
(a)	The marginal effects of having two or more children of primary school age is the change in probability of having two children of primary school age compared to having one child of primary school age and no children of preschool age.	
**	significant at the 1 per cent level	
*	significant at the 5 per cent level	
#	significant at the 10 per cent level	

Age and number of children

As in all previous studies on this issue, the age of the youngest child and the number of children a mother had were key to understanding the employment behaviour of mothers. In this study, couple mothers with a youngest child of primary school age were more likely to be employed by 6.8 percentage points compared with an otherwise similar couple mother whose youngest child was of preschool age (the 'representative' mother). At the same time, where the youngest child was aged 12-15 years or 16-24 years, the predicted probability of employment increased by 11.0 and 25.9 percentage points, respectively, compared to otherwise similar couple mothers with a youngest child of preschool age.

If we consider lone mothers, the pattern is very similar, with an increasing probability of employment as the youngest child increases in age. For those lone mothers whose youngest child is of primary school age, the predicted probability of employment is 4.2 percentage points higher, increasing to 9.2 percentage points higher for a youngest child aged 12-15 years, and increasing further to 30.0 percentage points when the youngest child is 16-24 years of age (compared to an otherwise similar lone mother with a youngest child of preschool age). The larger positive impact on lone mothers of the youngest child being 16 years or older is potentially attributable to the withdrawal of eligibility for lone mothers receiving income support (called parenting payment single) once the youngest child reaches the age of 16.⁵

All of these changes in probability are significant at the 1 or 5 per cent level for both lone and couple mothers.

The presence of multiple children tends to reduce the probability that a mother will be in employment. Two or more children at a preschool age reduced the probability of employment by 14.1 percentage points for couple mothers and 14.6 percentage points for lone mothers. In the FAWD sample, only 4.9 per cent of lone mothers had two or more preschool age children and the small number meant the effect failed to reach significance in the regression. For couple mothers, 13.3 per cent had two or more preschool children (see Appendix B for descriptive statistics of the sample used in the regressions).

For two or more children of primary school age, the impact is larger for lone mothers (reducing the probability of employment by 15.8 percentage points) than for couple mothers (10.5 percentage points lower).⁶ It is also of a similar magnitude to the effect of multiple children at a preschool age for lone mothers, where as the effect is smaller than for multiple children of a preschool age for couple mothers. This could reflect the scope for couple mothers to share the responsibilities of childcare with a partner.

Educational attainment

⁵ As an alternative calculation, we could compute the predicted probability of employment (rather than the change in probability). For a lone mother whose characteristics are the same as our 'representative' mother, we know that the probability of employment is 62.7 per cent. For a similar lone mother, except that her youngest child is 12-15 years of age (rather than preschool age), the predicted probability of employment is now 71.9 per cent; and where the youngest child is 16-24 year of age, the predicted probability is 92.7 per cent.

⁶ Unlike other comparisons in Table 3, here the change in probability is calculated against those mothers with one child of primary school age and none of preschool age.

Unlike the general population, the FAWD sample of mothers has a higher average level of education, particularly of mothers with vocational or trade qualifications (the representative case in this analysis). Consistent with economic theory and studies, those mothers with post-secondary qualifications of a diploma or a university degree had higher probabilities of employment (8.9 percentage points for couple mothers compared to 6.6 for lone mothers). However, this only a marginally significant difference for couple mothers (at the 10 per cent level) compared to mothers with vocational or trade qualifications. Somewhat perversely, mothers who completed Year 12 but obtained no post-secondary qualification were slightly more likely to be in paid employment than those with vocational or trade qualifications, although the differences were not statistically significant.

As expected, failing to complete high school through to Year 12 had a substantial detrimental impact on the probability of mothers being in employment. For couple mothers, those who only completed either Year 10 or 11 reduced their probability of employment by 8.2 percentage points, whereas for those with an educational attainment below Year 10, the detrimental impact rises to 10.9 percentage points. For lone mothers, as in Gray et al. (2002) the detrimental impact is even larger, although only for those lone mothers with less than Year 10; here the impact is to reduce the probability of employment by 15.6 percentage points.

English and mathematical proficiency

Linked to educational attainment, but also to language background, is a person's proficiency with the English language and with mathematics. Whilst having either poor or at best satisfactory English proficiency was not found to be statistically significant, having poor or satisfactory ability to work with numbers certainly was. For couple mothers, having only a poor or satisfactory ability to work with numbers (compared to those with a good or very good ability) reduced the probability of employment by 12.0 percentage points; this was somewhat higher for lone mothers at 15.9 percentage points.

Both lone and couple mothers had lower probabilities of employment if they spoke a language other than English at home, although the effect was not significant for either.

Indigenous origin and geographic location

Previous studies would suggest a negative impact on the probability of employment from being an Indigenous mother. Whilst the effect found here is indeed negative, and about twice as large for lone Indigenous mothers as couple mothers, neither is significant. This could be due to the relatively small proportion of Indigenous mothers in the sample, at 2.8 per cent for couple mothers and 4.9 per cent for lone mothers. Interestingly, Gray et al. (2002) also failed to find a significant effect, although their insignificant coefficients were positive.

Although there is little in the way of significant results, the effect of geographic location in the FAWD sample is quite interesting. Compared to the 'representative' group in major cities, lone mothers were significantly more likely to be in employment if they were in outer regional locations (10.3 percentage points), although this was only significant at the 10 per cent level.

Although not significant, the effect of being in a remote or very remote location was substantially different between lone and couple mothers and worthy of a comment. For couple mothers, those in remote locations had an increased probability of employment (12.9 percentage points compared to those in major cities) whilst for lone mothers it was a large reduced probability (14.0 percentage points). This could reflect the unique nature of the labour market in remote locations, where family status may be playing an important role in determining access to the usually lower levels of employment opportunity.

Migrant status

Like geographic location, there is little in the way of results from the migrant status variables that are statistically significant compared to the 'representative' group (in this case, Australian born mothers), but are interesting nonetheless. For couple mothers, it would seem the longer mothers have been resident in Australia, the more likely it is that they are in employment. For those arriving before 1981, there is no difference in their employment rates (given similar characteristics) compared to Australian born couple mothers. Those arriving between 1981 and 1990 are somewhat less likely to be in employment although this difference is not statistically significant. However, those arriving since 1990 are substantially less likely to be in employment (36.1 percentage points), which is statistically significant at the 5 per cent level.

For lone mothers, apart from the most recent arrivals the pattern is much the same, with those longer in residence here closer to the employment rates of Australian born lone mothers, although any differences are not significant. The story differs however, for those arriving since 1990. Here the employment rates for lone mothers migrating since 1990 are 17.0 percentage points higher compared to Australian born lone mothers, although with less than one per cent of the lone mother sample in this group (see Appendix B), the figure does not achieve statistical significance. What is interesting about this result though, is that it breaks the pattern of the other migrant groups for lone or coupled mothers and is so substantially in the opposite direction to the recent arrivals group for couple mothers.

Two explanations are offered here. Firstly, these could be women who migrated here unpartnered (perhaps as skilled migrants) and so are more likely to be in employment as they need to support themselves. Or secondly, they may have arrived here partnered, but subsequently separated and being more recent arrivals felt a stronger need to seek employment relative to their longer resident migrant lone mothers. These results are in contrast to Gray et al. (2002) who found a negative impact on employment rates for the most recently arrived migrants, both lone and couple mothers.

Housing tenure

The most common group of mothers in terms of housing tenure were mothers who were buying their own homes. However, this was primarily because of a higher prevalence of house buying amongst couple mothers (53.5 per cent), whereas amongst lone mothers it was substantially lower (34.2 per cent). For lone mothers, the most prevalent type of housing tenure was renting (48.4 per cent).

Compared to the 'representative' group (buying own home), employment rates amongst couple mothers in other housing types were all lower but not statistically significant. For lone mothers, not currently purchasing your own home was associated with a substantially lower

probability of being in employment. For those that owned their home already, there was a statistically significant lower probability of employment of 15.2 percentage points. Intuitively this makes sense because owning your own home (perhaps as part of a divorce settlement) substantially reduces living costs making it easier to get by on government support. However, although not statistically significant, the impact on the probability of employment of renting is even greater (19.8 percentage points) thus bringing into question any obvious relationship between the cost of housing and the probability of employment. Mothers who had other forms of housing tenure (rent free accommodation, crisis or transitional accommodation or other arrangements) had even lower probabilities of employment, especially lone mothers. This group only made up 1.5 per cent of couple mothers and 2.6 per cent of lone mothers and probably reflect mothers whose personal circumstances were much more in turmoil than other mothers.

Partner's income

Whilst economic theory and intuition may suggest that a partner's income level would play a significant part in the decision of mothers to seek employment, there is no evidence of an effect in this study. The impact of a \$100 per week increase in a partner's income has almost no impact on the probability of couple mothers to be in employment, and contrary to expectations, is in fact positive (0.1 percentage points).

Long-term health problems

The ability of mothers to engage with the labour market is going to be influenced by any health concerns they may have, either for themselves or for another member of their family, particular as the care of others often falls to the mother in a family. In this study, the probability of employment was substantially affected if mothers had long-term health problems, disabilities or other conditions that have lasted 6 months or more. For couple mothers, it decreased the probability of employment by 27.6 percentage points and for lone mothers by a similar 29.5 percentage points. Where another member of the household had a health problem or disability that had lasted 6 months or longer and where mothers indicated this affected the kind of paid work they could do, where they could work or the hours they could do, the impact on the probability of employment was still significant and substantial, although not as large as for their own health concerns. For couple mothers, having to care for others reduced their probability of employment by 17.0 percentage points and for lone mothers it was 20.9 percentage points.

Attitudes about work, income support and financial stress

One of the key research questions motivating the FAWD study was the extent to which attitudes to work influence mothers' decision about seeking employment (and their success at finding it). Consequently, the study contains a number of attitude questions about what are important aspects of having a job. A total of seven aspects of work were put to mothers, who were asked to indicate how important each was on a five-point scale ranging from 'very important' to 'not at all important'. This was too many variables to include a single model, and many of the variables were closely correlated. Therefore, factor analysis was initially used to identify how many different factors may be present. The analysis revealed three different factors, with each factor loading strongly on some items and not others and little overlap across the factors in regards to where the items loaded strongly.

The first factor was associated with how important mothers felt good pay, good job security and a predictable or steady income was. These can all be seen to be different aspects of the financial returns from a job. The second factor loaded most strongly on a single item, how important were good hours in a job. For many, this would seem to be just another aspect of the financial rewards, but for mothers it appeared to be something separate and probably identified the need for a job to fit in with their responsibilities as a mother. The third factor loaded most strongly on non-financial aspects of a job: specifically, one that was respected by people on general; was a job in which you felt able to achieve something; and the opportunity to have contact with other adults.

Using these three groupings of the seven items, three new variables were subsequently constructed that represented the mean rating across the statements, based on the five-point scale, where 1 equalled 'not at all important' and 5 equalled 'very important'.⁷ The cronbach alpha on the financial reward aspects was 0.62 and for the non-financial rewards was 0.48. These variables were then transformed into binary variables, taking the value of one where the value was four or more, and zero otherwise. This was equivalent to an 'average' rating across the individual items of 'quite important' or 'very important'.⁸

In terms of their impact on the probability of employment, only the rating of good hours being 'quite important' or 'very important' appeared to have a significant effect; and then only for couple mothers and only at the 10 per cent level. Given that our representative mother considered good hours to be quite or very important, the marginal effect shown in Table 3 is for the impact of not rating good hours as quite or very important, with the marginal effect reducing the probability of employment by 17.8 percentage points.

Mothers were also asked the extent to which they agreed or disagreed (again, on a five-point scale) with the statement that there is no shame in parents getting government support. Distinguishing between those mothers who agree or strongly agreed from the remainder, no significant impact on the probability of employment was discovered.

We might expect that families who were financially stressed would be more likely to seek or be in employment in an attempt to overcome that. Alternatively, not being in employment may well increase the likelihood of being financially stressed. To test which of these propositions is correct, financial stress was measured by whether mothers felt they could raise \$2000 in a week in the case of an emergency. Being financially stressed was not a significant factor in the probability of employment for couple mothers, but was for lone mothers. Those that were financially stressed, however, were significantly less likely to be in employment (15.5 percentage points), suggesting that it is the absence of employment that leads to financial stress rather than the reverse.

Attitudes about self and parent's work experience

The FAWD study also sought to identify the extent to which mothers' perceptions about themselves influenced their employment outcomes. Mothers were asked to rate on a five-

⁷ Obviously, the variable based on the importance of 'good hours' was simply the scale on that particular statement.

⁸ With the alternative representing an average rating of 'mixed feelings', 'not very important' or 'not at all important'.

point scale from 'strongly agree' to 'strongly disagree' how they felt about the following statements about themselves:

- I can do just about anything I really set my mind to
- I have little control over the things that happen to me
- What happens to me in the future depends mostly on me
- Every time I try to get ahead something or somebody stops me
- I like to succeed at whatever I do.

The second and fourth statements were negative sentiments and so these were reverse coded and then the mean scale of the five statements was calculated to create an index running from one to five, with higher numbers indicating a more positive and confident outlook. The cronbach alpha for this index was 0.46. In the regressions, this self-confidence index did not have a significant influence on the probability of employment.

In a number of studies, the employment history of one's parents when growing up has been found to be associated with some individual outcomes. Mothers were asked whether, when they were growing up, their mother or father was in paid employment all, most, some or none of the time. By distinguishing between mothers whose parents (separately) were in paid employment most or all the time (compared to some or none of the time) whilst the mother was growing up, this study found no significant relationship for either parents employment history on the mother's probability of employment.

Attitudes about career, childcare and maternal employment

The final group of variables to be considered in this study relate to mothers' attitude to career, maternal employment and mothering. These concepts are considered important in the determination of employment for mothers, particularly in the sociology literature. In this study, these concepts are captured using five different variables. All five were constructed from statements read to mothers, who were asked to agree or disagree (on a five-point scale from 'strongly agree' to 'strong disagree'). Each variable represents those mothers who 'agreed' or 'strongly agreed' with each statement (compared to those who did not).⁹ For brevity, this paper just describes this group as those who agreed with the statement and the alternative as those who did not agree with the statement.

Table 3 indicates that those mothers who agreed with the statement that 'they can't picture having a fully satisfying life without a career' (career orientated mothers), were significantly more likely to be in employment if they were a couple mother (12.7 percentage points). For career orientated lone mothers, their attitude about career was not significant in the probability of them being employed. This is an interesting finding given that a much higher proportion of the lone mother sample were career orientated than the couple mother sample (39.0 per cent compared to 23.0 per cent).

Consistent with this positive attitude about working, the study found that mothers who agreed that 'for children growing up, working mothers were good role models for leading busy and productive lives' were also significantly more likely to be in employment. This is true of both

⁹ Which meant they had 'mixed feelings', 'disagreed' or 'strongly disagreed' with the statement.

lone and couple mothers, with the effect for lone mothers (17.6 percentage points) being larger than that for couple mothers (12.0 percentage points).

Also consistent with these findings is the impact that attitudes about maternal employment has on the well-being of children, but only for couple mothers. Couple mothers who agreed that 'children are less likely to form a warm and secure relationship with a mother who is working full-time', were also less significantly likely to be in employment (10.4 percentage points). The impact for lone mothers who had a similar attitude was also negative on their probability of employment, but the effect was not significant.

The final two statements are about prioritising one's family life over a working life and about concerns leaving children in the care of others. Most mothers agreed with the statement that 'they find that they put family responsibilities ahead of work responsibilities' (making this the 'representative' group). For those couple mothers that did not agree with this statement, (were less family orientated and more work focused) their probability of employment was significantly higher (11.8 percentage points). The effect for like-minded lone mothers was also to increase the probability of employment, although the effect was not significant. Finally, most mothers agreed with the statement that they 'worry when someone else cares for their children'. Compared to this 'representative' group, mothers who did not agree with the statement were again more likely to find themselves with a job. The impact was higher this time for lone mothers (14.2 percentage points) compared to couple mothers (10.9 percentage points).

Concluding comments

What is clear from the analysis described in this paper is that the usual determinants of mothers' employment play an important role in this expanded model. The age and number of children within the family, the level of educational attainment, and skills that impact on individual productivity such as English proficiency and mathematical ability, are all key and significant determinants of the probability of mothers' employment.

Where this study expands our understanding is in relation to mothers' attitudes about a career, their attitudes about the effects of maternal employment on children's development and well-being, and the impact of long-term health problems within the family. Couple mothers who were more career-oriented were significantly more likely to be in employment than those who were not. Couple mothers were also more likely to be in employment when they considered working mothers to be good role models for children and less likely to be in employment where they agreed that maternal employment could lead to a less secure relationship with their child or where they could be characterised as more family orientated than work focused.

In other words, the association between the probability of employment and the attitudes of couple mothers to career and maternal employment are exactly what would be expected. This is not to say that these attitudes 'cause' the mothers to be in employment or not; rather, couple mothers who are already in employment are more likely to be career oriented and have positive (rather than negative) attitudes about the impact on children of maternal employment (with the reverse being true for those not in employment).

Lone mothers on average were more likely to be career-oriented and work focussed, agree that working mothers to be good role models for children and less likely to agree that

maternal employment could lead to a less secure relationship with their child. Despite this, only the 'good role model' variable was significant in the lone mother regression, indicating these attitudes are less likely to have an impact on the probability of employment. Essentially, the attitudes of lone mothers seem to fit with their status of being the 'breadwinner' in the household, even where this means relying heavily or solely on government benefits. Potuchek (1997) notes that in dual income families, this breadwinner attitude is associated very strongly with the father rather than the mother – perhaps in lone mother households the mother takes over the position of the father in terms of attitudes. While for couple mothers, their attitudes are likely to be mediated by the father, that is, the mother and father work out a joint 'attitude' to paid work, for lone mothers this influence is likely to be missing – thus pointing to a fundamental difference in how lone and couple mothers develop and maintain attitudes associated with paid work.

Couple and lone mothers were almost equally likely to agree that they worried when someone else cared for their children (58.7 and 59.7 per cent respectively) and while the impact was significant for both, the effect was larger for lone mothers. This is because lone mothers were more likely to 'strongly agree' with this statement (rather than just 'agree') indicating that lone mothers were making a much more definite decision not to work when they held this view.

Finally and importantly, mothers who had a long-term health problem or who had to care for a family member who had a long-term health problem or disability were much less likely to be employed.

Also importantly, where any of the determinants on the probability of employment were significant, the impact on lone mothers was almost always larger than for couple mothers.

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Appendix A: Variable definitions

Youngest child not yet at school is set to one if the youngest child has yet to attend school, and zero otherwise (omitted category).

Youngest child at primary school is set to one if the youngest child is at school and less than 12 years old, and zero otherwise.

Youngest child 12-15 is set to one if the youngest child is aged 12-15, and zero otherwise.

Youngest child 16-24 is set to one if the youngest child is aged 16-24, and zero otherwise.

Two or more preschool children is set to one if there are two or more preschool children, and zero otherwise.

Two or more primary school children is set to one if there are two or more preschool children, and zero otherwise.

Two or more preschool children is set to one if there are two or more primary school children, and zero otherwise.

Four or more children is set to one if there are four or more children, and zero otherwise.

Four or more children is set to one if there are four or more children, and zero otherwise.

Degree or diploma is set to one if respondent's highest educational qualification is a degree or diploma, and zero otherwise.

Vocational is set to one if respondent's highest educational qualification is a trade or vocational certificate, and zero otherwise.

Year 12 only is set to one if respondent's highest educational qualification is year 12 only, and zero otherwise.

Year 10 or 11 only is set to one if respondent's highest educational qualification is year 10 or 11 only, and zero otherwise.

Less than Year 10 is set to one if respondent's highest educational qualification is less than year 10, and zero otherwise.

Age measures age of mothers in years.

Aboriginal and Torres Strait Islander is set to one if respondent is Aboriginal or Torres Strait Islander, and zero otherwise.

Non-English speaking at home is set to one if a language other than English is spoken at home, and zero otherwise.

Written and Spoken English is set to one if the average score of working with and writing in English is 'good' or 'very good' (on a 4 point scale), and zero otherwise.

Maths is set to one if maths or working with numbers is 'good' or 'very good' (on a 4 point scale), and zero otherwise.

Major City is set to one if lives in a major city (omitted category), and zero otherwise.

Inner regional is set to one if lives in an inner regional location, and zero otherwise.

Outer regional is set to one if lives in an outer regional location, and zero otherwise.

Remote or very remote is set to one if lives in a remote or very remote location, and zero otherwise.

SIEFA Index of Disadvantage is the ABS Index of Disadvantage constructed from the 2001 Census and attached at the postcode level.

Born in Australia is set to one if respondent was born in Australia, and zero otherwise (omitted category).

Migrant who arrived prior to 1981 is set to one if respondent was born overseas and migrated to Australia before 1981, and zero otherwise.

Migrant who arrived 1981-1990 is set to one if respondent was born overseas and migrated to Australia between 1981-1990, and zero otherwise.

Migrant who arrived 1991-2002 is set to one if respondent was born overseas and migrated to Australia between 1991-2002, and zero otherwise.

Own house outright is set to one if respondent owns house outright, and zero otherwise.

Purchasing house is set to one if respondent is purchasing their house, and zero otherwise.

Renting is set to one if respondent is renting, and zero otherwise.

Other housing is set to one if respondent lives in a community housing property, rent free accommodation, crisis or transitional or other accommodation, and zero otherwise.

Partner's weekly income is partner's weekly income as reported by respondent.

Mother's long-term health problem is set to one if respondent has any health problems, disabilities or other conditions, that have lasted 6 months or more, and zero otherwise.

Care for family member with health problem is set to one if respondent has someone in their household with a health problem or disability, that has lasted 6 months or more which affects their daily life to a large extent, and zero otherwise.

Father's paid employment is set to one if respondent's father worked all or most of the time while they were growing up, and zero otherwise.

Mother's paid employment is set to one if respondent's mother worked all or most of the time while they were growing up, and zero otherwise.

Pay, security and steady income is set to one if the average score on how important good pay, good job security and a predictable or steady income are for a job was 'quite important' or 'very important' (on a 5 point scale), and zero otherwise (equivalent to 'mixed feeling', 'not very important' or 'not at all important').

Respect, achievement and contact is set to one if the average score on how important a job respected by people in general, a job in which you feel you can achieve something and the opportunity to have contact with other adults are for a job was 'quite important' or 'very important' (on a 5 point scale), and zero otherwise (equivalent to 'mixed feeling', 'not very important' or 'not at all important').

Hours is set to one if how important good hours are for a job was 'quite important' or 'very important' (on a 5 point scale), and zero otherwise (equivalent to 'mixed feeling', 'not very important' or 'not at all important').

No shame parents get income support is set to one if respondent 'agrees' or 'strongly agrees' there is no shame in parents getting government support, zero otherwise (equivalent to 'mixed feeling', 'disagree' or 'strongly disagree').

Career important is set to one if respondent 'agrees' or 'strongly agrees' that they can't picture having a fully satisfying life without a career, zero otherwise (equivalent to 'mixed feeling', 'disagree' or 'strongly disagree').

Mothers are good role models is set to one if respondent 'agrees' or 'strongly agrees' that for children growing up, working mothers are good role models for leading busy and productive lives, zero otherwise (equivalent to 'mixed feeling', 'disagree' or 'strongly disagree').

Children less secure is set to one if respondent 'agrees' or 'strongly agrees' that children are less likely to form a warm and secure relationship with a mother who is working full-time, zero otherwise (equivalent to 'mixed feeling', 'disagree' or 'strongly disagree').

Put family ahead of work is set to one if respondent 'agrees' or 'strongly agrees' that they find they put family responsibilities ahead of work responsibilities, zero otherwise (equivalent to 'mixed feeling', 'disagree' or 'strongly disagree').

Worry when someone else cares for children is set to one if respondent 'agrees' or 'strongly agrees' that they worry when someone else cares for their children, zero otherwise (equivalent to 'mixed feeling', 'disagree' or 'strongly disagree').

Index of control and self-confidence is the average score on a set of five items where the respondent was asked to assess the following statements on a five-point scale ranging from 'strongly agree' (5) to 'strongly disagree' (1):

- I can do just about anything I really set my mind to
- I have little control over the things that happen to me (reverse coded)
- What happens to me in the future depends mostly on me
- Every time I try to get ahead something or somebody stops me (reverse coded)
- I like to succeed at whatever I do

Appendix B: Descriptive statistics

Variable	Couple mothers		Lone mothers	
	Mean	Std. Dev.	Mean	Std. Dev.
Employed	0.579	0.494	0.606	0.489
Youngest child is preschool	0.350	0.477	0.264	0.441
Youngest child is at school	0.327	0.469	0.376	0.485
Youngest child aged 12-15	0.238	0.426	0.294	0.456
Youngest child aged 16-24	0.085	0.279	0.066	0.249
2 or more preschool children	0.133	0.340	0.049	0.216
2 or more school children	0.165	0.372	0.115	0.319
4 or more children	0.133	0.340	0.066	0.249
Mother's age	39.087	7.766	38.598	8.416
Diploma or higher degree	0.236	0.425	0.248	0.432
Vocational or trade qualification	0.316	0.465	0.325	0.469
Completed Year 12 only	0.126	0.332	0.121	0.327
Completed Year 10 or 11 only	0.249	0.433	0.231	0.422
Completed less than Year 10	0.074	0.262	0.074	0.262
Language other than English spoken at home	0.099	0.299	0.075	0.264
Aboriginal or Torres Strait Islander origin	0.028	0.164	0.048	0.214
Major city	0.550	0.498	0.579	0.494
Inner regional	0.293	0.455	0.295	0.456
Outer regional	0.138	0.345	0.111	0.314
Remote or very remote	0.020	0.139	0.015	0.123
Census 2001 index of disadvantage	989.454	60.675	992.952	62.603
Australian born	0.826	0.379	0.820	0.384
Migrant arrived in Australia before 1981	0.108	0.310	0.116	0.321
Migrant arrived in Australia between 1981-1990	0.054	0.226	0.058	0.233
Migrant arrived in Australia between 1991-2002	0.012	0.109	0.006	0.076
Fully own house	0.281	0.450	0.148	0.355
Purchasing house	0.535	0.499	0.342	0.474

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Variable	Couple mothers		Lone mothers	
	Mean	Std. Dev.	Mean	Std. Dev.
Renting house	0.169	0.375	0.484	0.500
Other housing arrangement	0.015	0.123	0.026	0.159
Mother has long-term health problem that affects her ability to work or study	0.100	0.300	0.143	0.351
Mother cares for household member with long-term health problem	0.055	0.228	0.042	0.201
English proficiency is poor or satisfactory	0.180	0.384	0.204	0.403
Maths proficiency is poor or satisfactory	0.183	0.387	0.218	0.413
Mother's father was in full-time employment most or all time	0.917	0.275	0.892	0.310
Mother's mother was in full-time employment most or all time	0.334	0.472	0.386	0.487
Good pay, good job security & a predictable or steady income considered quite or very important	0.920	0.272	0.934	0.249
Non-monetary aspects of job considered quite or very important	0.757	0.429	0.774	0.419
Good hours considered quite or very important	0.959	0.198	0.957	0.204
Index of control & self-confidence	2.895	0.533	2.926	0.559
Agree or strongly agree no shame in parents getting government support	0.794	0.405	0.787	0.409
Could raise \$2000 in a week in an emergency	0.648	0.478	0.499	0.500
Agree or strongly agree, can't picture having a fully satisfying life without a career	0.230	0.421	0.390	0.488
Agree or strongly agree that working mothers are good role models for children growing up	0.420	0.494	0.576	0.494
Agree or strongly agree that children are less secure with full-time working mothers	0.327	0.469	0.280	0.449
Agree or strongly agree that put family responsibilities ahead of work responsibilities	0.873	0.333	0.848	0.359
Agree or strongly agree that worry when someone else cares for their children	0.587	0.493	0.597	0.491
Partner's income	668.651	407.895		
Number of observations	908		1039	

Appendix C: Estimation results

Variable	Couple mothers		Lone mothers	
	Coefficient	t-statistic	Coefficient	t-statistic
Youngest child is preschool	-1.3686	-3.47	-2.0218	-4.24
Youngest child is at school	-0.7731	-2.23	-1.0558	-2.39
Youngest child aged 12-15	-0.6023	-1.80	-0.8454	-1.96
2 or more preschool children	-0.5691	-2.16	-0.5958	-1.59
2 or more school children	-0.4816	-2.06	-0.8360	-3.28
4 or more children	-0.0078	-0.03	-0.2276	-0.69
Mother's age	0.1235	1.52	0.1097	1.55
Mother's age squared	-0.0020	-2.00	-0.0013	-1.42
Vocational or trade qualification	-0.3877	-1.79	-0.2944	-1.33
Completed Year 12 only	-0.2203	-0.80	-0.2569	-0.92
Completed Year 10 or 11 only	-0.6909	-2.95	-0.3534	-1.47
Completed less than Year 10	-0.8028	-2.28	-0.9025	-2.53
Language other than English spoken at home	-0.3799	-1.32	-0.3962	-1.30
Aboriginal or Torres Strait Islander origin	-0.1416	-0.30	-0.3071	-0.85
Inner regional	-0.0100	-0.06	0.0175	0.10
Outer regional	-0.0116	-0.05	0.4775	1.84
Remote or very remote	0.5770	1.02	-0.5723	-0.84
Census 2001 index of disadvantage	0.0015	1.08	0.0018	1.38
Migrant arrived in Australia before 1981	0.0006	0.00	-0.2838	-1.10
Migrant arrived in Australia between 1981-1990	-0.2566	-0.69	-0.3468	-1.01
Migrant arrived in Australia between 1991-2002	-1.5755	-1.94	0.8517	0.81
Purchasing house	0.1396	0.75	0.6183	2.40
Renting house	-0.1013	-0.41	-0.1926	-0.80
Other housing arrangement	-0.2412	-0.38	-0.4302	-0.85
Mother has long-term health problem that affects her ability to work or study	-1.1433	-4.12	-1.2184	-5.54
Mother cares for household member with long-term health problem	-0.6869	-1.95	-0.8506	-2.22

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Variable	Couple mothers		Lone mothers	
	Coefficient	t-statistic	Coefficient	t-statistic
English proficiency is poor or satisfactory	-0.3104	-1.44	0.0006	0.00
Maths proficiency is poor or satisfactory	-0.4827	-2.29	-0.6475	-3.28
Mother's father was in full-time employment most or all time	0.1679	0.60	0.0315	0.13
Mother's mother was in full-time employment most or all time	-0.2213	-1.34	-0.1926	-1.19
Good pay, good job security & a predictable or steady income considered quite or very important	-0.2602	-0.87	-0.1519	-0.48
Non-monetary aspects of job considered quite or very important	0.1732	0.96	0.1805	0.96
Good hours considered quite or very important	0.7178	1.80	0.5077	1.36
Index of control & self-confidence	-0.0658	-0.44	-0.0706	-0.48
Agree or strongly agree no shame in parents getting government support	-0.1642	-0.85	0.0651	0.35
Could raise \$2000 in a week in an emergency	0.1614	0.94	0.6318	3.89
Agree or strongly agree, can't picture having a fully satisfying life without a career	0.5693	2.91	0.1382	0.84
Agree or strongly agree that working mothers are good role models for children growing up	0.5341	3.27	0.8869	5.43
Agree or strongly agree that children are less secure with full-time working mothers	-0.4210	-2.59	-0.1511	-0.88
Agree or strongly agree that put family responsibilities ahead of work responsibilities	-0.5213	-2.11	-0.2352	-1.02
Agree or strongly agree that worry when someone else cares for their children	-0.4785	-3.00	-0.6856	-4.18
Partner's income	0.0007	1.50		
Partner's income squared	-5.31E-07	-1.98		
Constant	-1.0269	-0.46	-1.9595	-0.97
Pseudo-R ²		0.146		0.241
Model χ^2		180.93		335.57
Number of observations		908		1039