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**Partnering and Fertility Patterns:
Analysis of the HILDA Survey, Wave 1**

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CONTENTS

	Page
Introduction	3
Data and Methodology	6
Measure of fertility expectations in lifetime	7
Statistical analysis	8
Major findings and results	9
Factors associated with expectations of childlessness (Zero to parity one or more)	9
1. Age and trends	9
2. Partnering: relationship formation and stability	9
3. Education, work and financial security	10
4. Delayed childbearing among higher educated	14
5. Other factors	14
Factors associated with having one child (One to parity two or more)	15
6. Age and trends	16
7. Partnering: relationship formation and stability	16
8. Education, work and financial security	16
9. Other factors	18
Factors associated with having three or more children (Two to parity three or more)	20
10. Age and trends	20
11. Partnering and relationship instability	20
12. Education, work and financial security	20
13. Other factors	22
14. Summary	25
Partnering patterns	25
15. Partnering: Bivariate analysis	25
16. Partnering: Multivariate analysis	26
17. Summary	31
Conclusions	31
Summary	31
Key findings	32
Further research	34
References	36

Partnering and Fertility Patterns

Introduction

Australia's low and declining fertility rates have received increasing publicity in recent times. In 2000 the total fertility rate (TFR) was the lowest on Australian record at 1.7 children per woman; well below the replacement rate of 2.1 births per woman and less than half the 20th century peak TFR of 3.5 in 1961 (ABS, 2001a; Weston and Parker, 2002). This long-term downward trend is similar to those of other developed countries and Australia's fertility rate currently ranks in the middle of developed economies (Barnes, 2001).

Public interest in the decline has been focused by concerns that it will exacerbate the economic pressures on future generations as they support a growing proportion of aged citizens (ABS, 1997; ABS, 2001a; McDonald, 2002). The primary issue is that the structural ageing of the population will strain the capacity to meet pension, health and other costs associated with ageing, as well as having a negative impact on economic growth (Barnes, 2001; McDonald and Kippen, 1999).

While not all policy-makers and commentators consider reversing declining fertility rates as a solution (Guest & McDonald, 2002; Treasury, 2002; Hamilton, 2002), there has been considerable discussion on the possible causes and appropriate policy responses to the decline (Barnes, 2001). This interest perhaps points to an additional concern driving the debate; the view that, for many, lower levels of fertility are unintended or involuntary and that this in itself is cause for concern (Weston & Parker, 2002). For instance, a key explanation for the fall in fertility has been the postponement of first births, serving to shorten women's childbearing years and increasing the possibility of childlessness (Weston & Parker, 2002). However, it is also recognised that for some people the decision to remain childless and to have small families is largely a conscious, voluntary choice associated with changing values and lifestyle priorities (Rovi, 1994; Weston & Qu, 2001a). This distinction between voluntary and involuntary fertility outcomes is a critical issue in the debate as it has important implications for the appropriateness and efficacy of policy proposals to halt or even reverse the decline. Yet, given its importance, there is still little certainty about the relative impact of changing priorities and preferences compared with circumstantial constraints on fertility choices for different subgroups in Australia (Weston & Parker, 2002).

While in the long term, longitudinal data provided by Household Income and Labour Dynamics survey (HILDA) will provide the rare opportunity to contribute towards disentangling these questions, the first wave of the HILDA survey enables us to investigate some aspects of this question. Table 1, below, shows the percentage of those whose desires to have children exceed their expectations of having any in the future, and also those whose desires are lower than their expectations of having (more) children in the future.

The table shows that, across all age groups, there is a larger proportion of people whose desires to have (more) children are greater than their expectations of having them in the future compared with those whose desires to have children are lower than their expectations of future fertility. These differences provide further substance to the view that many people perceive there are barriers to achieving their ideal fertility outcomes.¹

¹ These proportions may seem to contradict figures from the World Values Survey (1995-1997) recently publicised by De Vaus (2002), in which the discrepancies in original desires and actual outcomes were compared across age groups 45 yrs and over (showing the older age groups as less likely to have outcomes matching their original desires). However, it is important to note that the measures are different. Where the HILDA survey asks about desires and expectations of future childbearing, the World Values Survey asked retrospectively about people's

Table 1: Desire versus expectations of having (more) children in the future

Age group	Males (%) N=4534		Females (%) N=5069	
	Desire exceeds Expectations	Desire below Expectations	Desire exceeds Expectations	Desire below Expectations
18-29	25	16	23	14
30-39	29	9	23	6
40-49	16	3	10	2
50-55	7	0.6	4	neg.

Source: HILDA Survey, Wave 1 data, Oct 2002

Note: Percentages are based on weighted responses

Of course, there is research showing that intentions to have children are not necessarily stable over time, nor are they necessarily congruent with actual fertility outcomes (DHFS, DSS & OSW, 1998; Schoen, Astone, Kim & Nathanson, 1999; Weston and Qu, 2001a).² Furthermore, since people may adjust their expressed desires as well as their expectations to the reality of their circumstances the issue is complex and it is often difficult to make a distinction between voluntary and involuntary preferences for children (DHFS, DSS & OSW, 1998; Merlo & Rowland, 2000; Qu, Weston & Kilmartin, 2000). Longitudinal data can overcome many of these difficulties and further waves of the HILDA data will provide the opportunity to look at these questions with more precision. However, HILDA cross-sectional data can also provide some indications of the important factors associated with fertility.

A considerable portion of the research on fertility, for instance, has linked the decline to structural social changes, particularly in workforce participation and education. It is widely agreed that a critical factor associated with the initial decline in fertility rates across wealthy economies has been the increasing attachment to, and participation in, the workforce among women, coinciding with rising levels of education (ABS, 2001b; ABS, 1998; Barnes, 2001; Bryson, Strazzari and Brown, 1999; Chesnais, 1998; McDonald, 1997; McClamroch, 1996). Extended years of education and the need for women to establish careers have thus served to delay age of marriage and first childbirth (McDonald, 2001a). McDonald makes a persuasive case that fertility rates are affected by the extent of the mismatch experienced by women in the levels of gender equity in the imperatives of individual-oriented institutions, such as work and career, compared with existing social and family-oriented institutions, including the broader family policy environment. For instance, comparing low fertility countries, he argues that lower fertility rates are experienced in those countries where the expectations for women to pursue a career conflict with the level of responsibility and involvement that women are expected to take in raising children (Bagavos & Martin, 2001; Castles, 2002; Cooke, 2001; McDonald, 2001b). The difficulties of balancing work and family responsibilities, particularly where women bear the majority of the career opportunity cost of having children, have thus encouraged women to make trade-offs between work and parenting (Bagavos & Martin, 2001; McDonald, 2001a).

original desires versus their actual outcomes. Future Waves of HILDA will enable more reliable comparisons to be made between original desires and actual outcomes over time - including the variation in desire and expectations over time.

² It could be argued, for example, that the sharp decreases with age shown in Table 1 partly reflect this kind of consideration.

Somewhat related to this explanation is the argument that declining fertility has also been affected by social aspirations for material comfort and security rising faster than standards of living (Weston & Parker, 2002). There has also been considerable speculation on the extent to which financial, job and housing insecurity are contributing to declining fertility outcomes for some groups (Bagavos & Martin, 2001; McDonald, 2000a; Weston & Parker, 2002). In the context of economic uncertainty and job insecurity, the argument goes that people tend to be more risk averse to bearing the direct and indirect costs associated with having children (Bagavos & Martin, 2001; Coleman, 2000; McDonald, 2000a). In Australia, it is possible that economic recessions and the deregulation of labour laws with a consequent restructuring of the labour market within the last few decades have contributed to this sense of insecurity, at least among some groups (Healy, 1998; Martin, 2002).

In addition to this, research in Australia has highlighted the links between declining stability in partnering and declining fertility (Barnes, 2001; Birrell & Rapson, 1998; Qu, Weston & Kilmartin, 2000; Weston and Qu, 2001a; 2001b). Key changes, such as the introduction of the Family Law Act in 1975 removing barriers to divorce, along with changing expectations of relationships, marked the beginning of a new era of relationship instability (Weston, Stanton, Qu & Soriano, 2001). Rising divorce rates, declining marriage rates and higher rates of separation from de facto relationships have been linked to the rising age of first marriage and childbirth that, in turn, appear to have dampened overall fertility rates (ABS, 2002b; ABS, 2001a; Weston & QU, 2001a). Yet, as Qu, Weston and Kilmartin point out, the impact on fertility decisions of relationship breakdown and problems finding a suitable partner have not been explored adequately in Australia (2002).

In Australia, as elsewhere, a good deal of the fertility policy debate has centred on attempting to ameliorate the difficulties that working couples face in balancing work and family, particularly the opportunity costs of having children for women with high work aspirations (Bagavos & Martin, 2001; Castles, 2002; Cooke, 2001a; McDonald, 2001a). While a variety of family friendly policy packages have been introduced, the notable variation within and between fertility rates among low fertility countries has fuelled debate on the effectiveness of such policies (Castles, 2002; Lesthaeghe & Moors, 2000; Manne, 2001; McDonald, 2000b). While some research suggests that a range of family friendly policies have had important impacts on raising the fertility rate (Castles, 2002; Ekert-Jaffe et al, 2002; McDonald, 2001b; McDonald, 2000b), others have argued that the impact is questionable or minimal in comparison with the cross-national variation in fertility rates, suggesting that other key factors have been overlooked (Chesnais, 1998; Manne, 2001).

Although there is much that can be learned from the experience of declining fertility in other low fertility countries, McDonald rightly argues that assessing the appropriateness and likely effectiveness of particular policies in Australia requires an understanding of our particular policy and social context (2002). Furthermore, as research has demonstrated that over time the factors strongly associated with fertility can change (or even reverse) their relationship with fertility (Castles, 2002), maintaining relevant knowledge about fertility trends is an ongoing task.

In Australia, there remain some important gaps in fertility research. One of the most notable is the role of men in fertility decline. While studies have pointed out the importance of relationships and marriage in determining fertility rates, there has been surprisingly little research on the patterns of fertility experienced by men, despite research on couple decision-making that shows men's preferences are no less important in fertility decisions than women's (Weston and Qu, 2001a; Gray, 2002; Hand & Lewis, 2002; Weston & Parker, 2002). Studies conducted in Australia and elsewhere have suggested that the factors associated with fertility are

different for men and women (Fisher, 2002) and that men's income and socio-economic status may play an important role particularly after the first birth (Ekert-Jaffe et.al., 2002; Meyer, 1999). However, the role of men and the association between household income and fertility in Australia remain unclear.

In addition, there has been comparatively little investigation of the links between factors relating to work security and income (such as labour force status or the type of work contract) and fertility. Likewise, while there has been considerable speculation on the declining affordability of housing and the possible impacts that may have on fertility, there appears to be little research on these factors in Australia. Other studies of recent trends have shown that men are working longer hours and there are concerns that this may be having a negative impact on their capacity to contribute to family life (Hand and Lewis, 2002; Weston, Qu & Soriano, 2002; Millward, 2002). There remains the question as to what links there may be between longer working hours and fertility.

Finally, studies have suggested that factors associated with fertility are likely to differ for each additional parity progression (Bagavos & Martin, 2000; Ekert-Jaffe et.al; 2002; McDonald, 2002; Meyer, 1999; Merlo & Rowland, 2000). For example, McDonald has argued that the key factors affecting the decision to have a first child are more likely to be linked to the indirect opportunity costs that working women face in having a child, while decisions to have subsequent children are more likely to be influenced by the direct costs of having an additional child (McDonald, 1997). Furthermore, studies comparing parity progressions in the United Kingdom and France have shown not only that men's income and occupational status can have an important bearing on fertility outcomes for couples, but the impact of these factors can vary considerably in different social and policy contexts resulting in marked differences in the distribution of fertility outcomes across socio-economic subgroups (Ekert-Jaffe et.al., 2002). Understanding these factors, including the importance of partnering, thus has potentially important implications for targeting policy to raise fertility. Yet, in Australia relatively few studies have examined these issues and a need for further research has been identified (Gray, 2002; McDonald, 2002; McDonald, 2000b; Meyer, 1999).

In this paper we use Wave 1 of the HILDA datasets to conduct a study of the association of selected structural factors with fertility expectations and partnering. The analysis will examine the effects for both men and women and includes factors, such as remoteness from cities and country of origin differences, which have long been associated with variations in fertility. The HILDA dataset is valuable for this analysis as it provides access to a broad range of socio-demographic, labour market and attitudinal variables that are not often found in one dataset, including the capacity to generate information relating to couples in a household.

Data and Methodology

For this analysis we have used the HILDA dataset of individuals who filled out the personal questionnaire in mid-2001 and merged this with selected variables from the HILDA Household dataset.

To reflect the key socio-demographic and work factors that have been linked with fertility, we used the independent variables shown in Table 2.

Table 2: Variables in the analysis:

Variable	Categories	Variable	Categories
Partnering status	Married Separated / divorced or widowed Defacto: likely to marry Defacto: unlikely to marry Never married but has previously been in a defacto relationship Reference category: Never married and never been in a defacto relationship	Labour force status	Employed part-time Unemployed Not in the labour force Employed full-time and studying Full-time student (& may or may not work part-time or less) Part-time student (& may or may not work part-time or less)
Age: 18 to 29 yrs	18 to 24 Reference category: 25 to 29	Reference category: Employed Full-time	
Age: 30 to 49 yrs	30 to 34 35 to 39 40 to 44 Reference category: 45 to 49	Type of employment	Fixed-term contract Casual employment Self-employed Reference category: Permanent or ongoing
Age: 50 + yrs	70 + yrs 60 to 69 Reference category: 50 to 59	Personal income	\$0 - \$20,000 \$20,001 - \$30,000 Reference category: \$30,001 - \$40,000 \$40,001 - \$50,000 \$50,001 - \$70,000 \$70,001 - \$90,000 \$90,001 - \$450,000
Country of birth	Other Immigrant Immigrant from mainly English speaking country Reference category: Australia	Housing	Own home outright Own home and repayments ahead of schedule Reference category: Own home and repayments on time or behind schedule Life tenure / rent free Renting
Remoteness	Remote, very remote and migratory Outer Regional Inner regional Reference category: Major City	Personal income as proportion of household income	Zero proportion 0% < 20 % Reference category: 20% < 40% 40% < 60 % 60% < 80% 80% < 100%
Education	Postgraduate or Masters Bachelor, Graduate Certificate etc Advanced Diploma, Diploma Certificate I to IV Yr 12 Reference category: Yr 11 or below		
Hours of work /week	1 - 30 hours Reference category: 31 - 40 hours 41 - 55 hours 56 + hours		

Measure of fertility expectations in lifetime

In the HILDA survey, respondents were asked to rate their desire to have children on a 0-10 point scale. They were also asked about their expectations of having (more) children in the future

on a 0-10 point scale. If they rated their expectations between 6-10 (ie more than the midpoint of likely to have children) then these people were asked how many (more) they expected to have in their lifetime.

Our measure of the expected fertility in a person's lifetime is obtained by combining the number of children respondents already had with the number they expected to have in the future.³ This variable is central to the research. For the older respondents the figure is approximate to completed fertility. For the younger respondents, the figure is necessarily only indicative of final fertility outcomes. However, it is likely to be influenced by the respondent's sense of efficacy, which in turn is likely to be influenced by their current life circumstances and prospects.

Statistical analysis

Logistic regression was used to identify associations between fertility expectations and the various socio-demographic factors. We considered three parity progressions, in order to study whether the significant factors varied with parity:

- a) 0 → 1+ children (expectations of remaining childless in lifetime compared with expecting 1 or more children)
- b) 1 → 2 + children (expectations of having one child compared with expecting two or more children)
- c) 2 → 3 + children (expectations of having two children compared with three or more children).

Lack of space means we concentrate here on the first parity progression, but we also summarise the notable findings for the other two.

We studied men and women separately in three age groups; 18-29 years (N=2690), 30-49 years (N=5672) and 50+ years (N=4829). These age groups were chosen largely to reflect the stages of key life events relevant to fertility and partnering in addition to practical considerations of adequate sample sizes. The binary dependent variables were derived from the variable measuring total number of children expected in a person's lifetime.

The main focus of the analyses reported here is the 30-49 year age group because it captures the group with the most relevant and reliable characteristics and circumstances associated with fertility expectations and outcomes. For instance, the expectations among the younger age groups are likely to be more unstable⁴ and less reliable since the variables may not capture accurately the relative status of people's work, education and income prospects (as many have not yet become established). Likewise, while the older age group, 50 years and over, have the advantage of relatively certain fertility outcomes, a large proportion of this group will either be retired or have changed the circumstances of their work in ways that do not reflect their relative status and circumstances when fertility decisions were made. Comparisons across age groups are also difficult to interpret reliably since they depend not only on assumptions about the stability of individuals' expressed desires and expectations over time, but also their relation to actual fertility outcomes which may also be changing over time.

³ Expectations of total fertility in lifetime = number of (additional) children expected in future + number of children already had.

⁴ For instance, the proportion that are unsure whether they are likely to have any children in their lifetime (midpoint on the scale of expectations) is considerably larger among the younger age groups and declines steadily with older age groups (up to 55 years).

Major findings and results

Full details of the results of the logistic regressions for men and women, 30 to 49 years, have been attached in Appendix A. In order to simplify the presentation of results, only selected statistics will be presented from these and the other regressions in this section.

Factors associated with expectations of childlessness (Zero to parity one or more)

1. Age and trends

While simple bivariate cross-tabulations show that the proportion of people expecting or unsure about remaining childless is higher among younger cohorts (Fisher, 2002), our multivariate analysis suggests that the situation is more complex. Our findings suggest that preferences to remain childless may not be undergoing a dramatic change but rather the circumstances in which contemporary childlessness is more likely to occur are becoming more prevalent. This finding appears to be largely consistent with the conclusions of Merlo and Rowland's historical study of childlessness trends in Australia (2000).

For instance, the proportion that are unsure whether they are likely to have any children in their lifetime (midpoint on the scale of expectations) is considerably larger among the younger age groups and declines steadily with older age groups (up to 55 years). When those that are unsure whether they will have children in the future are taken into account, the difference in expectations of childlessness between age groups is minimal and the change in preferences over time is less clear. This is further supported by evidence that among 30 to 49 year old men and women a significantly higher proportion in the older age bracket, (45-49), expect to remain childless compared with the youngest age bracket (30-34). Rather than a difference in preferences, this probably reflects the firming up of expectations of childlessness as the opportunities for childbearing recede (particularly for women). This would be consistent with previous research in Australia that suggests that for many people childlessness is an unintended outcome, rather than a planned choice (Merlo and Rowland, 2000). Further longitudinal data analysis will be able to show more precisely the extent of the alignment between younger people's expectations and their actual outcomes over time.

2. Partnering: relationship formation and stability

For all age groups, current partnering status is the most significant factor associated with predicting whether individuals expect to have children in their lifetime. The importance of partnering becomes particularly clear for men and women 30 years and older. The size and direction of the estimates in Table 3 show that expectations of childlessness appear to be linked to the current status of being in a relationship or not and a measure of the stability of the relationship (crudely measured in this analysis through expectation of marriage in the future).

Married couples are thus most likely to expect to have children while the least likely are those who have never married and have never been in a defacto relationship. Similarly, those in defacto relationships who are likely to marry appear somewhat more likely to expect children than those unsure or unlikely to marry. This association is confirmed when the analysis is restricted to those who have not had children. For both men and women in the age groups 18 to 29 years and 30 to 49 years, those married and those in defacto relationships and likely to marry are significantly less likely to expect to remain childless than those that have never been married and never been in a defacto relationship.

Despite the rise in cohabitation and decline in marriage rates, these findings demonstrate the continuing importance of marriage and relationship stability in the likelihood of having a child. These results are consistent with the Ekert-Jaffe et al.'s findings on the critical importance of

partnering, and particularly marriage, on the chances of women having a first child in both the U.K. and France (2002).

Men and women who have been separated, divorced or widowed, may appear to be an exception to this trend, but having been in a stable relationship they are more likely to have already had children. However, there are some indications that experience of relationship instability may have a negative impact on fertility expectations. For instance, among 18 to 29 year old women who have not had children, those that are separated, divorced or widowed tend to be more likely to expect to remain childless than the never married reference group, though the difference is not quite statistically significant at a 5% level.⁵ These findings provide some support for Merlo and Rowland's (2000) contention that key factors causing contemporary childlessness in Australia are related to difficulties in finding a suitable partner, marital breakdown and a relatively large proportion of childless defacto couples.

Table 3: Expected Childlessness: Selected statistics from logistic regressions for 30 to 49 year olds

Partnering status		Estimate	Std Error	Sig.
Women	Married	-3.82	0.28	<.0001
	Separated, divorced or widowed (and no defacto)	-3.20	0.30	<.0001
	Defacto - likely to marry	-2.42	0.38	<.0001
	Defacto - unsure or unlikely to marry	-1.86	0.32	<.0001
	Never married but has been in a defacto relationship	-1.51	0.30	<.0001
Men	Married	-3.88	0.24	<.0001
	Separated, divorced or widowed (and no defacto)	-2.92	0.30	<.0001
	Defacto - likely to marry	-2.85	0.34	<.0001
	Defacto - unsure or unlikely to marry	-1.39	0.28	<.0001
	Never married but has been in a defacto relationship	-0.85	0.25	<.0007

Source: HILDA Survey, Wave 1 data, Oct 2002

Note 1: Negative signs on the estimates indicate the corresponding groups are less likely to expect to remain childless than the reference group

Note 2: Partnering ref. cat.: Never married and never been in a defacto relationship

3. Education, work and financial security

The HILDA data appear to be largely consistent with McDonald's theory that, in the context of differences in gender equity in work and family institutions, women are likely to trade between work and family (1997). In contrast, the links between work, education and childlessness are not as clear among men but suggest that higher, rather than lower, work involvement is linked with a lower likelihood of expecting to be childless. This is generally consistent with the existence of an income effect for men.

Women with higher education and work involvement

Table 4 below clearly shows that, compared with women with Yr 11 education or below, women with higher education in both the 30 to 49 years and 50 years and over age groups are significantly more likely to expect to be childless. In addition to this, women with higher

⁵ Estimate: 1.16 Std Error: 0.65 p<0.074

personal income (earning between \$50,001 and \$90,000) are more likely to expect to be childless and there is some indication that the association is similar for women who work longer hours (41 or more/wk).

No clear associations were found among younger women (18 to 29 years) between expectations of childlessness, education and work involvement. However, Table 4 shows there may be some support for similar patterns occurring in the links between childlessness and women earning a high proportion of household income (an association that is more clear when restricting the analysis to only those women who have not yet had children⁶). This is consistent with the notion that women in a main breadwinning role are more likely to remain childless.

Women as primary care-givers

Given that women in Australia tend to take primary responsibility for rearing children, it is not surprising that the HILDA data consistently show a significant relationship between working part-time (between 1 and 30 hours per week) and higher likelihood of expecting to have children.

The data in Table 4 also show a link among 30 to 49 year old women between relatively low earnings (\$20,000 to \$30,000) and a lower likelihood of expecting to be childless than those earning \$30,001 to \$40,000.

Women with very high income

The association between high income and childlessness reverses sharply for women, 30 to 49 years, who have a personal income of \$90,001 or more. Table 4 shows that this group are significantly less likely to expect to remain childless compared with those earning \$30,000 to \$40,000. The dramatic change in childlessness expectations between the two high-income groups is surprising since, according to McDonald's theory of work and family trade-off (1997), women with higher personal incomes face higher opportunity costs in having children. However, it is possible that this finding reflects an 'income effect' where reaching a certain threshold of household wealth appears to enable access to market-based support to relieve some of the 'burden of care' of children (Cooke, 2001; Ekert-Jaffe et.al., 2002). Cooke argues that this effect explains the increase in fertility among the highest income households in the United States between the mid 1980s and mid 1990s, even while maternal employment had increased for that group during that period (2001). At an individual level, the reversal in expectations among the highest income group in this study perhaps indicates that these women have succeeded in establishing financial and/or career security relatively early (along with their partners) and expect that they can afford to have children, either through taking some time off from work and/or accessing full-time childcare.

Table 4: Expected Childlessness: Selected statistics from logistic regressions for women

Women	Education, Work and income	Estimate	Std Error	Sig.
Age	(Reference categories in note 2 below)			
30-49 yrs	Postgraduate or Masters	0.87	0.39	0.026
	Bachelor or Graduate Certificate	0.47	0.23	0.042
	Advanced Diploma or Diploma	0.60	0.28	0.032
	Yr 12 education	0.38	0.29	0.179
	Full-time student	1.11	0.74	0.136

⁶ Personal Income proportion 60% < 80%; estimate 1.11 Std Error 0.58 Sig. 0.055

	Personal income \$20,000 to \$30,000	-0.61	0.30	0.040
	Personal income \$50,001 - \$70,000	0.49	0.29	0.089
	Personal income \$70,001 - \$90,000	0.88	0.41	0.033
	Personal income \$90,001 - \$450,000	-1.28	0.67	0.056
	Paid work 1 - 30 hours per week	-0.87	0.44	0.050
	Works 41 or more hours per week	0.36	0.20	0.078
50 + yrs	Postgraduate or Masters	1.30	0.61	0.033
	Bachelor or Graduate Certificate	0.80	0.28	0.004
	Yr 12	0.57	0.42	0.175
	Works 41 or more hours per week	0.66	0.44	0.134
	60% < 80%	1.00	0.59	0.087
	80% < 100%	0.66	0.45	0.141
18-29 yrs	Yr 12 education	-0.79	0.37	0.032
	Full-time student	1.50	0.65	0.021
	Paid work 1 - 30 hours per week	-0.80	0.59	0.173

Source: HILDA Survey, Wave 1 data, Oct 2002

Note 1: Negative signs on the estimates indicate the corresponding group are less likely to remain childless than the reference group

Note 2: Education ref cat: Yr 11 educated or below. Labour force ref cat: Employed full-time Personal income ref cat: \$30,001 to \$40,000 Hours in paid work per week: 31 to 40 hrs/wk Income proportion ref cat: 20%-40%

Men as breadwinners

The socio-demographic factors associated with fertility for men are less clearly interpretable than for women. However, in contrast to women, there is evidence to indicate that men's likelihood of childlessness is decreased as their capacity to fulfil the breadwinner role increases. For instance, Table 5 shows that men who earn between 40% and 100% of household income are less likely to expect to be childless than those earning 20% to 40%. Similarly, men who work longer hours, 41 hours or more per week, are less likely to expect to be childless. Working longer hours may be linked to a need to meet the higher financial costs associated with having children or they may point to links with higher income or occupation status. Nevertheless, the lack of an association between longer working hours and childlessness is in stark contrast with that found for women.

Unlike women, for men the link between higher education levels and expectations of childlessness is not so distinct. Table 5 suggests that men with Postgraduate education level may be somewhat more likely to expect to remain childless than those with Yr 11 education, however this association is not significant. Furthermore, expectations among younger men (18 to 29 years) are reversed, with higher levels of education appearing to be associated with a lower expectation of childlessness. These findings are broadly similar to the lack of association found between education or socio-occupational status of male partners and having a child in Ekert-Jaffe et.al.'s study comparing U.K. and France fertility patterns (2002).

Table 5: Expected Childlessness: Selected statistics from logistic regressions for men

Men	Education, Work and income	Estimate	Std Error	Sig.
Age	(Reference categories in note 2 below)			
30 - 49 yrs	Postgraduate or Masters	0.54	0.37	0.146
	Advanced Diploma, Diploma	-0.53	0.30	0.079
	Personal Income proportion 40% < 60%	-0.70	0.32	0.026
	Personal Income proportion 60% < 80%	-0.98	0.34	0.004
	Personal Income proportion 80% < 100%	-0.68	0.30	0.020
	Paid work 41 or more hours per week	-0.37	0.17	0.028
18-29 yrs	Postgraduate or Bachelor level education	-0.52	0.34	0.128
	Certificate level	-0.72	0.26	0.006
	Yr 12	-0.51	0.27	0.057
	Personal income \$40,001 to \$50,000	-0.91	0.51	0.072
	Paid work 41 to 55 hrs per week	-0.38	0.26	0.149

Source: HILDA Survey, Wave 1 data, Oct 2002

Note 1: Negative signs on the estimates indicate the corresponding group are less likely to remain childless than the reference group

Note 2: Education level ref cat: Yr 11 or below Personal income ref cat: \$30,001-\$40,000 Personal income proportion ref cat: 20% < 40% Paid work hours ref cat: 31 - 40hrs /week

Financial security

One of the clearest and perhaps most surprising of our findings is in relation to home ownership. This analysis shows a clear association for both men and women between a higher likelihood of being childless and living in a home that is owned outright, rather than having a mortgage with repayments on or behind schedule. Table 6 shows that this link is most clear for 30 to 49 year olds. There are two probable explanations: one is that it is explained by the high financial costs associated with raising children; the second is that it may reflect a different set of priorities in relation to family and financial security, perhaps particularly among those with higher incomes.

While these explanations are not mutually exclusive, there is evidence in support of the first of these explanations by the disappearance of a significant association when expectations of childlessness are compared only among those who have not yet had children. It suggests that the difference found in housing/financial security only becomes apparent when families bearing the costs of children are included.

The financial strains associated with those expecting to (and/or) have children appear to be further confirmed with the addition of a variable in the model measuring a subjective assessment of financial adequacy. Those that expected to have children were significantly more likely to indicate that their finances were inadequate. Furthermore, the variance for this variable clearly overlapped with that of the housing security variable. Even so, the sources of this distinction between financial security and childlessness remain unclear.

Despite the link among women between the higher education levels and a greater likelihood of expecting to be childless, there is also some evidence to suggest that higher expectations of childlessness may be emerging among those with the lowest levels of education. For instance, younger women with Yr 12 education are less likely to expect to be childless than those with Year 11 education or less. Likewise, among younger men, those with Postgraduate or Bachelor,

Certificate or Yr 12 education are somewhat less likely to expect to be childless compared with those with Yr 11 education or below. While further investigation is needed to confirm these relationships, the data may be pointing to a certain lower threshold of work and income opportunity, below which opportunities (and expectations) of having children diminish.

Employment type

Compared with those who are permanently employed, men who are self-employed are significantly less likely to expect to be childless. This association for self-employed male partners and having a child was not found for either the U.K. and France in Ekert-Jaffe et al.'s comparative study (2002). However, as we will show later in this paper, this difference may be explained by the comparatively higher rates of partnering among self-employed men – an association that cannot be examined in Ekert-Jaffe et al.'s study since it only includes partnered men. Table 6 also provides some indications that men and women on fixed contracts may also be less likely to expect to remain childless. It is unclear what are the important features of these employment types that tend to link them with different fertility outcomes. This issue will be discussed in subsequent sections of the paper.

4. Delayed childbearing among higher educated

Consistent with previous studies (Cooke, 2001; De Vaus, 2002; Ekert-Jaffe et al, 2002), there are indications of the expected delays in childbearing for both men and women with higher education levels. When examining only those who have not yet had children, among women 30 to 49 years, those with higher education are less likely to expect to remain childless than those with Yr 11 education (e.g. Bachelor or Graduate certificate education: Estimate, -1.38; Significance level, 0.005). This reverses the associations with education found when all women are compared. Similarly, comparing men without children, among 18 to 29 year olds and 30 to 49 year olds, those with higher education levels are also significantly more likely to expect to have children than men with Yr 11 education or below (e.g. Bachelor or Graduate Certificate education: Estimate; -1.32; Significance level, 0.001). The most likely explanation is that these findings reflect differences in expectations of the timing of having children for people with high versus low education levels.

5. Other factors

Distance from major cities remains associated with the likelihood of having children by sex and age. For instance, women between the age of 30 and 49 years who live in outer regional areas are significantly less likely than those in major cities to remain childless. This is consistent with previous studies that have found that women who live in cities tend to have lower fertility rates (De Vaus, 2002). While these associations may reflect different values and priorities regarding work and family, as Table 6 shows, these associations are sex and age specific, suggesting that mismatches in the proportions of men and women in these regions may partially explain differing rates of childlessness. For example, it is possible that a relative lack of women compared with men in outer regional areas may explain the higher probability of having children among women (resulting in higher partnering rates among women already living there as well as reflecting the disproportionate number of women moving there for/with a partner).

However, in contrast to these findings, younger women (18 to 29 years) who live in remote or very remote areas have a higher likelihood of expecting to remain childless compared with women living in major cities. The reasons for this association are not clear, however, they may be connected with age- and sex-specific internal migration patterns.

Country of birth

Expectation of childlessness is rather weakly related to country of birth. Table 6 below, only shows some weak (non-significant) associations with country of birth.

Table 6: Employment type and other associations with expected childlessness: Selected statistics from logistic regressions

Employment type and other associations		Estimate	Std Error	Sig.
Categories (Reference categories in note 2 below)				
WOMEN				
30-49 yrs	Own home outright	0.76	0.26	0.004
	Renting	0.35	0.27	0.191
	Life tenure / rent free	1.05	0.59	0.078
	Outer regional	-0.75	0.28	0.008
	Immigrant from main English-speaking country	0.33	0.22	0.135
	Fixed-term contract	-0.71	0.34	0.038
50+ yrs	Own home outright	1.84	0.71	0.009
	Own home - payments ahead of schedule	1.14	0.79	0.148
	Renting	1.05	0.76	0.166
	Life tenure / rent free	1.37	0.88	0.120
18-29 yr	Remote, very remote or migratory	1.17	0.61	0.056
	Immigrant from main English-speaking country	0.55	0.38	0.145
MEN				
30-49 yrs	Own home outright	0.48	0.24	0.044
	Fixed-term contract	-0.51	0.32	0.109
	Self-employed	-0.75	0.22	0.001
	Other immigrant (non-main English speaking)	-0.39	0.24	0.107
50 + yrs	Self-employed	-0.50	0.35	0.154
	Employed full-time and student	1.77	0.52	0.001
	Immigrant from main English-speaking country	0.40	0.23	0.082
	Remote, very remote and migratory	1.08	0.62	0.080
18-29 yrs	Outer regional	0.45	0.30	0.14

Source: HILDA Survey, Wave 1 data, Oct 2002

Note 1: Negative signs on the estimates indicate the corresponding group are less likely to remain childless than the reference group

Note 2: Housing ref. cat.: Own home repayments on or behind schedule Personal income proportion of household income ref. cat.: 20% < 40%; Employment type ref. cat.: Permanent employment Remoteness ref. cat.: Major city; Country of birth ref. cat.: Australia

Factors associated with having one child (One to parity two or more)

The factors associated with expecting one child, compared with parity two or more, are less clear than those with childlessness. However, some key associations can be highlighted.

6. Age and trends

Bivariate cross-tabulations of fertility expectations do not show a simple trend increase in the proportion of people expecting to have one child in their lifetime. For instance, only 4.5% of 18 to 29 years olds expect to have one child in their lifetime compared with 10% of adults between 30 and 39 years, 12% of those between 40 and 49 years and declining to 9% for those between 50 and 59 years. While it is possible that there is a generational decline in preference for one-child families, these figures more likely indicate that the higher proportion expecting one child among older age groups (who are closer to completing their fertility) can be largely explained by unplanned outcomes resulting from circumstances rather than their preference.

7. Partnering: relationship formation and stability

Table 7 shows that while the importance of partnering status in identifying those that expected to progress from one child to two or more is much less than in identifying childlessness, it remains a key factor. In particular, there is an association between those that have, or are, experiencing unstable or uncertain defacto relationships (measured by likelihood of marrying) and the likelihood of expecting to have one child compared with two or more. This was found for both men and women between 18 and 49 years who have never been married (but had been in a defacto relationship previously) as well as defactos who say they are unlikely to marry.

8. Education, work and financial security

Women and work involvement

There is no clear pattern of association between women's education level and the likelihood of expecting only one child in these data. However, there is evidence of a link between higher levels of work involvement among women and expecting to have one child rather than two or more. For instance, women 30 to 49 years who are working 1 to 30 hours/wk rather than 31 to 40 hours/wk are significantly more likely to expect two or more children than one, as are younger women who are employed part-time. Likewise, older women (50 years or more) with lower income levels, ranging between \$0 to \$30,000, are also more likely to have two or more children compared with those earning \$30,001 to \$40,000. Similarly, younger women (18 to 29 years) who are the main breadwinners in the household, earning 60 to 80% of the household income, are more likely than those earning 20% to 40% to expect to have one child only and a similar link is also highly significant among older women (50 years or more). It is possible that some of these associations may reflect not only differences in levels of work involvement but also socio-economic status, but that question remains unclear in these data.

The link between the level of work involvement and fertility for women remains consistent with Cooke's Australian findings in her cross-national study of a negative association between maternal employment and fertility (2001). The findings here are also somewhat consistent with Ekert-Jaffe et al's study of fertility progressions in the U.K. and France that showed women's educational attainment, while still significant, had less influence in explaining the progression to second births than it did for first births (2002). The use of socio-occupational categories together with years of education in the Ekert-Jaffe et al study (2002) may explain the differences in the extent of this decline in an education effect compared with our study. Including socio-occupational distinctions in further Australian research would be valuable to more clearly identify differences in the likelihood of fertility progression among socio-economic subgroups.

Men as breadwinners

In contrast to women, there appears to be an association between men's role as breadwinner and more positive expectations of fertility. Across all age groups there is a consistent tendency for men with higher levels of education (particularly Postgraduate and Bachelor) to be less likely to expect to have only one child compared with those with Yr 11 education or below. There is also some indication that among 30 to 49 year old men those earning \$90,001 or more may be less

likely to expect to have only one child. Similarly, in contrast to women, younger men (18 to 29 yrs) with lower incomes and level of work involvement are more likely to expect to have only one child. For instance, those employed part-time as well as part-time students are more likely to expect one child compared with those working full-time.

These findings are consistent with the Ekert-Jaffe et al's research demonstrating that, for men, higher levels of socio-occupational and education status are linked with higher probabilities of having more than one child in the U.K. and France (2002). This may be evidence of a direct 'income effect', where fertility rises with higher levels of men's income (due to less budget constraints on having more children). However, the lower levels of expectations of childlessness among more highly educated men may also be partially explained by lower rates of relationship instability or lack of repartnering. For instance, cross-tabulations show higher rates of separated, divorced or widowed men among those with Yr 11 education or below compared with those with tertiary levels of education; a finding which is consistent with previous studies linking low education and early age of marriage (among other factors) with a higher risk of relationship breakdown (in Weston and Wooden, 2002).

Financial security

For this parity progression there is no consistent or strong association with housing / financial security. The exception to this is the higher likelihood of expecting only one child among 18 to 29 year old women who live in a home that is owned outright or where payments are ahead of schedule compared with those in homes where the mortgage is on or behind schedule. This finding is consistent with the links found between higher financial security and expectations of childlessness. However, among younger women there is also some indication that relatively lower financial security (suggested by associations for those that are renting) is also linked with expecting only one rather than more children. The basis of this link is not clear. For instance, it may reflect young lone parents with one child who do not expect to have more children or it may point to women with higher work attachment and lower fertility intentions but who are still in the process of finishing their education and establishing their career.

Among older men and women (50 years and over) there are highly significant associations (with large estimates) among those unemployed or not in the labour force and having only one child rather than two or more. These findings may be pointing to particular subgroups that experience financial, work and social disadvantages.

Employment type

There are some indications that fixed contract and self-employment have some associations with having one child rather than more. However, these tendencies are relatively weak and the patterns are not completely consistent or easily interpretable. The tendency that is most consistent is for self-employment to be associated with a greater likelihood of expecting two or more children. This is only significant for 30 to 49 year old women but the same, though not quite significant, pattern can be found among younger (18-29 years) and older men (50 years and over). This pattern, however, is not found among younger women where self-employment, if anything, appears to be linked with being less likely to have two or more children.

There also appear to be some indications that, compared with being permanently employed, women between 18 and 49 years employed on a fixed contract are somewhat more likely to have two or more children. However, this relationship appears to be reversed for older men, 50 years and over.

While a higher likelihood of having a second child among UK men who are self-employed (as well as French farmers) was also found in Ekert-Jaffe et al's study, they did not report any similar associations for women (2002). Unfortunately, their study did not identify those on

fixed contract so no comparisons can be made. Further analysis is required to understand the basis of these links in the Australian context though it appears there are some similarities, cultural and/or practical, with the status of self-employment elsewhere.

9. Other factors

While there are no significant associations between remoteness of location and higher likelihood of having two or more children rather than one, there appear to be substantial, though non-significant, associations in the expected direction for 30 to 49 year old men and women (De Vaus, 2002). In contrast to this, younger men (18 to 29 years) who live in remote or very remote areas tend to be somewhat more likely to expect one child rather than more, a finding that may be connected to explanations of the higher likelihood of younger women in remote areas expecting to be childless.

It is perhaps surprising to find that, for both men and women between 30 and 49 years, migrants from countries other than the main English speaking ones are significantly more likely than the Australian-born to expect only one child. Furthermore, among the older age group (50 years and over) the higher likelihood of having one child extends to include all migrants (from Main English speaking countries and all other countries). It suggests that factors perhaps relating to the specific time and context of migration, including perhaps the need to establish themselves financially and the disruptive impact of migration itself on family formation, may have important impacts on completed fertility.

Table 7: One to parity two or more: Selected statistics from logistic regressions

Categories		Estimate	Std Error	Sig.
(Reference categories in note 2 below)				
WOMEN				
30-49 yrs	Separated, divorced or widowed (and no defacto)	0.55	0.36	0.123
	Defacto - unsure or unlikely to marry	0.79	0.40	0.051
	Never married but has been in a defacto relationship	1.16	0.39	0.003
	Personal Income zero proportion	-0.69	0.42	0.100
	Paid work 1 - 30 hours per week	-0.65	0.32	0.044
	Self-employed	-0.51	0.25	0.039
	Fixed-term contract	-0.46	0.30	0.125
	Other immigrant (non-main English speaking)	0.88	0.16	<.0001
50+ yrs	Married	-3.38	1.02	0.001
	Defacto - likely to marry	-3.79	1.45	0.009
	Separated, divorced or widowed (and no defacto)	-2.82	1.01	0.005
	Defacto - unsure or unlikely to marry	-2.07	1.07	0.053
	Never married but has been in a defacto relationship	-3.19	1.47	0.030
	Yr 12 education	0.66	0.28	0.021
	Personal Income proportion 60% < 80%	1.28	0.43	0.003
	Personal income \$0 to \$20,000	-0.65	0.33	0.052

	Personal income \$20,001 to \$30,000	-0.90	0.42	0.034
	Other immigrant (non main-English speaking)	0.50	0.20	0.013
	Immigrant from main-English speaking country	0.39	0.21	0.064
18-29 yrs	Defacto - unsure or unlikely to marry	1.39	0.55	0.011
	Never married but has been in a defacto relationship	1.32	0.43	0.002
	Personal Income proportion 60% < 80%	1.35	0.71	0.056
	Personal Income proportion 80% < 100%	0.84	0.54	0.116
	Own home outright	1.23	0.66	0.063
	Own home - payments ahead of schedule	1.15	0.60	0.054
	Renting	1.03	0.57	0.070
	Fixed-term contract	-1.89	1.04	0.070
MEN				
30-49 yrs	Married	1.23	0.44	0.005
	Defacto - likely to marry	1.05	0.51	0.041
	Separated, divorced or widowed (and no defacto)	1.66	0.47	0.000
	Defacto - unsure or unlikely to marry	1.65	0.50	0.001
	Never married but has been in a defacto relationship	1.84	0.48	0.000
	Postgraduate or Masters	-0.72	0.44	0.100
	Bachelor or Graduate Certificate	-0.47	0.23	0.038
	Advanced Diploma or Diploma	-0.43	0.27	0.110
	Yr 12 education	-0.50	0.30	0.102
	Personal income \$90,001 or more	-0.70	0.40	0.081
	Other immigrant (non-main English speaking)	0.45	0.19	0.018
50 + yrs	Bachelor or Graduate Certificate	-0.70	0.35	0.046
	Personal Income proportion 60% < 80%	0.77	0.41	0.060
	Self-employed	-0.49	0.30	0.099
	Fixed-term contract	0.70	0.41	0.085
	Other immigrant (non-main English speaking)	0.55	0.21	0.010
	Immigrant from main English-speaking country	0.44	0.21	0.032
18-29 yrs	Defacto - unsure or unlikely to marry	1.30	0.62	0.036
	Never married but has been in a defacto relationship	1.05	0.47	0.024
	Postgraduate or Bachelor level education	-1.71	0.75	0.022
	Self-employed	-1.37	0.84	0.101
	Employed part-time	2.48	1.29	0.054
	Part-time student	2.62	1.34	0.052

Remote, very remote and migratory	1.63	0.86	0.059
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Source: HILDA Survey, Wave 1 data, Oct 2002

Note 1: Negative signs on the estimates indicate the corresponding group are less likely to expect one child compared with two or more than the reference group

Note 2: Partnering ref cat: Never married and never been in a defacto relationship Education level ref cat: Yr 11 or below Labour force ref.cat: Employed full-time Personal income ref cat: \$30,001-\$40,000 Personal income proportion ref cat: 20% < 40% Paid work hours ref cat: 31 - 40hrs/wk Employment type ref cat: Permanent employment Housing ref cat: Own home repayments on or behind schedule Remoteness ref cat: Major city Country of birth ref cat: Australia

Factors associated with having three or more children (Two to parity three or more)

10. Age and trends

Bivariate cross-tabulations of the HILDA data clearly show the trend over time toward smaller, two child families (Fisher, 2002). Multivariate analysis appears to confirm this shift. Among both 30 to 49 year olds and those 50 years and over, the youngest age sub-groups are significantly less likely to expect to have three or more children compared to the oldest age sub-groups.⁷

This pattern is not found among 18 to 29 year olds. Younger men, in particular, the youngest age sub-group, 18 to 24 years, are significantly more likely to expect to have three or more children than are the 25 to 29 year olds. It is unclear whether this is a maturational effect, a possible change over time (or even a somewhat spurious association).

11. Partnering and relationship instability

Overall, partnering status contributes far less in explaining the differences between those that have parity two rather than three or more children than it does for lower order parity progressions. It suggests that the relative stability of relationships is less likely to be an important factor distinguishing families that have two rather than more children. However, the exception to this appears to be among older men (50 years and over) for stable partnering (married or defacto) to be associated with being more likely to have three or more children.

12. Education, work and financial security

Employment type

For both men and women, one of the most clear and significant associations with larger families is self-employment. Women from 30 years and over and men 50 and over are significantly more likely to have three or more children than those permanently employed. This finding is consistent with Ekert-Jaffe et al's finding that women in the U.K. (but not France) were more likely to have a third child if their partner was self-employed (2002). It is unclear what is important about self-employment that links it with larger families. Self-employment covers a range of situations including businesses with and without employees, own account workers and family businesses (including those where individual family members are not paid). For men, self-employment is usually full-time while a reasonably large proportion of self-employed women work part-time. One possible explanation is that self-employment is linked with greater flexibility and sense of control over managing work and family balance and future earnings. It may also be linked more directly with income level, though this is hard to assess in the HILDA data since a disproportionate number of self-employed people did not provide household or personal income information. Alternatively, there may be a tendency for particular values, perhaps in relation to work and family, to be shared among those who are self-employed than those who are permanently employed. Further investigation of this finding, and others linked to

⁷ However, among 30 to 49 year olds this may be partly due to higher proportions of those in the younger age sub-group who don't know if they will have anymore.

work arrangements, has the potential to point to important insights about work and family balance and its link to fertility.

Education, work and financial security

Women and work involvement

The associations between women's education and work involvement and having three or more children are similar to the comparisons for having two or more children. The data suggest that the propensity for having more than two children is linked more directly to the level of women's income and work involvement than to education level; a finding that is consistent with cross-national research findings (McClamroch, 1996). Even so, women between 30 and 49 years with Bachelor and Graduate Diploma level education are significantly less likely to have families larger than two compared with women with Year 11 education or below. There also appears to be a similar association for women in this age group with Yr 12 education. However, while a similar relationship among older women (50 years and over) is found for those with Yr 12 education, this association is only significant for women with Certificate level education. This suggests that, unlike the relationship with childlessness, education level has a less direct impact on the progression to having more than two children.

While the relationship between education level and fertility appears less clear, the relationship between women and work involvement is more readily interpreted. Women who have higher incomes seem to be more likely to expect two rather than three or more children. For instance, among younger women (18 to 29 years) those earning between \$40,001 to \$50,000 (compared with those earning \$30,001 to \$40,000) are significantly less likely to expect more than two children; an association that appears to remain for those earning over \$50,000. Similarly, women (30 to 49 years) earning \$70,000 to \$90,000 and older women (50 years and over) who earn 80% to 100% of the household income appear more likely to have two rather than three or more children. These findings are consistent with the data that suggest women with lower work involvement are more likely to have larger families. For example, women, 30 to 49 years, in casual employment are significantly more likely to have three or more children compared with those working full-time; with similar associations appearing among older women. The conflicts between higher maternal employment and fertility are consistent with cross-national research on low fertility countries (Cooke, 2001).

Men as breadwinners

In contrast, the findings suggest that men's education and circumstances may be more important than women's for understanding the propensity to have more than two children. Among men, higher education levels are more clearly linked to limiting family size to two rather than three or more children. Across all age groups, men with higher levels of tertiary education are more likely to expect to have two children rather than more. This includes men 18 to 49 years with Bachelor or Graduate level education and older men (50 years and over) with Postgraduate or Bachelor education. Again, in contrast with women, men who work longer hours (41 hours or more) or work full-time while also studying appear to be more likely to have three or more children. The apparently greater importance of men's income and employment status compared with women on the propensity for having more than two children is consistent with Meyer's finding in a similar Australian study (1999).

Financial security

In broad terms, the likelihood of having a larger family seems to be linked to poorer financial security. In addition to the association with lower education levels, older men (50 years and over) who are renting and younger men (18 to 29 years) in casual employment as well as those with lower income earnings (between \$20,000 to \$30,000), are significantly more likely to

expect three or more children, as are women 30 years and over who are in casual employment. Likewise, higher levels of housing financial security appear to be associated with lower likelihood of having more than two children among younger age groups. For instance, 30 to 49 year olds living in a home that is owned outright or being ahead on mortgage repayments appear to be somewhat less likely to have more than two children; a finding that is consistent with other parity progressions. This relationship is most clear among women. These findings are consistent with Meyer's findings in a similar study using the 'Negotiating the Life Course Survey' of parity progression from two to three or more children in Australia where men with lower work security are found to be more likely to have larger families (1999). The links between poorer financial security and families larger than two children are also similar to those found in the U.K., where blue collar workers had the highest likelihood of having more children (Ekert-Jaffe et al, 2002). This is notably distinct from France, where the chances of having more than two children are increased for those women with higher salaries and education while the associations with partner's socio-economic status suggest white-collar workers (as opposed to higher income workers) are the least likely to have three or more children (Ekert-Jaffe et al, 2002).

These findings suggest that financial security, per se, is not the key factor influencing the decision to have more than two children. Rather, they are consistent with the view that couples' fertility decisions (in relation to work, family and financial security) are based on different priorities and choices in different income groups. The findings concur somewhat with economic theorists' rationale of the three mechanisms that explain the effect of income on fertility rates (Ekert-Jaffe et al, 2002). In addition to the direct impact of less budget constraints on having more children for men with higher income and the effect on the timing of births for women who combine work and family, it is argued that along with rises in socio-economic status, couples will tend to prioritise the schooling of their children in order to ensure the best possible social position – resulting in the trade-off that limits the number of children (Ekert-Jaffe et al., 2002). This is called the 'quality versus quantity effect' that they argue explains the lower fertility of the middle socio-economic groups compared with the lower socio-economic groups (Ekert-Jaffe et al, 2002). Furthermore, since the highest income groups have sufficient resources not to limit the number of children, and relieve the 'burden of care', it is argued that this explains the curvilinear association (called the U-curve or J-curve effect) often found between fertility rates and socio-economic status (Ekert-Jaffe et al, 2002).

Although a curvilinear effect for fertility is difficult to demonstrate in this analysis, other research using the HILDA data has suggested that a curvilinear relationship based on household income and mean fertility rates (where middle income groups have the lowest fertility rates) is evident in the data (Fisher, 2002).

13. Other factors

Remoteness

There is a significant tendency for families in regional areas, particularly in outer regions, to expect more than two children compared with families in major cities. This is significant for women across all age groups and for men in the older age groups. Men 50 years and over and women 30 years or more living in inner regional areas are also significantly more likely to have three or more children rather than two.

ATSI origin and country of birth

ATSI women between 30 and 49 yrs are significantly more likely to expect three children or more. There is also some indication that women 50 yrs and over are somewhat more likely to expect at least three children. A finding that is consistent with previous research (De Vaus, 2002). No significant association was found for ATSI men.

Perhaps contrary to expectations, migrants are not more likely to expect more than two children compared with Australian born. Rather, women 30 to 49 yrs who are migrants from countries other than main English speaking are less likely to have larger families. This again suggests that there may be particular factors associated with migration that may be influencing their fertility rates.

Table 8: Two to parity three or more: Selected statistics from logistic regressions

Categories (Reference categories in note 2 below)		Estimate	Std Error	Sig.
WOMEN				
30-49 yrs	Separated, divorced or widowed (and no defacto)	0.52	0.26	0.046
	30 to 34 years	-0.44	0.14	0.002
	Bachelor or Graduate Certificate	-0.28	0.14	0.045
	Yr 12 education	-0.28	0.16	0.083
	Casual employment	0.29	0.15	0.051
	Self-employed	0.66	0.16	<.0001
	Personal income \$70,001 to \$90,000	-0.96	0.50	0.056
	Own home outright	-0.24	0.14	0.080
	Own home - payments ahead of schedule	-0.23	0.13	0.070
	Other immigrant (non-main English speaking)	-0.36	0.19	0.058
	ATSI - indigenous	0.79	0.32	0.012
	Outer regional	0.66	0.15	<.0001
	Inner regional	0.44	0.10	<.0001
50+ yrs	60 to 69 years	0.79	0.13	<.0001
	70 years and over	0.54	0.15	0.000
	Defacto	-1.66	0.84	0.048
	Certificate 1 to 4 education	-0.29	0.13	0.024
	Yr 12 education	-0.39	0.23	0.086
	Casual employment	0.45	0.25	0.071
	Self-employed	0.42	0.22	0.056
	Unemployed	-1.81	1.01	0.074
	Personal Income proportion 80% < 100%	-0.34	0.20	0.084
	Personal income \$70,001 to \$90,000	-1.04	0.66	0.117
	Personal income \$90,001 and over	1.01	0.73	0.167
	ATSI - indigenous	1.10	0.65	0.091
	Outer regional	0.67	0.16	<.0001
	Inner regional	0.46	0.11	<.0001

18-29 yrs	Personal income \$40,001 to \$50,000	-0.86	0.36	0.019
	Personal income \$50,001 and over	-0.66	0.39	0.093
	Own home - payments ahead of schedule	-0.40	0.24	0.104
	Outer regional	0.47	0.22	0.032
MEN				
30-49 yrs	30 to 34 years	-0.69	0.15	<.0001
	35 to 39 years	-0.62	0.14	<.0001
	40 to 44 years	-0.26	0.14	0.063
	Bachelor or Graduate Certificate	-0.45	0.16	0.006
	Advanced Diploma or Diploma	-0.66	0.19	0.000
	Yr 12 education	-0.39	0.22	0.068
	Paid work 41 or more hours per week	0.20	0.12	0.077
	Employed full-time and studying	0.39	0.18	0.032
	Own home - payments ahead of schedule	-0.23	0.14	0.099
	Outer regional	0.59	0.16	0.000
50 + yrs	Married	1.00	0.50	0.043
	Defacto	0.93	0.55	0.089
	Separated, divorced or widowed	0.88	0.50	0.077
	60 to 69 years	0.65	0.14	<.0001
	70 years and over	0.86	0.16	<.0001
	Postgraduate or Bachelor level education	-0.30	0.16	0.072
	Self-employed	0.48	0.18	0.007
	Renting	0.43	0.25	0.079
	Outer regional	0.44	0.16	0.006
	Inner regional	0.41	0.12	0.001
18-29 yrs	18-24 years	0.32	0.18	0.080
	Bachelor or Graduate Certificate	0.57	0.29	0.048
	Casual employment	0.47	0.22	0.035
	Personal income \$20,001 to \$30,000	0.83	0.27	0.002
	Own home - payments ahead of schedule	-0.42	0.29	0.146

Source: HILDA Survey, Wave 1 data, Oct 2002

Note 1: Negative signs on the estimates indicate the corresponding group are less likely to expect three or more children than the reference group

Note 2: Partnering ref cat: Never married and never been in a defacto relationship Education level ref cat: Yr 11 or below Labour force ref. cat: Employed full-time Personal income ref cat: \$30,001-\$40,000 Personal income proportion ref cat: 20% < 40% Paid work hours ref cat: 31 - 40hrs per week Employment type ref cat Permanent employment Housing ref cat: Own home repayments on or behind schedule Remoteness ref cat: Major city Country

of birth ref cat: Australia ATSI ref cat: Non-ATSI Age 50+ yrs ref cat: 50-59 years Age 30-49 yrs ref cat: 45-49 yrs Age 18-29 yrs ref cat: 25-29 years.

14. Summary

These findings point to some important social structural factors associated with fertility differences. In particular, they highlight the importance of women's education and work aspirations, particularly in understanding childlessness. They also demonstrate the importance of examining the social structural factors associated with men's fertility and the changing impacts on different parity progressions. In particular, this study points to, what appears to be, the increasing importance of factors associated with men's circumstances, with the higher parity progressions, in understanding fertility decision-making in couples.

However, one of the key findings of this analysis was the important influence of partnering status in fertility expectations, particularly in relation to explaining childlessness and to a lesser extent one-child families. It confirms previous research that problems with stable relationship formation have contributed to the contemporary trend decline in fertility (Barnes, 2001; Birrell & Rapson, 1998; Weston and Qu, 2001b). However, it raises the question of the relative importance of partnering rather than work and family balance in explaining fertility decline.

Identifying patterns in partnering, including relationship formation and stability, thus has the potential to make a valuable contribution to understanding the sources of fertility decline and contribute to the debate on policy responses, and we investigate this in the next section.

Partnering patterns

Researchers have pointed to a number of changes over time that have been associated with a decline in stable partnering, particularly marriage (Weston & Qu, 2001b). In particular, Birrell and Rapson contend that problems with partnering have emerged partly as a result of a mismatch in marriage markets in Australia (1998). They claim that two different 'marriage markets', the 'breadwinner' and the 'collaborative' market, have emerged and this has coincided with shortages in the proportion of men or women available in each market. They argue that the growing education gap between women and men has contributed to more highly educated women experiencing a shortage of men in the collaborative market, where both partners contribute economically to the household. On the other hand, men with lower education levels in the more traditional gender roles of the 'breadwinner' market are experiencing difficulties in attracting a partner as structural changes in the labour market have reduced their work opportunities at the same time as more women in this market are able to find work (Barnes, 2001; Birrell & Rapson, 1998).

In this paper we investigated partnering differences through bivariate cross-tabulations and logistic regressions for 30 to 49 year olds in order to explore some factors associated with those men and women who have never married. If Birrell and Rapson's analysis holds, this analysis should identify two distinctive groups of men and women experiencing lower rates of partnering.

15. Partnering: Bivariate analysis

Simple bivariate cross-tabulations show that the partnering status of men, 30 to 49 years, varies systematically by education, income and work status factors with those with higher status tending to have higher proportions in stable relationships. For instance, 52% of men with very low occupation status⁸ are married in this age group and 33 % have either never been married or are separated, divorced or widowed. This compares with 74% of men with very high occupation

⁸ Occupation has been recoded into the ANU4 status score (see F.L. Jones and Julie McMillan (2000), 'Scoring Occupational Categories for Social Research: A review of the current practice, with Australian examples'. *Work, Employment and Society*, vol. 15. No.3, 539-563). The scores have then been divided in to five groups.

status who are married and 17% that have either never been married, or are separated, divorced or widowed. Other occupation status groups fall in between these two extremes.

The clear association between relationship formation and stability and social structural variables is more stark when comparing personal income. Among men who earn \$0 to \$20,000 of annual income, only 48% are married compared with 76% of those men earning \$90,001 and over. In this low-income category, 41% are not married or have experienced marriage breakdown compared with 16% of the high-income category. A glance at the income categories between these suggests that fairly low marriage rates continue up to those earning between \$30,001 to \$40,000 (56%), after which there is a somewhat sharp rise on marital status (73%) that continues for other high income categories. Similar associations can be found with men's education status, with higher education being associated with higher marriage rates and vice versa.

For women 30 to 49 years the cross-tabulations are less clear and show a set of different associations with relationship formation and stability than for men. Analysis by occupation status (which includes present occupation status or, if not working, the occupation status of the last job) shows that 61% of women with very low occupation status are married, compared with 70% of those with very high occupation status. However, there is no particular order to the categories in between. In part, this is likely to reflect the complications of assessing women's socio-economic status when many reduce their work participation when they partner. This also could explain the clear negative relationship between personal income and marital status.

Importantly, while no clear or linear associations between education level and partnering status are evident, there is some support for Birrell and Rapson's contention that women with higher education are less likely to be partnered (1998). However, the data suggest that this is only the case for the 3% of women in this age group with Postgraduate or Masters level qualifications. In this group 50% are married compared with around 66% for most other education levels. Most of this difference can be explained by the disproportionate number who have never been married or in a defacto relationship; 13%, compared with between 3% and 6% of other education groups.

These results provide some support for Birrell and Rapson's argument that there is a mismatch in marriage markets for low-income men and higher educated women (1998). However, the proportion of higher educated women involved appears to be too small to contribute in a major way to structural problems in partnering, while for men it is unclear whether the figures reflect differences in the timing of partnering and dissolutions.

16. Partnering: Multivariate analysis

In order to investigate this further we conducted multivariate analysis. We undertook two logistic regressions for 30 to 49 year old men and women to analyse the factors associated with never being married (but may or may not have had a defacto relationship). We used the same variables as in the parity progression analysis (omitting the income proportion variable) with the addition of the following attitudinal variables:

Table 9: Additional variables

Variable	Category	Variable	Category
Self-assessed financial prosperity	Prosperous	Importance in life of employment and work situation	Most important
	Very comfortable		Mid importance
	Reasonably comfortable		Least important
Reference Category:	Just getting along	Satisfaction with employment opportunities	0-3 Dissatisfied
	Poor	Reference Category:	4-6 Mid satisfaction
	Very poor		7-10 Satisfied
It is much better for everyone involved if the man earns the money and the woman takes care of the home and children	Disagree	Overall life satisfaction	0-3 Dissatisfied
	Neither agree or disagree		4-6 Mid satisfaction
	Reference category: Agree		Reference Category:

Table 10 shows that for both men and women many of the variables in the analysis were significantly associated with never being married. Many of the factors were also similar to those associated with parity progressions.

Men as breadwinners

Factors associated with men who have never married are largely congruent with Birrell and Rapson's argument that men with low income and work security are more likely to not be partnered (1998). For instance, men with low income between \$0 and \$20,000 (compared with \$30,001 to \$40,000) and assessing their financial well-being as 'poor', and men who are renting or in rent free or life tenure accommodation are more likely to have never been married. There is some indication that they are also more likely to be unemployed or not in the labour force. The data suggest, however, that it is not necessarily those with the lowest education levels that are more likely to have never married. There appears to be a tendency for men with Yr 12 education to be more likely to have never married compared with Yr 11 education and below.

Other factors in the analysis suggest that relative lack of partnering among lower income men are part of a broad tendency for men's partnering status to be largely linked to their role as breadwinner. In particular, men in the highest income bracket (\$70,001 to \$450,000) in this analysis are significantly more likely to be partnered. Similarly, those working 41 to 55 hrs or 56 or more hours per week as well as those rating work and employment as mid-important or among the most important things are more likely to be (or have been) married. Likewise, comparing those ranked in the middle deciles of the Index of Socio-Economic Disadvantage⁹ those in the highest bracket are less likely to have never married.

From this analysis it is also clear that those who have never been married are less likely to be content with their life. Men who ranked their satisfaction with life as dissatisfied or who were in the mid-range of satisfaction were more likely to have never married than those who were satisfied overall with their life. This seems to confirm that those men who have never been married are likely to be those who are relatively disadvantaged, while also perhaps indicating that, rather than a voluntary choice, lack of partnering is more likely to be undesired. Many of the factors associated with those who have never married point to a group of men experiencing financial and social disadvantages. This includes not being linked to the labour force and perhaps

⁹ SEIFA index 96: ABS classification of socially and economically disadvantaged areas of the country. Areas are grouped into ten deciles, in this analysis they have been grouped into five deciles. See ABS (1998b).

greater likelihood of receiving income support payments. One possibility is that those on a disability pension or sickness payments may be disproportionately represented. Further analysis would be needed to understand the circumstances of these men.

Women and partnering

This multivariate analysis of partnering among women seems to show more support for Birrell and Rapson's argument (1998). Unlike men, women with Postgraduate or Bachelor education, as well as those with Advanced Diplomas and Diplomas are significantly more likely to never have been married. Similarly, those who are working full-time as well as studying are more likely to not currently have a partner and to have never married. This seems to support Birrell and Rapson's view that this particular group of women are less likely to form and/or maintain stable relationships (1998).

Other significant associations in the analysis point to those with lower work involvement and income being more likely to be or have been married. However, this is less clear or useful to interpret because women who partner often reduce their work involvement in order to look after the family. There is some evidence that women who have never married are more likely to be somewhat disadvantaged. For instance, they are more likely to be renting or in life-tenure/ rent free accommodation. They are also more likely to be only mid-satisfied with their employment opportunities. Furthermore, women who are dissatisfied with their life overall, are more likely to have never been married. Similar to men in the 30 to 49 year age group, this suggests that at least some of the women who are not partnered are more likely to be experiencing some financial or social disadvantage, either as a consequence of not partnering and/or other related factors.

Financial security

There are other indications that women who are not partnered and never married may be ones experiencing some financial disadvantage. Those women who rate their financial well-being more highly (between reasonably comfortable to prosperous) are more likely to be partnered than those women who are not currently partnered and have never married; a finding which may reflect financial advantages of dual income families.

Consistent with the analysis of parity progressions, men and women who live in a home that is owned outright (compared with paying off a mortgage on or behind schedule) are significantly less likely to have ever been married. This result is consistent with the findings for fertility expectations and suggests that for some men who are not partnered, lack of financial security is not an important factor.

Similarly, women who have never been married and are not currently partnered are also significantly more likely to be living in a home that is owned outright. While it is possible (as it is for men) that some of these women are living in their parents' home, the consistency of these findings across the parity progressions suggests that it may also indicate a level of financial security or independence among women who have not been married. This is perhaps consistent with the higher proportion of women with higher education that are not partnered.

Employment type and other factors

Consistent with results in the analysis of parity progressions, self-employed men and women stand out as being significantly less likely to have never been married. The consistency of the distinctiveness of this group is remarkable. While further analysis would be useful to investigate some of the social structural variables that may help to explain this difference, it does suggest that there may be other factors, such as attitudinal or value differences that may be more important in understanding partnering and fertility patterns.

Table 10 also shows that remoteness of location and country of birth still remain important factors explaining differences in partnering rates. Analysis of value and attitude differences may also help to explain the continuing importance of these factors across parity progressions as well as partnering, even when taking account of many other social structural variables.

Table 10: Never married 30 to 49 years: Selected statistics from logistic regressions

Categories (Reference categories in note 2 below)	Estimate	Std Error	Sig.
WOMEN			
30 to 34 years	0.59	0.21	0.006
35 to 39 years	0.40	0.22	0.064
Postgraduate or Bachelor level education	0.53	0.21	0.012
Advanced Diploma, Diploma	0.50	0.25	0.046
Employed part-time	-1.84	0.58	0.001
Employed Full-time and studying	0.51	0.27	0.058
Self-employed	-0.73	0.32	0.021
Personal income \$0 to \$20,000	-0.82	0.26	0.002
Personal income \$20,001 to \$30,000	-0.81	0.27	0.003
Own home outright	0.69	0.27	0.010
Renting	1.60	0.24	<.0001
Life tenure / rent free	2.10	0.45	<.0001
Index of socio-economic disadvantage: High deciles	-0.56	0.21	0.009
Index of socio-economic disadvantage: Highest deciles	-0.82	0.22	0.000
Other immigrant (non-main English speaking)	-1.60	0.27	<.0001
Immigrant from main English-speaking country	-0.45	0.23	0.044
Remote, very remote and migratory	-1.54	0.76	0.043
Outer regional	-0.43	0.23	0.058
Inner regional	-0.70	0.17	<.0001
Financial well-being: Reasonably comfortable	-0.081	0.32	0.011
Very comfortable	-0.87	0.38	0.022
Prosperous	-1.41	0.83	0.088
Satisfaction with employment opportunities: 4-6 Mid-satisfied	0.48	0.17	0.004
Overall satisfaction with life: 0-3 Dissatisfied	0.83	0.38	0.028
Man earns; woman takes care home and children: Disagree	-0.38	0.17	0.027

Neither agree nor disagree	-0.72	0.24	0.002
MEN			
30 to 34 years	1.61	0.22	<.0001
35 to 39 years	1.13	0.21	<.0001
40 to 44 years	0.79	0.22	0.000
Yr 12 education	0.43	0.24	0.068
Self-employed	-0.53	0.19	0.006
Personal income \$0 to \$20,000	0.40	0.23	0.086
Personal income \$70,001 or more	-0.62	0.27	0.024
Paid work 41 to 55 hours per week	-0.46	0.17	0.006
Paid work 56 hours or more per week	-0.36	0.21	0.092
Own home outright	1.16	0.22	<.0001
Renting	0.96	0.21	<.0001
Life tenure / rent free	1.15	0.44	0.009
Index of socio-economic disadvantage: Highest deciles	-0.36	0.21	0.088
Outer regional	-0.47	0.20	0.020
Inner regional	-1.04	0.17	<.0001
Other immigrant (non-main English speaking)	-0.90	0.20	<.0001
Financial well-being: Just getting along	-0.49	0.26	0.053
Reasonably comfortable	-0.50	0.27	0.590
Importance in life of employment and work situation: Most important	-0.58	0.30	0.055
Mid importance	-0.64	0.33	0.052
Satisfaction with employment opportunities: 0-3 Dissatisfied	-0.39	0.22	0.080
Overall satisfaction with life: 0-3 Dissatisfied	0.58	0.33	0.080
4-6 Mid-satisfied	0.60	0.16	0.000
Man earns; woman takes care home and children: Neither agree no disagree	0.36	0.18	0.048

Source: HILDA Survey, Wave 1 data, Oct 2002

Note 1: Negative signs on the estimates indicate the corresponding group are less likely to be never married (ie more likely married, defacto or separated, divorced or widowed) than the reference group

Note 2: Education level ref. cat.: Yr 11 or below Personal income ref. cat: \$30,001-\$40,000 Personal income proportion ref. cat: 20% < 40% Paid work hours ref. cat: 31 - 40hrs per week Employment type ref. cat: Permanent employment Housing ref. cat: Own home repayments on or behind schedule Remoteness ref. cat: Major city Country of birth ref. cat: Australia Index of socio-economic disadvantage ref. cat: mid deciles Importance of work ref. cat: Least important Satisfaction with employment opps ref. cat: 7-10 Satisfied Overall satisfaction with life ref. cat: 7-10 Satisfied Financial well-being ref. cat: Poor Man earns; woman takes care home and children ref. cat: Agree

17. Summary

This analysis provided some support for Birrell and Rapson's hypothesis that there are two distinctive groups, low-income men and higher educated women, who are tending not to partner (1998). However, it also appears that there are other groups that tend not to be partnered and never married, but further analysis is needed to clarify these findings. Ekert-Jaffe et al have noted similar declines in partnering and delays in family formation in both the UK and France in the decade between the mid-1980s and the mid 1990s (2002). They suggest that this may be due to the impact of a broader decline in the economic situation that is having an impact on family formation. For instance, they claim that in France the very high proportion of women not in unions is known to be a consequence of increased unemployment and extended years in education (2002).

This analysis of partnering is by no means exhaustive. Further investigation of the HILDA data provides the opportunity to look at the relationships between broad external economic factors and work security for particular subgroups over time. In addition, attitudinal and family and partnering history variables may help to shed more light on the characteristics of the groups that are less likely to partner. Longitudinal data will be particularly helpful in locating partnering trends and their links to people's fertility outcomes during their lifespan.

Conclusions

Summary

Declining fertility rates in Australia and their contribution to the problems of structural ageing have prompted research and considerable public debate on the sources of these trends. A key concern has been that difficulties in balancing the demands of work and family have had a negative impact on fertility, particularly among highly educated and work-oriented women. Relatively little research has been conducted to understand what factors contribute to men's fertility choices and outcomes. This is surprising since research on couple decision-making about having children has suggested that there is no pattern for either men or women to determine the final decision. In addition, other key theories on declining fertility rates, such as risk aversion in the face of work and relationship insecurity and rising lifestyle expectations, are likely to impact on both men and women's fertility expectations, yet their impact is not fully understood. Furthermore, studies have also pointed to the importance of relationship instability and changing patterns in family formation on declining fertility, yet it is not clear to what extent this may account for declining fertility.

Across low fertility countries a variety of approaches, including a range of family friendly policy packages have been introduced to reverse or stabilise fertility decline, serving to fuel debate on the causes of the decline and the effectiveness of these policies (Castles, 2002; Lesthaeghe & Moors, 2000; Manne, 2001; McDonald, 2000b). While some research suggests that a range of family friendly policies have had important impacts on raising the fertility rate (Castles, 2002; Ekert-Jaffe et al, 2002; McDonald, 2001b; McDonald, 2000b), others have argued that the impact is questionable or minimal in comparison with the cross-national variation in fertility rates, suggesting that other key factors have been overlooked (Chesnais, 1998; Manne, 2001). McDonald (2002) argues that, while lessons can be learned from cross-national research, it is vital to understand the specific local context of fertility patterns in order to identify and assess an appropriate range of policy responses to fertility decline. Similarly, Castles (2002) has pointed out that the factors associated with fertility rates are subject to relatively rapid change over time. In Australia, there are a number of gaps in research. In addition to understanding the

circumstances of men in fertility decisions, relatively few studies have looked at how factors are linked with key parity progressions to additional births in Australia (Gray, 2002; McDonald, 2002; McDonald, 2000b; Meyer, 1999).

This paper sought to address aspects of these questions using the HILDA data. Since one key aim of the analysis was to assess the consistency of the HILDA data with previous research in the area of fertility, we concentrated on social-structural variables in the analysis. A key aim was to examine the association of these factors with fertility for three main parity progressions. These included 0 to 1 or more children; 1 to 2 or more children and 2 to 3 or more children. Men and women 30 to 49 years were the primary focus of the analysis, though analyses were also carried out for younger (18 to 29 years) and older (50 years and over) men and women. In addition to this, relationship formation problems among 30 to 49 year olds were also examined with reference to Birrell and Rapson's (1998) contention that a mismatch in marriage markets has resulted in higher educated women and lower educated men being less likely to be partnered.

Key findings

Partnering and relationship formation

Partnering was found to play a key role in explaining expectations of childlessness and, to a lesser extent, having only one child. Lack of relationship formation and the relative instability of the relationships were clearly linked to higher expectations of childlessness. This association was found for both men and women across all age groups that we examined. The links between partnering status and the propensity to expect only one child, rather than more, was less marked than for childlessness, however, it clearly still played a significant role. In particular, one-child expectations seemed to be linked to relationship breakdown. Not surprisingly, perhaps, the role of partnering did not appear to be an important factor explaining the likelihood of having more than two children.

Given the importance of partnering, we examined difficulties in relationship formation by looking at the factors associated with never having been married (and not currently being in a defacto relationship) among 30 to 49 year old men and women. This analysis provided some support for Birrell and Rapson's (1998) contention that lower income, work insecure men are more likely to not be partnered. Furthermore, this analysis seemed to demonstrate that men's capacity to fulfil the breadwinner role is positively related to the likelihood of being partnered. Similarly, there was some support for Birrell and Rapson's (1998) argument that higher educated women tend to be more likely to not to be partnered, although the associations to work and income are less clear, given the tendency for women to change their work status when they partner. Overall, however, the findings indicate that those that have never been married are a more diverse group than those proposed by Birrell and Rapson's (1998). For both men and women they appear to include those that are more financially secure as well as those that appear to be more financially and work disadvantaged. However, for both men and women those who rated themselves as dissatisfied with their overall satisfaction with life were more likely to have never been married.

Socio-economic status

This study broadly confirmed that, in Australia, higher socio-economic status tends to be associated with lower fertility expectations. In addition, this analysis demonstrates the value of examining parity progressions of additional children by pointing to the existence of some changes in associations with particular social-economic factors for different progressions.

In particular, it showed that women's education was clearly linked to higher expectations of childlessness, yet it was far less important in understanding expectations for one child and two child families. However, as was pointed out earlier, the higher rates of childlessness among

higher educated women can also be partially explained by their lower likelihood of being partnered. In addition, some of our analyses seem to indicate that work involvement, rather than education per se, is more important in understanding the tendency for women to expect fewer children. As anticipated, women with lower levels of work involvement were more likely to have more children in each parity progression, which is consistent with the tendency for women to remain the primary care-givers. As well as this, there is evidence that women with lower work and financial security have a greater likelihood of having larger families (3 or more children). These findings were thus largely consistent with McDonald's analysis that women who face higher work opportunity costs are more likely to trade-off fertility for work (1997).

Perhaps more importantly, this study highlighted the importance of examining the circumstances and characteristics of men in understanding the patterns of fertility rates in Australia. It is very apparent that the circumstances of men that are associated with lower fertility rates are distinctive from women. There is an overarching theme that men with higher capacity as a breadwinner, including higher income and work involvement are more likely to have positive fertility expectations up to two children. The relationship appears to reverse after this, and men with higher levels of education tend to be more likely to expect two rather than three or more children. In contrast, it appears to be men with lower education levels and lower work and financial security that are more likely to have the largest families. What this analysis seems to indicate is that the importance of men's circumstances for understanding fertility expectations appears to increase after first births, a finding which is consistent with some other studies (Cooke, 2001; Ekert-Jaffe et al, 2002).

This suggests that the relationships with income and financial security are complex, involving changing values as well as income effects on fertility rates (Ekert-Jaffe et al. 2002; Meyer, 1999). These findings seem to be most readily interpreted by other cross-national research of low fertility countries which suggests that there is an income effect for couple households that tends to result in fertility rates having a U-curve association with household (often male) income levels (Ekert-Jaffe et al, 2002). This explains the tendency for middle-income groups to have lower fertility levels (Ekert-Jaffe et al, 2002), a finding which is consistent with indications of a curvilinear association of mean fertility rates by household income level found in the HILDA data (Fisher, 2002).

Other results from our analyses suggest there are further complexities in the patterns of partnering and fertility in Australia. For instance, there are indications that there are some relatively financially and work disadvantaged men and women who tend to have low fertility expectations and are more likely to have never been married. While it is unclear what distinguishes this group, it appears to point to people who experience both financial and social disadvantages.

In juxtaposition to this finding, however, our analysis showed a clear connection between financial security, in the form of owning your home outright, and lower fertility expectations across the parity progression, sex and, to some extent, age groups. This finding is somewhat surprising, given that financial security is often associated with higher fertility and it has been suggested that declining fertility may be linked with lack of housing affordability. Again, it is unclear what may distinguish these people or how diverse this group is. For instance, while a good deal of this association may be explained by the higher financial costs of having children, it may also suggest that some people are prioritising financial security over raising a family. However, there are indications that those with greater housing security are also more likely to have never been married.

Other factors

Finally, for both men and women, self-employment fairly consistently, and somewhat surprisingly, showed significant associations that tended towards higher fertility expectations. This association was particularly clear in distinguishing those that expect to have three or more children rather than two. This finding is consistent with findings, at least for men, in studies of parity progressions in the U.K. (Ekert-Jaffe et al, 2002). While self-employed men and women were also significantly more likely to be partnered, the reasons for these associations with fertility at this stage remain open. One suggestion would be that they either reflect an increased flexibility to deal with the work-family balance or that they are measuring some kind of surrogate income effect (because income data from the self-employed are more frequently missing or unreliable). An alternative suggestion would be that they indicate that attitudes and values about children among this group are different from other groups. As expected, remoteness from major cities tends to be linked with higher partnering and higher fertility rates for women and somewhat for men. There was some evidence that lack of available women dampened the fertility expectations for men in outer and inner regional areas. A somewhat surprising finding was the lower likelihood for younger women (18 and 29 years) living in remote and very remote areas to expect to have children.

There was a tendency, overall, for expectations of having children among migrants (particularly those from main English-speaking countries) to be lower than those born in Australia. The patterns of association indicated that these may be related to the context and circumstances of arrival, including the disruptive effects on family formation of migration itself.

Further research

Further work is needed on the impact of relationship instability on fertility, in particular, analysis of the impact of relationship instability on the prevalence of one-child families. Exploration of family and relationship histories as well as socio-economic factors through HILDA's longitudinal data may help to point to relevant early indicators of likely difficulties with relationship formation and partnering instability.

While this analysis examined individual circumstances and characteristics in relation to fertility, the HILDA data also provides a valuable opportunity to investigate fertility decision-making in couples. In particular, by matching couples that have each filled out the personal questionnaire, the impact of key factors relating to the household unit rather than individuals can be taken into account in analysis of patterns in fertility decisions. For instance, this would enable comparisons to be made of fertility expectations, as well as the stresses and strains of balancing work and family, of full-time working parents compared with other couple work structures. In addition, analysing matched couples allows comparisons to be made of the congruence between partners in fertility desires and expectations. Some preliminary analysis of around 4,000 matched couples shows some promising opportunities for further investigation.

There is also potential to conduct valuable research on parity progressions of additional children for both individual and couple data. Research has shown that the patterns of fertility rates within subgroups can vary substantially between countries with similar aggregate fertility rates (Ekert-Jaffe et al, 2002). Our study, for instance, suggests that Australia's fertility patterns are more akin to those in the U.K. (where there are large disparities linked to socio-economic status and women's work involvement) than with those in France (Ekert-Jaffe et al, 2002). Furthermore, the authors of that study directly attribute the more even distribution of fertility outcomes in France to the raft of family policies aimed at maintaining fertility rates (Ekert-Jaffe et al, 2002). Comparison of Australia's distribution of fertility patterns by socio-economic status, including socio-occupational categories, has the potential to inform the fertility policy debate and better target assistance by drawing attention to the social context of fertility decisions.

Of course, longitudinal analysis will be particularly valuable for interpreting these influences with greater clarity. In the context of structural ageing, there is an increasing likelihood that maternal employment will become more pervasive across socio-economic groups. Identifying these trends and understanding the ways in which work and income and aspirations affect fertility outcomes can make an important contribution to preparing to deal with the consequences satisfactorily.

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