Young Partnered Women in Australia :

DECOMPOSING CHANGES IN EMPLOYMENT

JENNIFER BAXTER
PHD CANDIDATE
DEMOGRAPHY AND SOCIOLOGY PROGRAM
AUSTRALIAN NATIONAL UNIVERSITY

MARCH 2004

ABSTRACT

In recent decades the increased employment of partnered women has been one of the most significant changes in the Australian labour market. This analysis focuses on the increased employment of younger partnered women, those aged 25-29, between 1981 and 2001. Over this period the employment rate of these women increased from 46% to 71%. Within this age group there have been changes in fertility and education, with the characteristics of the 2001 population much more favourable towards employment. The purpose of this analysis is to decompose the difference in rates between 1981 and 2001 into changes due to composition, and change due to differing effects of covariates. Logistic regression is used to model the data at each time, using the population census sample files. By calculating predicted values under different scenarios, these models investigate what role the effect of changes in education and fertility have had on employment rates.

INTRODUCTION

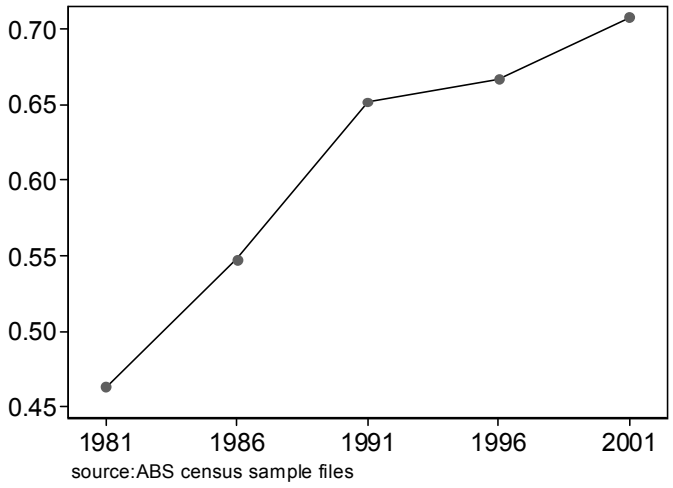
In recent decades in Australia the increase in labour force participation of women, particularly partnered women, has been dramatic. This analysis seeks to understand the reasons for the dramatic increase in employment of partnered or cohabiting women aged 25 to 29, focusing on the last 20 years, and particularly looking at how much of the change is related to demographic changes.

Reforms to government policy and legislation have been widespread over this period, as have changes in the labour market. These changes are discussed briefly below, following an overview of how employment has changed for women in this age group. The next section discusses the data and the techniques used to model and decompose the employment rates. Finally, I present the results of the multivariate analysis and the decomposition, and then a discussion of these results.

BACKGROUND

Between 1981 and 2001 the proportion employed amongst partnered 25 to 29 year olds increased from 46 per cent to 71 per cent, although much of this increase occurred in the 1980s, as the following chart shows.

Figure 1 Proportion Employed, Partnered Women Aged 25 to 29, Australia, 1981 to 2001



Of course, because of the strong relationship between employment and the presence of children, it is expected that as partnered women in this age group delay having children, they will be much more likely to be working. Part of the reason, then, for the increased employment is expected to be the delayed

commencement of childbearing. It is also necessary to look at changes in education over this time. Women are now much more likely to complete secondary school, and to pursue post-school education than they were twenty years ago.

This means that over time the characteristics of the population of partnered 25 to 29 year old women has changed considerably. In the results section I briefly overview some of the demographic changes of the last 20 years, as they are revealed in these data.

Policy Developments

The purpose of this section is to provide a brief overview of the contextual changes that have taken place over this twenty year period in Australia.

Child care

In the early 1980s, very little formal child care existed for children under school-age, except for the formal preschool system which some children attended for usually three half-days a week. For school-aged children, there was little outside school hours care. Throughout the 1980s and 1990s the Governments were committed to an expansion of child care places. The Federal Government initially provided operational subsidies to non-profit providers and, from 1984, fee relief to low income users of these services. Fee relief was extended to users of commercial centres in 1991, and renamed Child Care Assistance. Further financial assistance was provided to working parents through the Child Care Rebate from 1994. In the late-1990s, operational subsidies to centres were withdrawn, and Government expenditure on child care became more focused to the users of child care. The affordability of formal child care was a problem for many over this time. While government subsidies provide some assistance, there is evidence that the affordability of care had declined (Burke and Redmond 2002; Powlay 2000). In 2000 the two forms of financial assistance were combined into the Child Care Benefit, with some changes to rates and eligibility criteria. With this new payment affordability has improved (AIHW 2002).

The expansion of child care has resulted in a dramatic increase in the number of places available[1], although measurement of these changes has been made difficult because of

[1] "The total number of places is equivalent to the total number of children who can use the service at any one time during the hours that the service operates" (AIHW 2003).

significant changes in reporting methodologies[2]. Nationally, some 41,600 commonwealth-sponsored places in 1983 rose to 168,300 places in 1991 and 306,600 in 1996. (The number of places has continued to rise since 1996, but the published 2001 figure of 500,000 is not directly comparable with these figures, with the inclusion of vacation care figures that were not previously included.) (AIHW 2003:429; Brennan 1998:203). While long day care centres (along with pre-schools) continue to be the main providers of formal child care to under school-age children, there has been an overall shift from community-based to private centres. Family day care has also grown, as has the outside school-hours program (AIHW 2003:429). Despite this growth in formal care, informal carers, such as grandparents, are the main form of child care used, especially by parents of very young children and those with school-aged children (ABS various-a) .

Labour Market

Part-time work is often used by working mothers in Australia, for those with young children as well as older children. Of all employed women aged 25 to 54, 42 per cent worked part-time in 2000. Amongst those with one child aged under 15, 54 per cent worked part time and of those with two children 63 per cent worked part time (OECD 2002). Over time, the proportion working part-time has not changed much for women aged 25 to 54, but because of the increased employment overall, there has been a significant increase in the number of women working part-time[3].

Restructuring of the labour market has been an important feature of the labour market throughout this period, with a continuing availability of jobs in the services industry, including those in clerical, sales and services occupations. With these jobs being particularly suited to part-time work, the growth of these jobs has been related to the increased number of part-time jobs available.

Women's wages underwent significant growth in the 1970s, relative to men's, following equal pay decisions. At 1980, the female full-time wage was about 79 per cent of the male full-time wage. There was further reduction in the gender wage gap throughout the 1980s and at 1990 the female to male rate was almost 83 per cent. Less change occurred

[2] In particular, a significant number of places in private centres are likely to be excluded from the pre-1991 statistics.

in the 1990s, with the rate fluctuating between 83 and 85 per cent (ABS 1992; ABS 2003a).

Industrial relations, Equal Opportunity and Affirmative Action

In the early 1980s, Australia's highly centralised system of wage-fixing was the means by which most conditions of employment were set. Since this time, there have been widespread changes with the deregulation of the labour market, particularly since the 1990s, through the introduction of enterprise bargaining as a means of setting wages and conditions.

Access to unpaid parental leave is currently legislated in Australia, such that 12 months unpaid leave is available to mothers on the birth of a child. This leave, since its introduction in 1979, was initially only available to permanent part-time or full-time employees. Casual employees with at least 12 months continuous service were awarded access to unpaid parental leave in 2001 (Sex Discrimination Unit 2002). Paid maternity leave is not universally available, but is only available to those who have it as a condition of employment. In 2000, 71 per cent of female employees in the public sector had access to paid maternity leave, compared to only 36 per cent of those in the private sector (ABS 2003b).

Separate legislation designed to improve the situation for women in the labour market developed outside the industrial relations system. The Sex Discrimination Act was passed in 1984 and the Affirmative Action Act in 1986 (Meyer, Moyle, and Golley 1996). These initiatives have removed some of the discriminatory employment and promotion practices that previously existed, opening up more opportunities for women (Strachan and Burgess 2000).

Income support

The income support system, and the related system of family payments, has changed numerous times in this twenty year period. Major changes to unemployment benefits have occurred over this time, particularly in 1995 when access to unemployment benefits was individualised. Prior to 1995 partnered unemployment benefit recipients with a not-working spouse had been able to access the 'married rate' of payment (equal to twice the

[3] Based on author's calculations using age-specific rates of part-time employment from the August reports of the monthly labour force statistics (ABS various-b).

individual rate). From 1995 each member of the couple had to qualify in their own right. It was hoped this would encourage some wives of unemployed men to take up employment[4]. Where these couples were responsible for children, a new income support payment (Parenting Allowance, later renamed Parenting Payment) could be paid to the primary carer if income criteria were met. This payment was also made available to women with low income earning partners, where they were the primary carers of children.

On the family payment side, what started out as universal has now become more targeted, with more generous payments made to low income parents. Payments to single-income families have also grown, especially in recent years, where families with young children who have only one income-earner are eligible to receive an income supplement.

The complex interaction of income support, family payments, income and taxation throughout this period has led to serious problems relating to high Effective Marginal Tax Rates (EMTRs)[5]. Some changes have exacerbated the EMTRs, while other changes to income tests over this period have attempted to alleviate the problem. Research does, however, show that EMTRs continue to be a problem.

Women and Employment, Literature Review

The factors thought to be influential in predicting the employment of partnered mothers have been selected according to the literature on women's labour supply, as summarised below.

Children

Children are universally found to have a negative effect on partnered women's employment in industrialised countries (for example, Browning 1992; Ellingsaeter and Ronsen 1996; Lehrer and Nerlove 1986; Leibowitz and Klerman 1995; Nakamura and Nakamura 1994; Wenk and Garrett 1992). Australia is no exception, where women continue to take primary responsibility for child-rearing (Baxter 2002; Bittman 1992).

[4] My unpublished analysis of this census data suggests this may not have had a great impact.

[5] EMTRs are a measure of how much of an additional dollar earned is lost in extra tax and withdrawal of government assistance. This paper does not attempt to describe or analyse changes in EMTRs in Australia. For more information refer in particular to (Beer 1998; Beer 2002; Ingles 1997; Polette 1995)

Partnered mothers, especially those with younger children, have a lower labour force participation rate (Brooks and Volker 1985; Evans 1988). Employment decisions also tend to be related to the number of children; mothers with more children are generally more likely to be at home.[6]

The availability of affordable, high quality child care, whether formal or informal, enables some mothers to work while their children are young, or to work longer hours than they could otherwise. It is possible, then, that with increased availability of child care, more women with children would be working.

Education

Overall, persons with higher education are more likely to be working: a finding that is undisputed in Australia as it is in other industrialised countries. The most obvious connection between education and work is in the effect of education on earnings. Higher levels of education are associated with higher earnings potential, and therefore women with more education have more to lose by not working. It is therefore expected that, other things being equal, women with higher education are more likely to be working. Based on this connection between education and wages, some studies use education as a proxy for potential wage, on its own or in conjunction with other variables (Evans 1988; Eyland *et al.* 1982).

Women with low education, and therefore probably low earning potential, face a lower opportunity cost of not working. In fact, for some women in Australia, depending on their partner's labour force status and income, their family circumstances and the set-up of the income support system of the time, *not working* may actually result in a higher net income to the family because of the effect of EMTRs and the costs of working.

Higher education can also reflect a greater commitment to a career, as distinct from a job which has no future track for advancement or increased earnings over time (Brewster and Rindfuss 2000). A higher education may also be associated with more interesting and fulfilling work. Higher education can be associated with more modern views of working

[6] There is another possibility, however, in that women with more children may seek employment to meet some of the direct financial costs of bringing up children. For example, Eyland, Mason and Lapsley (1982) found in their analysis of female labour supply in a region of Sydney, Australia, that more children had a negative association with employment up to four children, with increased participation by women with five or more children.

women or mothers, representing a cultural or feminist influence (Evans 1988; Evans 1996), and on the demand side, employers may prefer more highly educated people for a job, meaning the more highly educated are selected into employment (Miller 1993; O'Donnell 1984).

Wages

According to economic theory, a women who can command a higher wage will be more likely to work, although the point at which this wage is sufficient to draw her into employment will vary for different women according to personal and family characteristics and tastes for work (Daly 1990; Ross and Saunders 1990). As the wage rates increases, so does the opportunity cost of not working and this is relevant when comparing women with different earnings profiles, and also comparing changes in the wage profile across time where changes may mean increasing wage rates for women.

Studies in Australia which have attempted to explain the increase in female labour supply in terms of the changing female wage rate have largely been unsuccessful (Daly 1990), although other studies of cross-sectional data show that the wage rate is an important determinant of female labour supply (Birch 2003; Gregory, McMahon, and Whittingham 1985; Miller and Volker 1983). Elsewhere, the increasing wage rate has been linked to increases in employment by women: for example, in the United States Mofitt (1984) found that changes over time in female labour supply were a result of the upward shift in the wage profile. There are numerous other United States studies with similar findings (for example, Leibowitz and Klerman 1995; O'Neill 1981; Shapiro and Shaw 1983; Smith and Ward 1985).

Unfortunately, wage data is not available in the census, only total income, with only an aggregate measure of hours worked. Wage data are not included in the models presented in this paper, which is consistent with other analysis of female labour supply using the Australian census data (for example, Brooks and Volker 1985; Gray, Qu, Renda, and de Vaus 2003). The reduced form models that I use assume that other characteristics, in particular, education, provide a proxy for the potential wage rate.

Partner income and labour force status

We cannot forget that the wife is unlikely to be making decisions about labour supply in isolation of other family financial considerations, most importantly other sources of family income[7].

Before discussing the effect of husband's income, it is first worth pointing out that husband's labour force status is also important. Wives of unemployed men typically have much lower rates of labour force attachment (Jordan 1993; King, Bradbury, and McHugh 1995). This relationship has received considerable attention both nationally (for example, Bradbury 1995; Gregory 1999; King *et al.* 1995) and internationally (for example, Micklewright and Giannelli 1991) but will not be explored in detail here.

Turning to husband's income, numerous Australian studies have shown that the husband's wage is negatively associated with the employment of the wife (Brooks and Volker 1985; Evans 1988; Gray *et al.* 2003), but the international literature shows that the relationship is not necessarily straight-forward (see Lehrer and Nerlove 1986 for a review of the effect of husband income). For example, some studies evaluating the effect of husband's income find that it is more significant, or sometimes only significant, after the first child is born. Abroms and Goldscheider (2002) found that in the United States, partner's income only had the expected negative effect when the couple was partnered rather than cohabiting.

It is likely that the lower employment amongst higher income husbands reflects a reduced need for these wives to work. When the husband's income is sufficient to meet financial obligations the wife has more choice in whether to remain at home or to work, when the husband's income is very low there is a greater need to supplement his income with income from another source.

Most studies report that wives are less sensitive to their husband's income than they are to their own wage rate in predicting labour force participation (Leibowitz and Klerman 1995; Mincer 1962). Considering this relationship over time is more complex. Leibowitz and Klerman (1995) find that over time the effect of wife's own earnings has increased

[7] Other family income is also often found to be a significant predictor of employment (for example, Ross and Saunders 1990; Scutella 2000). This is not applicable in the census data as the income measure includes unearned and earned income and the sources of income cannot be identified.

while that of her husband has decreased. In relating this to aggregate changes over time they observe that even if wages were increasing equally for men and women, an overall increase could be expected to have a positive effect on the labour force participation of women (Leibowitz and Klerman 1995).

Migrants

A number of Australian studies have investigated the labour force behaviour of migrant women, and how it differs to Australian-born women, for example (Evans 1984; Evans 1988; Shamsuddin 1998; VandenHeuvel and Wooden 1996; Wooden and VandenHeuvel 1997). These studies overwhelmingly demonstrate the need to control for migration status, and this is particularly important given changes over time in the labour force status of migrant women.

In the Australian labour force in the 1970s migrant women made up one-third of the labour force. They, especially women from non-English speaking backgrounds (NESB) and recent arrivals to Australia, were largely employed in manufacturing (OECD 1981). Migrant women were more likely to be employed than Australian born women, with migrants from non-English speaking countries the most likely to be employed. Since this time, jobs in the manufacturing sector have declined, and so has the employment of these women. Migrant women, particularly those from NESB speaking countries, are now less likely to be working than Australian-born women (Shamsuddin 1998; VandenHeuvel and Wooden 1996). Shamsuddin (1998), VandenHeuvel & Wooden (1996) and Birch (2003) provide comprehensive reviews of the reasons for the differential employment of migrants in Australia.

Marital Status

In the majority of studies of female labour supply, marital status is considered in terms of married or cohabiting versus single. The focus in this paper is on partnered women, so single women are excluded from the analysis, but women can be classified as married or cohabiting. In a study in the United States by Abroms and Goldsheider (2002), cohabiting women were found to have different patterns of labour force participation compared to otherwise equal married women. The cohabiting women were much more like single women in their behaviour, for example, not reducing their labour supply based on other family (usually partner) income. Given the rapid increase in cohabitation amongst young

women in Australia, it will be interesting to determine whether this is also the case in Australia, or if women in cohabiting and married relationships are similar in the supply of labour.

Housing

Studies have shown there is a positive relationship between mortgage repayments and labour supply (for a review see Birch 2003). For example, Conolly (1996) found that a decrease in home loan affordability had a positive impact on full-time labour force participation of women. Renters, on the other hand, have been found to have a lower probability of working (Dawkins, Gregg, and Scutella 2002; Scutella 2000).

Decomposing the Probability of Employment

This paper follows from similar work undertaken on Australian and international literature in which the change in labour force participation in a particular subgroup is decomposed into the effect of changing coefficients (behaviour) and the effect of changing characteristics. There are limited examples in the Australian literature, with the most recent published work being an analysis of the changing determinants of employment amongst single and partnered mothers by Gray *et al.* (2003). Gray *et al.* use census data, as was done in this analysis, using 1986 and 1996 data. They fit a multinomial logistic regression to model the full-time work, part-time work, unemployed, not in the labour force distinction, and using slightly different covariates. The results of this analysis showed that between 1986 and 1996, amongst couple mothers, less than half of the increase in full-time employment and part-time employment was due to the effect of changing characteristics. In the case of part-time work in particular, much more of the increase was explained by changing coefficients. The analysis presented here is different, in that it concentrates only on the employment decision of a more restricted population, and it extends other work but comparing determinants of employment using data from five census years, covering a span of 20 years, 1981 to 2001.

The international literature contains examples of decompositions, with most comparing two populations, or two points in time. For example Dooley (1994) examined changes in the labour force participation of partnered and lone mothers in Canada using a decomposition. Leibowitz and Klerman (1995) decomposed the change in labour force participation of partnered mothers in the United States, including a measure of predicted

wage to capture the effect of the changing wage rate. This was found to be particularly important in explaining changes over time.

THE DATA

The analysis uses the Australian Census confidentialised one percent sample unit record files for every five yearly Census between 1981 and 2001. To analyse these data, the files were converted into a format in which the female was the central focus of the data. Merged onto each female's record were details of her partner if she had one, and her children, if she had any. Other family or household level information was also matched where relevant. Children records were identified as those where the respondent was aged under 15 or a full-time student aged 15 to 24. In each year, a small number of records were excluded from the analyses where there proved to be difficulties with the matching, or other aspects of the data that appeared to be incorrect.

For this analysis only partnered (married or cohabiting) women aged 25 to 29 were included, and the sample size for each year is given below. Full-time students were excluded from the analysis, as it was expected that their employment decision was likely to be more a factor of their student status than other variables. To look at how employment has changed for these women, the employed women were compared to those not in the labour force (that is, those women not looking for work and/or not available to start work in the reference period). Unemployed women and those with not stated labour force status were excluded. The unemployed are more difficult to model, given in some ways they are like the employed, because they want to work, but in others like those not in the labour force, because they do not have a job.

Table 1 Sample Numbers, Partnered Women Aged 25 to 29, Australia, 1981 to 2001

	1981	1986	1991	1996	2001
Total Partnered Women Aged 25 to 29	4049	4383	4224	3848	3591
Exclude -					
Full-time students	21	34	75	83	88
Unemployed	80	187	223	165	103
Labour Force Status unknown	88	134	106	35	19
Retained sample includes					
Employed	1787	2205	2488	2377	2392
Not in the Labour Force	2073	1823	1332	1188	989
Total	3860	4028	3820	3565	3381

The labour force status data item was used for each census year, comparing the employed to those not in the labour force. The employment decision is modelled on each year's data separately using logistic regression. The models include as covariates information on the numbers and ages of children, level of education, partner income and labour force status, migration status, marital status and housing details. A description of each data item is given below. The distribution of the sample in each category is given in Appendix 1 Table 1.

The age of the youngest child has been used as a categorical variable, breaking down the ages into fairly fine groupings and separating out the under 1 year olds. Because the age of these mothers was quite young, there was no need to separately identify mothers with older children, and therefore the category aged 7 and over was used. The number of children was also entered in the model. All children information refers to those children at home on census night.

Education was a key variable in this analysis, and for the years 1981 through to 1996 the census enabled the creation of fairly comparable measures, although various changes to the education system through this time had implications for which post-secondary qualifications were recorded as bachelor degree and which were recorded as other post-secondary[8]. For those who did not complete secondary school, the age left school was used as an indicator of whether they left school early or not. Unfortunately, age left school does not provide an exact measure of whether secondary school was completed[9], and for this reason a new question was substituted in 2001, asking for highest level of school completed. The data from all years was examined to compare age left school and highest level of school completed by birth cohort, and using this analysis, the category of left school early was based on those who left school before age 17 in 1981 to 1996 data, and those who completed less than year 12 in 2001 data.

The partner work and income variable first differentiated between those whose husbands work and those whose husbands do not work, allowing for the lower expected

[8] For example, nursing and teaching degrees changed to being counted in the bachelor degree or higher between 1986 and 1991 (ABS 1994).

employment of women with non-working husbands. For those that do work, the husband's income was categorised as low, medium or high. These measures were derived by analysing the distribution of incomes to judge at which point the cut-offs should be applied.[10] The low income group was husbands with income below $200 per week (1981 $AU) and the high income group was those with incomes above $550 per week (1981 $AU). Further to this, in testing various models, it was found that the effect of having a low income partner only applied in families with children. Instead of using interaction terms, which would be complicated to interpret, the variable was constructed to differentiate those with low-income husbands into those with children and those without.

Marital status, that is, whether cohabiting or married, was used as a dummy variable. The derivation of this data item was straightforward for more recent census years which contained details on social marital status as well as legal marital status. For earlier census years, social marital status was not coded, but the family coding enabled the identification of women in couples, and those that stated they were not legally married were coded as cohabiting.

For the housing data, the classification into owner/purchaser, renter or other was straightforward from the census questions. To classify the mortgage payments as low, medium or high, the distribution of mortgage payments was analysed for each year, and the point at which about 35% of the sample fell below this point became the cut-off for low repayments, and the point at which 10% fell above became the cut-off between medium and high repayments[11]. Persons who owned their home outright were included in the no or low mortgage category.

To look at migration status, two indicator variables were used. One measures English Language Proficiency and the other measures duration of residence in Australia. Those with poor English language skills are flagged, and compared to all others. These others

[9] School completion age varies across States, and has varied across the years also.
[10] The process was complicated by the fact that income was collected in ranges in the census, and those ranges changed from one year to the next. The midpoint was used in each case except in the category for negative income, which was included in some, but not all, years. A zero value was used for this category. The values were converted to 1981 dollars using the Consumer Price Index. The categories were used, rather than a continuous variable, to more clearly see the difference between low income families and others.

may or may not speak a language other than English at home, but it was found that those with good or very good English Language proficiency were very similar to those who only spoke English, holding all else constant, so to keep the model simple, they were not separately identified. Since 1981 there have been some changes in the recording of duration of residence (year of arrival in some years), and how that data are made available on the sample file. As a result there is some difference in categories across years. The category of 'recent arrival' captures those that arrived in Australia in approximately the last 5 years. Medium and long term migrants, and Australian born women were combined.[12]

METHODOLOGY

An initial examination of the relationship between each of the covariates and the rate of employment was done by simply looking at the proportion employed across all variables. The covariates used were age of youngest child, number of children, education, English language proficiency, year of arrival in Australia, partner's work and income status, housing details and marital status.

The same data were used in a multivariate analysis using logistic regression. Logistic regression is appropriate given that the dependent variable, the probability of being employed is binary. This model fits the odds of being employed to the set of covariates, as shown below. A separate model was fit for each census year, resulting in a different set of parameter estimates for each year.

$$\log \frac{{}_{y}P}{1-{}_{y}P} = {}_{y}a + {}_{y}bX_1 + {}_{y}cX_2 + \ldots$$

where ${}_{y}P$ is the estimated probability of being employed in year y.

[11] Note that this was done for the sample of all women aged 20 to 49, not just those partnered aged 25 to 29, which explains why the distribution by these categories does not reflect this distribution.
[12] While medium/long term migrants could be separately identified from Australian-born women, the coefficients were not significant, so their was no advantage to separating them.

To calculate predicted probabilities using the estimated coefficients, the following formula is used.

$$ {}_yP = \frac{\exp ({}_ya + {}_yb X_1 + {}_yc X_2 \ldots.)}{(1 + \exp({}_ya + {}_yb X_1 + {}_yc X_2 \ldots.)} $$

To calculate the overall predicted probability of employment, the mean of the characteristics are used in place of the X values. Because almost all the covariates are categorical variables, which have been represented in the model by dummy variables, the means of the X values actually represent the sample distribution within each category.

Using this method, the predicted probabilities can be calculated by varying the X values to contain mean values from other years, while holding constant the parameter estimates. A comparison of the value obtained using the new predicted value with the original predicted value from each of these years provides an estimate of how much of the variation between the two years is due to different characteristics. A similar process can be followed by holding characteristics constant and varying only the coefficients to yield estimates of the effect of the coefficients.

If we use the notation ${}_yP_z$ to represent the predicted value using coefficients from year y and characteristics from year z, this decomposition of the difference between ${}_yP$ and ${}_zP$ into the effect of coefficients and the effect of characteristics can be written as follows.

$$ {}_yP - {}_zP = {}_yP_y - {}_zP_z \quad \textit{total difference} $$
$$ = {}_yP_y - {}_yP_z \quad \textit{difference in characteristics} $$
$$ + {}_yP_z - {}_zP_z \quad \textit{difference in coefficients} $$

This method has been used to analyse the change between 1981 and subsequent census years, and to calculate to what extent characteristics have influenced change and to what extent coefficients have.

RESULTS

Determinants of Employment

The results of the logistic regressions are found in Table 2, and the rate of employment for each year by each of the variables, is presented in Table A2 in Appendix A. As Table 2 shows, the models fit reasonably well, with a McFadden's R-square of 0.20 in 1981, increasing each year up to 0.33 in 2001. Each of the variables has a strong association with employment, although some variables are significant in some years but not others, and the direction of the relationship is as expected.

To evaluate how the effect of the different variables has changed over time, the coefficients were compared across all years using a Wald statistic, as summarised in Table 3[13]. This test does not consider the direction of the difference, so this table needs to be looked at in conjunction with the model parameters in Table 2 to understand the nature of the changes. The following sections review the results as they relate to the direction and size of the coefficients, and how they have changed over time, also considering the overall probability of employment as reported in Table A2.

Children

The presence and age of children have a strong effect on employment. Women with no children have the highest employment rate, while those with young children have the lowest. Looking at the employment rate as reported in Table A2 Appendix A, the employment rate has increased over all partnered women – even those with no children have increased their employment rate over this 20 year period, as have those with very young children. This means that when employment of mothers of young children is analysed *relative to* those partnered women with no children there has been very little change which is what we see in the coefficients. They are similar enough across years to be, in most cases, not significantly different.

The number of children has the expected effect, more children being associated with a lower rate of employment. Over time there have been increases in employment of those with no children, and those with one or two children, but no increase is evident amongst those with bigger families. In 1981 the number of children variable was not significant,

[13] Age of youngest child, education and marital status have been excluded from this table, as there was very little difference across the years in these coefficients.

Table 2 Parameter Estimates, Logistic Regression on Employment of Partnered Women aged 25 to 29, 1981 to 2001

	1981	1986	1991	1996	2001
Age of youngest child (no children is the reference category)					
less than one	-2.925 ***	-2.563 ***	-2.615 ***	-2.783 ***	-2.606 ***
1 to 2	-2.275 ***	-1.913 ***	-1.707 ***	-2.029 ***	-1.902 ***
3 to 4	-1.819 ***	-1.661 ***	-1.691 ***	-1.503 ***	-1.404 ***
5 to 6	-1.295 ***	-1.099 ***	-1.280 ***	-1.671 ***	-0.782 **
7 and older	-0.984 ***	-0.810 ***	-0.752 **	-1.302 ***	-1.139 ***
total number dependants	-0.078	-0.300 ***	-0.415 ***	-0.420 ***	-0.438 ***
Highest level of education (incomplete secondary is the reference category)					
graduate or higher	1.204 ***	0.926 ***	1.192 ***	1.115 ***	0.987 ***
other post-secondary	0.715 ***	0.649 ***	0.488 ***	0.455 ***	0.599 ***
finished secondary	0.243 *	0.241 *	0.176	0.224 *	0.482 ***
not stated	0.006	0.430	0.472	0.534	1.099
English Language Proficiency (good/only English is the reference category)					
poor English	0.397	-0.332	-0.984 ***	-0.990 *	-1.328 ***
Year of arrival (not recent migrant/Australian is the reference category)					
recent migrant	-0.428 *	-0.398 *	-0.732 ***	-1.046 ***	-1.069 ***
Partner work and income (medium income status is the reference category**)**					
no work	-0.972 ***	-1.280 ***	-1.326 ***	-1.295 ***	-1.341 ***
low income no child	-0.132	0.308	0.003	-0.152	0.599
low income has child	1.009 ***	0.629 ***	0.602 ***	0.117	-0.160
high income	0.281	-0.400	-0.470	0.210	-0.665 ***
not stated income	-0.271	-0.537 **	-0.331	0.100	-0.212
Housing (Renting is the reference category)					
Owner/purchaser low mortgage	0.093	-0.039	0.004	0.375 **	0.130
Purchaser, medium mortgage	0.131	0.146	0.350 **	0.466 ***	0.281 *
Purchaser, high mortgage	0.679 ***	0.708 ***	0.897 ***	1.252 ***	0.947 ***
Other housing	-0.145	-0.075	0.145	0.229	0.353
Marital Status (Cohabiting is the reference category)					
Married	-0.228	-0.289	-0.294 *	-0.076	-0.258 *
Constant	1.319 ***	1.904 ***	2.450 ***	2.307 ***	2.458 ***
McFadden's R-squared	0.205	0.249	0.285	0.314	0.327
Chi-squared	1094	1383	1410	1423	1337
Log-likelihood full model	-2118	-2082	-1765	-1557	-1375
N	3860	4028	3820	3565	3381

legend: * p<0.05; ** p<0.01; *** p<0.001

Table 3 Significance of Wald Statistic, Comparing Coefficients Across Years

compare this year's coefficients	1981				1986			1991		1996
with this year's coefficients	1986	1991	1996	2001	1991	1996	2001	1996	2001	2001
total number dependants	**	***	***	***						
English Language Proficiency										
poor English		***	**	***			*			
Year of arrival										
recent migrant			*			*	*			
Partner work and income status										
no work										
low income no child										
low income has child	*	*	***	***		***	***	**	***	
high income	*	*		***						*
not stated income						*				
Housing										
Owner/purchaser low mortgage						*		*		
Purchaser, medium mortgage			*			*				
Purchaser, high mortgage			**			*				
Other housing										
						*		*		
Constant	*	***	**	***	*		*			

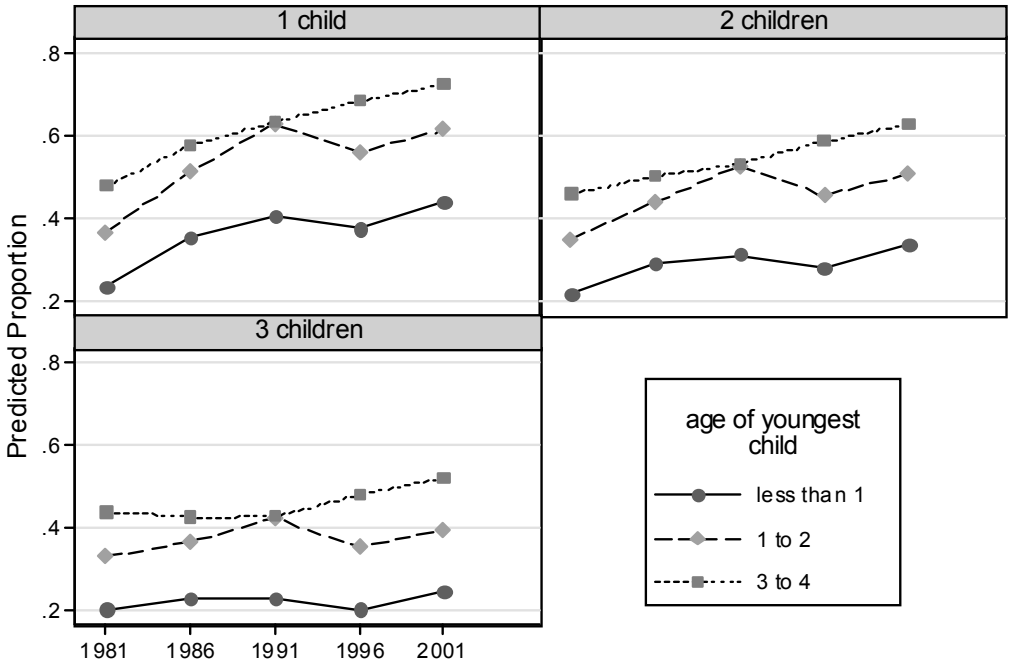
legend: * p<0.05; ** p<0.01; *** p<0.001
age of youngest child=1 to 2 was different at 0.05 level comparing 1981 and 1991;
age of youngest child =5 to 6 was different at 0.05 level comparing 1996 and 2001

reflecting the smaller differences between the employment rates of those with 1 child, 2 children or 3 or more children in this year. With the increased rates of employment for 1 and 2 child families in subsequent years, the coefficient on the number of children becomes significant.

Figure 2 shows the predicted probabilities of being employed in different family types, varying only the numbers and ages of children. Overall, employment has increased amongst mothers of young children, particularly those with smaller families. The reasons for this increase may be linked to increased availability of child care, or changes in the preference for work or the need to work amongst young mothers.

During the 1980s there were increases in employment in 1-child families, and this increase continued in the 1990s for those with a youngest child aged 3 to 4. For 1-child families with younger children, there was a fall in employment between 1991 and 1996, followed by increases again between 1996 and 2001. The pattern of change was very similar in 2-child families, although the increases in employment were not as sharp as in the one-child family, resulting in a bigger disparity between one-child and two-child families by the end of the twenty years. In 3-child families, there was some increase in employment between 1996 and 2001, and also in the preceding 5-year period for those with youngest child aged 3 to 4. The gains in employment are certainly less evident overall amongst women in these larger families, and their probability of employment is considerably lower than women in otherwise similar families in 2001.

Figure 2 Predicted Proportion Employed by Child Numbers and Ages, 1981 to 2001, Partnered Women Aged 25 to 29 with youngest child aged less than 5



source: ABS census sample files
note: other variables set at married, non-migrant,renter, average partner income, post-school education

Education

As expected, more education means a higher probability of being employed, and changes over time have been experienced in all education categories. Because the increase in

employment was across all levels of education, there was no apparent change in the relative odds of employment, using those with incomplete secondary as the base. Even with vast improvements in education, the balance of who is employed and who is not has not altered with respect to education. For example, the least educated are no less likely to be working than their counterparts of twenty years ago, relative to those with higher education.

Migrants

The effect of the migrant variable is as expected, with those with poor English language skills slightly (although not significantly) more likely to be employed in 1981. Over the years, the employment opportunities for these women have declined, and this is evidenced in the declining employment of these women relative to those with good or only English language skills. In 1991 and subsequent years, those with poor English language skills were significantly less likely to be employed. This pattern of worsening employment opportunities for migrants is seen also in the year of arrival variable, with recent migrants increasingly being less likely to be employed than women who were born in Australia, or who have lived in Australia longer. The employment of recent migrants was significantly lower in 1996 and 2001 compared to previous years.

Partner work and income

Women who had a non-working partner were the least likely to be working, and this has not changed over time. The effect of having a low-income partner is only important to couples with children. Women in low-income couples with no children do not behave significantly differently from those with a medium income husband.

Having a child and a low income husband, however, results in a much higher labour force participation, compared to couples where there is a medium-income husband in the years 1981, 1986 and 1991. In 1981, when the employment is the highest for these women, there was very little support provided to these families through the income support system. These families received the universal family payments, but received no supplements for being low income. In many cases, the husband's income combined with family payments was insufficient, and the wife had to work even if she preferred to be at home with young children. By 1986 there had been some developments, with additional family payments made available to low income families, and this extra assistance may

account for the fall in employment amongst these women between 1981 and 1986 – this extra assistance may have been enough to enable some families to manage without the wife's income. Interestingly, this is no longer the case in 1996 and 2001, when the income support system has changed, providing a new income support payment (Parenting Allowance, changed in 1998 to Parenting Payment) to low income working families with children. Parenting Allowance was intended to improve workforce incentives for unemployed couples, and to provide choices about employment to carers of young children, so that they could remain at home if they preferred (Stanton and Fuery 1995). It appears that this payment did make a significant difference.

Housing

Those most likely to be employed in all years are those who have high mortgage repayments. The high mortgage repayments may, of course, reflect the greater ability of those with working wives to commit to higher repayments, but from these data we cannot ascertain which came first, the employment or the mortgage.

There was less variation between the other categories of housing, although there is some evidence that renters, along with those in 'other housing', experience lower rates of employment than other home owners or purchasers in some years.

Marital Status

Marital status is not a particularly important variable in this analysis, although it is significant in 1991 and 2001. It shows there is some tendency for married women in this age group to be less likely to be employed than their cohabiting counterparts, holding all else equal. Various interaction terms with this variable were examined, but none proved necessary. There was no evidence that the partner income variable was influenced by the marital status variable, as was found by Abroms & Goldscheider (2002) for the United States.

The constant term

Looking just at the logistic regression results (Table 2), what has changed the most in the coefficients is the size of the constant term. The difference across years is significant between 1981, 1986 and 1991, and after this it is more stable. What is being captured in this constant term? The main item not included in these models, but possibly related to the increased employment of women, is the predicted or potential wage rate. It was hoped

that the education variable would be a proxy for wage rate, and therefore capture any improving returns to education, but if female wage increases applied across different education groups fairly evenly, the constant term would pick up any effect this had. This appears to be the case given that there were no improvements in returns to education over this period, according to the lack of change in the coefficients on education.

Another significant change in the labour market over this period that was not captured in the model was the vast increase in the availability of part-time jobs. Related to this was the continuing effect of the restructuring of the labour market which meant more jobs in those occupations and industries often undertaken by women. These demand influences are likely to have a large effect in drawing women into the labour market, and do not necessarily differentiate by any of the personal characteristics in the model.

In the introduction I provided an overview of the relevant policy and legislative changes that occurred over this twenty year period. The legislative changes to remove sex discrimination applied to all women and could have had a positive impact on female employment. Beyond this, and the effect of increasing wages, the other changes do not explain this movement in the constant term. While the introduction of Enterprise Bargaining in the 1990s has been linked to changes in earnings for women (and men), it is unlikely that it has affected the probability of employment. The most important policy changes for mothers are the child care developments, however there is no reason to expect this policy change would increase the employment probabilities of those without children, so could not be expected to be captured in the constant term.

Of course the other point about the constant term is that it can also be thought to represent a measure of taste for employment. Growing over time, then, this term could reflect a changing preference for work, or a growing acceptance of working wives and working mothers. There is probably some truth in this, but it seems unlikely that this effect would have grown strongly throughout the 1980s, to then level off, so it is more likely this effect accompanied the other demand effects through this period.

Summary

To summarise what changed between 1981 and 2001, the coefficients captured some of the changes that occurred in this period, with labour market behaviour being modified in

some groups of the population. In particular, families which included migrant wives or those with a low income husband (or male partner) and children, varied in their labour market behaviour over time, responding to the changing labour market and/or the changing income support system.

Other variables changed little in their effect over time, notably the effect of education. The effect of children also demonstrated less change than perhaps expected, given that increases in employment occurred across various configurations of families by ages and numbers of children, except those with larger families. There was an increase in employment amongst partnered women with small families over this period, as seen in the predicted proportions working by age and number of child.

The change in the constant term in the 1980s could be said to capture demand and preference changes, and to some extent policy change, over the first ten years, with less change being evident in the last 10 years of the 1900s.

How has the composition changed?

The following sections look at how the composition of the partnered 25 to 29 year old women has changed in regard to the presence of children, education and marital status. These are the variables which have captured the greatest change over this twenty years. For the distribution of these and other variables refer to Table A1 in Appendix A.

Children

Fertility data for Australia for this period show a decline in fertility, and a tendency towards births at older ages (ABS 2002). This is also supported by these data. By 2001, a higher proportion of partnered women are childless compared with 1981 (48 per cent compared with 24 per cent). Those that do have children are likely to have fewer children. In 1981 31 per cent of partnered women with children had only one child, compared to 44 per cent in 2001. However, there is still a large proportion of women in this age group with young children, and the proportion with a child aged less than one, for example, fell only slightly between 1981 and 1996, from 19 to 18 per cent, and then to 16 per cent in 2001.

Education

In 1981 only 5 per cent of partnered women in this age group had a degree or higher, compared with 23 per cent in 2001, and at the other end of the scale, those with the

lowest levels of schooling has reduced from 56 per cent down to 23 per cent. There have also been increases in those with other post-secondary education and those with complete secondary education.[14]

Marital Status

There has been a very great change in marital status for these young partnered women between 1981 and 2001, with an increased tendency to live in cohabiting relationships. In 1981, marriage was almost universal (97 per cent) amongst those in a partnered relationship. The proportion of partnered women aged 25 to 29 who are legally married has fallen steadily between censuses to reach a rate of 71 per cent in 2001.

Summary

The changes in composition have most definitely been conducive to increased employment, particularly considering the increased levels of childlessness amongst the partnered women and also the increased levels of education. The following section brings together this and the previous section, to demonstrate the extent to which changing behaviour, as reflected in the coefficients, and changing characteristics have had an impact on the overall change in the probability of employment.

Decomposition

The following chart presents the basis of this analysis, that is, it shows how the predicted proportion employed varies under different scenarios. Comparing the numbers in each line from left to right is the effect of changing characteristics to reflect the mean characteristics in each year, while holding the coefficients constant. For example, the bottom line holds the coefficients at the 1981 level, and the left-most point is using the 1981 characteristics, the next to the right using the 1986 characteristics and so on until the final point on the right uses the 2001 characteristics. The top two lines are holding the coefficients at the 1991 and 2001 levels. The 1996 line has not been included to simplify the chart, as it falls between the 1991 and 2001 line. These results are summarised in Table 4.

[14] The slight fall in the proportion with complete secondary between 1996 and 2001 is more likely a reflection of the change in methodology between these two sets of data, rather than an actual fall in this period. To be directly comparable with 1996, the 2001 figure for complete secondary probably should be a little lower and the proportion with incomplete secondary a little higher.

Figure 3 Predicted Proportion Employed Varying Coefficients and Characteristics, Partnered Women and 25 to 29, Australia, 1981 to 2001

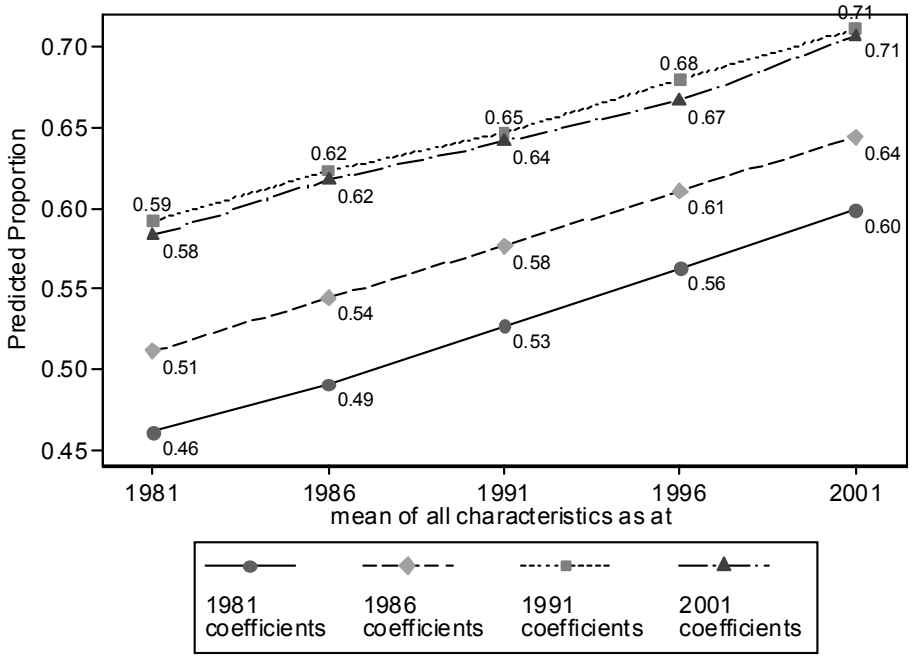


Table 4 Decomposition of Change in Predicted Proportion Employed, Comparing 1981 with all other years

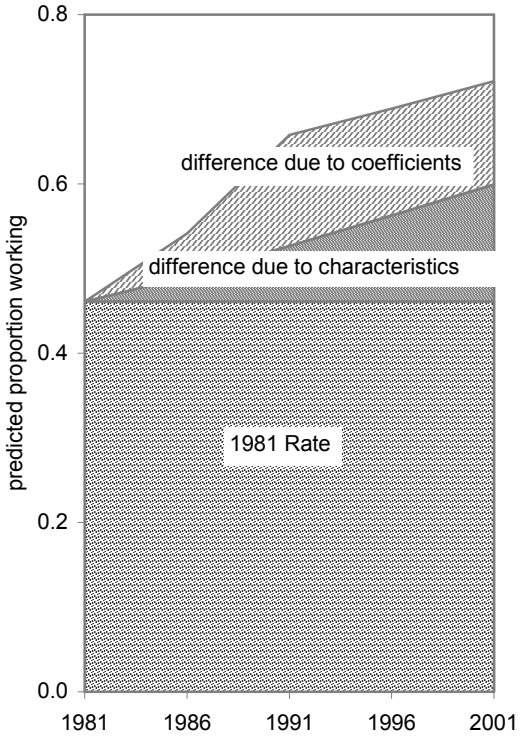
	1981	1986	1991	1996	2001
Predicted proportion employed	0.46	0.54	0.65	0.67	0.71
Standardised on 1981 coefficients (just vary characteristics)	*0.46*	*0.49*	*0.53*	*0.56*	*0.60*
Standardised on 1981 characteristics (just vary coefficients)	*0.46*	*0.51*	*0.59*	*0.59*	*0.58*
difference from 1981 proportion					
total difference from 1981		0.08	0.19	0.20	0.25
due to different characteristics		0.03	0.07	0.10	0.14
due to different coefficients		0.05	0.13	0.13	0.12

Table 4 and also Figure 4 show how the result of these predictions can be used to decompose the change in the rate between 1981 and 2001 into the effect of changing the coefficients and changing the characteristics.

The employment rate of these young partnered women was 46 per cent in 1981. Changing characteristics have resulted in a gradual increase in participation between each census year, which on its own resulted in a 14 percentage point increase in participation from 46 per cent in 1981 to 60 per cent in 2001.

Changing coefficients accounted for a great deal of the difference between 1981 through to 1991, but after this, the coefficients have changed very little. Between 1981 and 1991 the coefficients were responsible for a difference of 13 percentage points, but there was no further increase due to the changing coefficients after this. (As seen in the adjacent graph, the coefficients still account for a great deal of the difference between 1981 and 1996 or 2001, but only because of the large contribution made to the difference between 1981, 1986 and 1991) . The overall rate of employment slowed its growth after 1991,and what growth there was has been driven by the changing characteristics.

Figure 4 Decomposition of the Predicted Proportion Working, Partnered Women Aged 25 to 29



SUMMARY AND DISCUSSION

This analysis provided an in-depth examination of the changing employment probabilities of partnered 25 to 29 year old women in Australia. By modelling the employment decision then calculating predicted probabilities while varying the values of the covariates, it was possible to break down the change in employment into the effect of changing characteristics and changing behaviour.

Changing behaviour had a large impact in the 1980s but not the 1990s. The change in the 1980s perhaps reflected improving wages of women, the introduction of legislation to

remove sex discrimination, improved access to child-care, improving access to part-time jobs, changes in tastes for work, or any combination of these. The lack of change in the 1990s may in part be related to the worsening affordability of child care during this period.

There have been notable changes in the behaviour of some parts of the population, as discussed earlier, with migrant women and women in low-income families experiencing significant changes in the probability of employment. For migrant women, this is most likely related to changes in the labour market, and for low-income families, changes in the income support and family payment systems are probably a major factor in influencing change.

The effect of young children on employment continues to be a significant one, with women withdrawing from work after child-bearing, however, the predicted proportions employed do show some increase in employment amongst partnered women with young children. Given the very great increases in child care availability since 1981, the increased probability of employment may reflect the take-up of this formal child care. It may also reflect an overall change in attitudes towards working mothers, and a growing preference by mothers to work throughout the childbearing years, or to resume work soon after childbearing.

The effect of changing characteristics has been important throughout the period from 1981 to 2001, being the only driver of change in the last 10 years of this period. The most important changes in composition were in relation to changes in patterns of childbearing and in the level of education: by 2001 women were more highly educated and more likely to have delayed childbearing, and therefore more likely to be employed. Without this change in characteristics, growth in the probability of employment amongst partnered 25 to 29 year old women would have been much lower in the 1980s, and would have been reduced to near zero in the 1990s.

APPENDIX A. DETAILED TABLES

Table A1 Partnered Women Aged 25 to 29, Distribution of Variables, Australia, 1981 to 2001

	Distribution (% of total)				
	1981	1986	1991	1996	2001
Total number dependants					
0	23.6	31.3	38.5	42.3	47.7
1	23.9	24.2	23.8	25.3	23.2
2	35.5	30.3	25.6	21.8	20.3
3 or more	17.0	14.3	12.1	10.6	8.8
Age of youngest child					
no children	23.6	31.3	38.5	42.3	47.7
less than one	18.7	18.7	17.0	17.8	16.0
1 to 2	29.5	29.2	25.7	24.4	21.8
3 to 4	15.3	11.3	11.0	9.2	8.5
5 to 6	7.9	5.6	4.6	3.7	3.7
7 and older	5.1	3.8	3.2	2.6	2.4
Highest level of education					
graduate or higher	5.0	6.5	9.4	14.9	22.7
other post-secondary	22.4	25.8	27.8	26.6	29.5
finished secondary	15.3	19.2	22.2	26.3	24.7
incomplete secondary	56.0	45.5	39.3	31.3	22.8
not stated	1.3	3.0	1.3	0.9	0.4
English Language Proficiency					
poor English	2.4	1.8	2.3	1.4	1.9
good/only English	97.6	98.2	97.7	98.6	98.1
Year of arrival					
recent migrant	5.3	5.0	8.7	6.1	6.8
not recent migrant/Australian born	94.7	95.1	91.3	93.9	93.2
Partner work and income status					
no work	5.4	6.8	9.7	9.2	6.8
low income no child	3.3	4.4	6.7	10.1	5.7
low income has child	13.3	12.1	11.0	16.9	9.0
medium income	72.5	67.6	63.4	55.5	66.2
high income	3.7	3.2	3.0	2.4	6.6
not stated income	1.8	5.8	6.2	5.8	5.7

(Table continued on next page)

Table A1 Partnered Women Aged 25 to 29, Distribution of Variables, Australia, 1981 to 2001 (continued)

	Distribution (per cent of total)				
	1981	1986	1991	1996	2001
Housing					
Renting	26.1	28.7	32.3	34.1	33.5
Owner/purchaser, no or low mortgage	14.0	14.9	16.2	18.0	18.0
Owner/purchaser, medium mortgage	37.7	33.4	30.0	30.9	30.1
Owner/purchaser, high mortgage	17.9	17.3	17.6	13.1	13.6
Other housing	4.3	5.8	4.0	3.8	4.9
Marital Status					
Married	96.8	91.0	85.3	79.3	70.5
Cohabiting	3.2	9.0	14.7	20.7	29.5
Total	100.0	100.0	100.0	100.0	100.0

Notes:
Excludes unemployed persons, full-time students and persons with not stated labour force status

Table A2 Partnered Women Aged 25 to 29, Employment Rate, Australia, 1981 to 2001

	Employment Rate (% employed)				
	1981	1986	1991	1996	2001
Age of youngest child					
no children	82.8	88.7	92.3	93.5	94.6
less than one	21.6	27.5	34.5	34.2	36.2
1 to 2	32.2	38.6	51.1	48.7	49.4
3 to 4	39.9	43.4	48.7	56.4	58.1
5 to 6	50.8	53.9	56.8	55.0	69.6
7 and older	58.3	65.3	71.5	69.5	65.4
Significance of difference	***	***	***	***	***
total number dependant children					
0	82.8	88.7	92.3	93.5	94.6
1	37.9	45.3	58.4	56.2	58.1
2	34.9	39.9	45.3	45.0	47.4
3 or more	30.3	26.4	30.5	27.9	28.0
Significance of difference	***	***	***	***	***
Highest level of education					
graduate or higher	72.4	75.7	86.6	89.0	86.8
other post-secondary	57.2	66.4	72.5	71.3	87.1
finished secondary	45.0	55.7	67.1	64.5	73.7
incomplete secondary	40.0	44.7	54.1	54.2	70.2
not stated	38.1	50.8	47.7	58.1	51.6
Significance of difference	***	***	***	***	***
English Language Proficiency					
poor English	46.2	37.0	36.6	31.3	31.3
good/only English	46.3	55.1	65.8	67.2	71.5
Significance of difference	-	**	***	***	***
Year of arrival					
recent migrant	46.0	54.7	60.4	57.0	56.9
not recent migrant/Australian born	46.3	54.7	65.6	67.3	71.8
Significance of difference	-	-	-	**	***

(Table continued on next page)

Table A2 Partnered Women Aged 25 to 29, Employment Rate, Australia, 1981 to 2001 (continued)

	Employment Rate (per cent employed)				
	1981	1986	1991	1996	2001
Partner's work and income status					
no work	27.6	25.9	33.2	34.2	38.9
low income (has no child)	79.2	90.6	92.4	93.1	96.4
low income (has child/children)	53.8	52.7	58.9	48.7	45.6
medium income	44.6	56.1	68.2	71.3	74.8
high income	53.9	53.4	70.1	79.5	73.2
not stated income	38.3	48.2	62.1	75.3	73.2
Significance of difference	***	***	***	***	***
Housing					
Renting	43.1	52.9	58.8	59.5	67.1
Owner/purchaser, no or low mortgage	43.3	49.4	59.0	64.8	67.0
Owner/purchaser, medium mortgage	43.1	50.4	65.0	67.7	70.2
Owner/purchaser, high mortgage	60.5	71.3	83.0	86.2	85.9
Other housing	43.3	51.9	61.7	63.6	70.5
Significance of difference	***	***	***	***	***
Marital Status					
Married	45.9	53.1	63.6	64.7	66.6
Cohabiting	60.0	71.6	74.1	74.2	80.7
Significance of difference	**	***	***	***	***
Total	46.3	54.7	65.1	66.7	70.7

Notes:
significance tests use an F-test from a one-way analysis of variance.
Excludes unemployed persons, full-time students and persons with not stated labour force status

REFERENCES

Abroms, L. C., & Goldscheider, F. K. 2002. More Work for Mother: How Spouses, Cohabiting Partners and Relatives Affect the Hours Mothers Work. *Journal of Family and Economic Issues, 23*(2), 147-166.

ABS (Australian Bureau of Statistics) 1992. *Average Weekly Earnings Australia, 1941-1990* (6350.0). Canberra: ABS.

ABS (Australian Bureau of Statistics) 1994. *1991 Census Data Quality: Education* (94/2). Canberra: ABS.

ABS (Australian Bureau of Statistics) 2002. *Births, Australia* (3301.0). Canberra: ABS.

ABS (Australian Bureau of Statistics) 2003a. *Average Weekly Earnings Australia, Time Series Spreadsheet, Table 1* (6302.0). Canberra: ABS.

ABS 2003b. Family and Community - Family functioning: Balancing family and work. In ABS (Ed.), *Australian Social Trends 2003*. Canberra: ABS.

ABS (Australian Bureau of Statistics) various-a. *Child Care Australia* (4402.0). Canberra: Australian Bureau of Statistics.

ABS (Australian Bureau of Statistics) various-b. *Labour Force, Australia* (6203.0). Canberra: Australian Bureau of Statistics.

AIHW (Australian Institute of Health and Welfare) 2002. *Trends in long day care services for children in Australia, 1991-99* (1740242165). Canberra :.

AIHW (Australian Institute of Health and Welfare) 2003. *Australia's welfare 2003*. Canberra: Australian Govt. Pub. Service.

Baxter, J. 2002. Patterns of change and stability in the gender division of household labour in Australia, 1986-1997. *Journal of Sociology, 38*(4), 399-424.

Beer, G. 1998. Is It Worth Working? The Financial Impact of Increased Hours of Work by Married Mothers with Young Children. *Australian Bulletin of Labour, 24*(2), 94-111.

Beer, G. 2002, 30 September - 3 October 2002. *Work incentives under a New Tax System: The distribution of effective marginal tax rates in 2002.* Paper presented at the 2002 Conference of Economists, Canberra.

Birch, E. R. 2003. *The Labour Supply of Australian Women* (Discussion Paper No. 1/03): Instititute for Research into International Competitiveness, Curtin University.

Bittman, M. 1992. *Juggling time : how Australian families use time : a report on the secondary analysis of the 1987 pilot survey of time use* (2nd ed.). Canberra :: Australian Govt. Pub. Service.

Bradbury, B. 1995. Added, Subtracted or Just Different: Why Do the Wives of Unemployed Men Have Such Low Employment Rates? *Australian Bulletin of Labour, 21*(1), 48-70.

Brennan, D. 1998. *The politics of Australian child care : philanthropy to feminism and beyond* (Rev. ed.). Cambridge ; Melbourne: Cambridge University Press.

Brewster, K. L., & Rindfuss, R. R. 2000. Fertility and Women's Employment in Industrialized Nations. *Annual Review of Sociology, 26*, 271-296.

Brooks, C., & Volker, P. A. 1985. Labour Market Success and Failure: An Analysis of the Factors Leading to the Workforce Destinations of the Australian Population. In P. A.

Volker (Ed.), *The Structure and duration of unemployment in Australia : proceedings of a conference, 4-5 August 1983* (pp. 43-71). Canberra: Australian Government Publishing Service.

Browning, M. 1992. Children and Household Economic Behaviour. *Journal of Economic Literature, 30*(3), 1434-1475.

Burke, S., & Redmond, G. 2002. *Women's Financial Independence: Australia in the 1980s and 1990s* (SPRC Discussion Paper No. 119). Sydney: The Social Policy Research Centre.

Conolly, G. 1996. Causality between consumer loan affordability and the female full-time participation rate in the Australian labour force. *Australian Bulletin of Labour, 22*(3), 183-193.

Daly, A. 1990. Women in the Workplace and Family Structure in Australia. *Journal of the Australian Population Association, 7*(1), 27-39.

Dawkins, P., Gregg, P., & Scutella, R. 2002, April 2002. *The growth of jobless households and the polarisation of employment in Australia.* Paper presented at the Towards Opportunity and Prosperity: 2002 Economic and Social Outlook Conference, University of Melbourne, Melbourne.

Dooley, M. D. 1994. The Converging Market Work Patterns of Married Mothes and Lone Mothers in Canada. *Journal of Human Resources, 29*, 600-620.

Ellingsaeter, A.-L., & Ronsen, M. 1996. The Dual Strategy: Motherhood and the Work Contract in Scandinavia. *European Journal of Population, 12*(3), 239-260.

Evans, M. D. R. 1984. Immigrant women in Australia: resources, family and work. *International Migration Review, 18*, 1063-1090.

Evans, M. D. R. 1988. Working Wives in Australia: influences of the life cycle, education, and feminist ideology. In J. Kelley & C. Bean (Eds.), *Australian Attitudes: Social and Political Analyses from the National Social Science Survey*. Melbourne: Allen and Unwin.

Evans, M. D. R. 1996. Women's labour force participation in Australia: recent research findings [Review article.]. *Journal of the Australian Population Association, 13*, 67-92.

Eyland, E. A., Mason, C. A., & Lapsley, H. M. 1982. Determinants of female employment. *Economic Record, 58*, 11-17.

Gray, M., Qu, L., Renda, J., & de Vaus, D. 2003. *Changes in the labour force status of lone and couple Australian mothers, 1983-2002* (Research Paper No. 33). Melbourne: AIFS.

Gregory, R. G. 1999. *Children and the changing labour market: joblessness in families with dependent children* (Discussion Paper No. 406). Canberra: Centre for Economic Policy Research, ANU.

Gregory, R. G., McMahon, P., & Whittingham , B. 1985. Women in the Australian Labor Force: Trends, Causes, and Consequences. *Journal of Labor Economics, 3*(1, Part 2: Trends in Women's Work, Education and Family Building), S293-S309.

Ingles, D. 1997. *Low Income Traps for Working Families* (Discussion Paper No. 363). Canberra: Centre for Economic Policy Research, ANU.

Jordan, A. 1993. Women's Earnings and Inequality of Family Income. *Social Security Journal*(March).

King, A., Bradbury, B., & McHugh, M. 1995. *Why do the Wives of Unemployed Men Have such low Employment Rates* (SPRC Reports and Proceedings No. 125). Sydney: Social Policy Research Centre, University of New South Wales.

Lehrer, E. L., & Nerlove, M. L. 1986. Female Labor Force Behavior and Fertility in the United States. *Annual Review of Sociology, 12*, 181-204.

Leibowitz, A., & Klerman, J. A. 1995. Explaining Changes in Married Mothers Employment over Time. *Demography, 32*(3), 365-378.

Meyer, P., Moyle, H., & Golley, L. 1996. *Work and Family: The Australian Experience* (Welfare Division Working Paper No. 13). Canberra: Australian Institute of Health and Welfare.

Micklewright, J., & Giannelli, G. 1991. *Why do women married to unemployed men have low participation rates?* Florence :: European University Institute.

Miller, C. F. 1993. Part-Time Participation over the Life-Cycle among Married-Women Who Work in the Market. *Applied Economics, 25*(1), 91-99.

Miller, P. W., & Volker, P. A. 1983. A Cross-Section Analysis of the Labour Force Participation of Married Women in Australia. *Economic Record, 59*(164), 28-42.

Mincer, J. 1962. Labor Force Participation of Married Women. In H. G. Lewis (Ed.), *Aspects of Labor Economics* (pp. 63-105). Princeton: Princeton University Press.

Moffitt, R. 1984. Profiles of Fertility, Labour Supply and Wages of Married Women: A Complete Life-Cycle Model. *Review of Economic Studies, 51*(2), 263-278.

Nakamura, A., & Nakamura, M. 1994. Predicting Female Labor Supply: Effects of Children and Recent Work Experience. *The Journal Of Human Resources, 29*(2, Special Issue: Women's Work, Wages, and Well-Being), 304-327.

O'Donnell, C. 1984. *The basis of the bargain : gender, schooling and jobs*. Sydney: George Allen & Unwin.

OECD 1981. *The Role of Women in the Economy*.

OECD (Organisation for Economic Co-operation and Development) 2002. *OECD employment outlook : June 2002* (9264130071). Paris: Organisation for Economic Co-operation and Development.

O'Neill, J.-A. 1981. A Time-Series Analysis of Women's Labor Force Participation. *American-Economic-Review, 71*(2), 76-80.

Polette, J. 1995. *Distribution of Effective Marginal Tax Rates Across the Australian Labour Force* (Discussion Paper No. 6). Canberra: NATSEM.

Powlay, J. 2000. *Child care affordability.* Paper presented at the Family futures: issues in research and policy, 7th Australian Institute of Family Studies Conference, Sydney, July.

Ross, R., & Saunders, P. 1990. *The Labour Supply Behaviour of Single Mothers and Married Mothers in Australia*. Sydney: University of New South Wales.

Scutella, R. 2000. *Labour Supply Estimates for Married Women in Australia* (Melbourne Institute Working Paper N. 25/99). Melbourne: Melbourne Institute for Applied Economic and Social Research.

Sex Discrimination Unit 2002. *Valuing Parenthood: Options for Paid Maternity Leave*. Canberra: Human Rights and Equal Opportunity Commission.

Shamsuddin, A. 1998. Labour supply of immigrant women in Australia. *Australian Journal of Labour Economics, 2*(2), 105-127.

Shapiro, D., & Shaw, L. B. 1983. Growth in the Labor Force Attachment of Married Women: Accounting for Changes in the 1970's. *Southern Economic Journal, 50*, 461-473.

Smith, J.-P., & Ward, M.-P. 1985. Time-Series Growth in the Female Labor Force. *Journal of Labor Economics, 3*(1), S59-90.

Stanton, D., I., & Fuery, M. 1995. Developments in Family Payments 1983-1996. *Social Security Journal, December 1995*, 120-154.

Strachan, G., & Burgess, J. 2000. The Incompatibility of Decentralized Bargaining and Equal Employment Opportunity in Australia. *British Journal of Industrial Relations., 38*(3), 361-381.

VandenHeuvel, A., & Wooden, M. 1996. *Non-English-speaking-background immigrant women and part-time work*. Canberra: Australian Govt. Pub. Service.

Wenk, D., & Garrett, P. 1992. Having a Baby: Some Predictions of Maternal Employment around Childbirth. *Gender and Society, 6*(1), 49-65.

Wooden, M., & VandenHeuvel, A. 1997. Family Composition and the Labour Supply Choices of Married Immigrant Women. *Australian Journal of Labour Economics, 1*(2), 121-142.