# Which Women Stop at One Child: Evidence from Australia

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**Abstract**

The decline in fertility in Australia in the 1990s reflected both decreased first order birth rates and decreased second order birth rates (Kippen 2004). Whilst childlessness has been studied extensively, little attention has been paid to the progression from one to two children. This study analyses which women with parity one do not progress to parity two, using data from 1809 parous 40-54 year olds from the Household Income and Labour Dynamics in Australia (HILDA) survey. A woman's birthplace, highest level and type of schooling, her father's occupation, and the intactness of her parents' relationship are shown to be important early lifecourse predictors of whether a she stops her childbearing at one child. A woman's age at first birth, marital status, health, occupation, labour force participation and attitudes to religion and to leisure activities are shown to be significant later life correlates of her progression to a second birth. The causes of trends over time are discussed.

**Introduction**

Despite its small, recent increase (total fertility increased from 1.73 in 2001 to 1.81 in 2005), the current low level of fertility remains a prominent issue in Australia's public debate (ABS 2006a). Kippen (2004) has shown that the reduction in fertility in Australia between 1991 and 2000 was due largely to the reduction and the delay of first and second births; there having been little change in fertility rates for women with parity two or higher over this period. The percentage of women who by their 50$^{th}$ birthday had a completed family size of one increased significantly between 1991 and 2001 and,

according to Kippen (2006), is projected to rise to around 15% in 2021, almost double the figure for 1991. Whilst the demographic characteristics of the childless in Australia have been studied extensively (Merlo and Rowland 2000, Weston and Qu 2001, Parr 2005), it appears little attention has been paid to women who cease childbearing after the first child. In some countries other than Australia one-child families have become widespread, not only in China, which pursues a one-child policy, but also in Bulgaria, Romania and the countries formed from the former Soviet Union (Avdeev 2001, McDonald 2002, Greenhalgh 2003, Sobotka 2003). However despite the increase in its prevalence during the 1990s, in contemporary Australia the one-child family is still something of a rarity; the two child family remains the norm.

The decision to progress from one to two children has ramifications for family budgets, parental time use, and the socialisation and wellbeing of the existing child. Whilst, not surprisingly, the direct costs of raising one child are less than the costs of raising more than one child, the marginal expenditure on second or higher order children is considerably less than that for the first child (Henman 2001, Percival and Harding 2002). One of the components of the additional cost of additional children is an increased number of hours of formal (non-parental) childcare (Craig 2005). Whilst the indirect costs (foregone earnings of (usually) the female partner) of having more than one child also exceed those for one child, it is the first child to which the majority of the indirect costs is attributable (Chapman *et al.* 1999, Breusch and Gray 2004). The time spent looking after their children is on average greater for women more than with one child than for women with one child. As well as the additional time spent looking after their children being to the detriment of time spent in work, it also reflects a loss of time for

personal care (sleeping, eating and drinking, bathing etc.) and for recreation (i.e. recreation without children). However the effects on time use of each additional child are less than the effects of the first child (Craig 2003, 2005 and 2006, Craig and Bittman 2003). Clearly the gradients for direct costs, indirect costs and time-use with the addition of children will vary widely between individuals depending of a wide array of employment, expenditure and time-use factors including; the income levels of both parents (but usually of more importance those of the female partner), entitlement to paid or unpaid parental leave, use of child care (including informal child care provided by family members), and the type of schooling chosen for children (public, Catholic or private).

In Australia the economics of childbearing is also affected by the availability of a complex range of government benefits which are payable to be parents of children. The more significant benefits are means tested on family income (Family Tax Benefit Part A) and on the income of the lower earning parent (Family Tax Benefit Part B) (McDonald 2001). A means-tested benefit which partially covers the cost of childcare is also available. With effect from July 2004, the Australian Federal Government introduced a substantial, flat-rate payment to the mothers of all newly-born children, known as the Maternity Benefit, and increased the amounts and income thresholds for eligibility for Family Tax Benefits. In doing so it phased out a tax rebate based on the reduction of income following the birth of the first child, known as the Baby Bonus. The changes appear to have been at least partly motivated by a concern that Australia's birth rate was too low. Australian Federal Treasurer Peter Costello's widely publicised soundbite 'If you can have children it's a good thing to do - you should have one for the father, one for

the mother and one for the country, if you want to fix the ageing demographic' is evidence to this effect (Dodson 2004, Heard 2006).

Second (and higher order) children should also have utility for the parents. However, the marginal utility may not be as great as for the first child. For example the first child uniquely confers on the mother and father the status of parenthood, continues their bloodlines, and more frequently than for any other single birth the father's Y chromosome and family name (Blake 1979). Progression from one to two children not only affects the parents it also affects the wellbeing of the first child in numerous ways. Most obviously it brings to the first child the company of a sibling. It also depletes the material resources and parental time and energy which may otherwise have been spent on the first child. Only children have been found to have relatively high levels of educational attainment, income and wealth (Parr 2007). The study of the characteristics of the parentage of only children may help to enhance the understanding of their educational and labour market success.

The determination of completed family size is an extremely complex and inadequately understood process which may be affected by the varying values of a wide range of variables between birth and the cessation of women's fecundity. Statistical correlations between variables measured after the onset of fecundity may be affected by the effects of family size on those variables as well as the effects of the variables on family size. The analysis begins with examination of the relationships between variables whose values are determined early in the lifecourse (specifically age, ethnicity, numbers of siblings, parental characteristics, and education) and whether or not a woman who had one child subsequently did not have a second child. The effects of variables measured at

the time of the first birth are then considered. Finally the correlations between variables measured at the time of the survey used and whether or not a woman stopped at one child are then considered. The implications of the results are discussed.

## Data and Methods

The data are from Wave 1 of the Household Income and Labour Dynamics in Australia (HILDA) survey, a large-scale, nationwide, longitudinal survey of the household population of Australia conducted in 2001 by the Australian Commonwealth Government's Department of Family and Community Services. A multi-stage, cluster sample design was used, and 13,969 men and women from 7,682 households and 488 census collection districts, which were stratified by State or Territory and metropolitan or non-metropolitan area, were successfully interviewed. Data were collected on family formation and background, employment and unemployment history and status, and income (Watson and Wooden 2002a, 2002b).

The analysis is restricted to the 1809 female respondents who were recorded as aged between 40 and 54 years in the Wave 1 data and as having had one or more children. The women with one child represented 11.9% of women in the age range and 13.5% of women with one or more child. In 3 cases the only child had died. Almost all of the women with one child appear to have completed their childbearing. When asked "how likely are you to have a child/more children in the future" only 6 (2%) of females rated the likelihood 6 or above on a scale from 0 to 10.

Logistic regressions of whether or not a woman with one or more children progressed to having a second child were fitted. Appendix A lists the extensive array of explanatory variables which were entered in the models. The entry of variables in the logistic regressions was staged, with the pattern of entry reflecting the temporal ordering of the variables.

## Results

### *Descriptive Analysis*

Table 1 shows the variation in the numbers of women with one child expressed as a percentage of women with one or more children. Of the variables whose values are determined early in the lifecourse, the greatest range of variation is that between country of birth groups. Parous migrant women are more likely than women who were born in Australia to have stopped their childbearing at one child, and there is a wide variation between the different overseas countries of birth. Half the parous women who were born in an East Asian country had only one child (the women sampled from this group were mostly either born in China or Hong Kong). One quarter of the parous women who were born in a Northern, Western (excluding the UK and Ireland) or Eastern European country had just one child (the largest national subgroups are those born in the former republic of Yugoslavia, Germany, Netherlands and Poland). Of the various migrant groups considered only the Middle East or North Africa-born had a lower percentage than the Australia-born of parous women who stopped at one child. Another ethnic group with a

relatively low propensity to stop childbearing at one child is the Aboriginal and Torres Strait Islander population: the percentage of parous Aboriginal or Torres Strait Islander women who stopped at one child is about two-thirds the national average.

There are wide variations by the level and type of schooling a woman had. The percentage of parous women with one child is significantly lower for women who did not complete the final year of senior secondary school, Year 12 (or the overseas equivalent), than it is for women who completed it. However the difference between women who completed a Bachelor's degree or higher and those for whom Year 12 was the highest level of education is slight. A much higher percentage of parous women who attended non-government non-Catholic schools (most of which would be fully independent but which would also include schools for other religious denominations and religions) stopped childbearing at one child compared to women who attended government schools (public schools as they are known in Australia) or Catholic schools.

The size, socio-economic status and intactness of the family of origin are related to the likelihood of a woman stopping at one child. Interestingly women who themselves grew up as an only child are much more likely themselves to have just one child. The variation between women with other numbers of siblings is slight. There are wide variations by the father's and the mother's occupations. Women who when aged 14 had a father in a managerial or administrative occupation are the least likely to have stopped at one child, whilst women who when aged 14 had a father with no recorded occupation are the most likely to have done so. It should be noted that 61% of the fathers recorded as being in managerial or administrative occupations were farmers or farm managers. Thus the low percentage of their daughters who stop at one child would be related to the higher

percentage who would have had a rural upbringing. Women whose mother had no occupation are only slightly more likely to have stopped at one child than women whose mother had an occupation. However there is wide variation between different types of maternal occupation. The divergence of the patterns for the two "high end" of the occupational spectrum groups is striking: women whose mother was in a managerial or administrative occupation are by far the least likely to have stopped their childbearing at one, whilst women whose mother was in a professional occupation are the most likely to have done so. Women whose father was either absent from the parental home when they were aged 14 are about one-and a half times as likely as women whose father was present to have stopped childbearing at one child.

There are also wide variations in the percentages of parous women who stopped at one child by their characteristics at the time of the first birth. The percentage of parous women who stopped at one child is higher for women who had never been legally married at the time of their first birth than for women who at the time of the first birth were either currently or formerly married. The relationship between the percentage of women stopping at one child and the age at birth of the first child is particularly strong. The percentage who stopped at one rises with increasing steepness as age at first birth increases. Almost all the women who first gave birth above the age of 40 and over 40 percent of women who first gave birth between 35 and 39 stopped at one child.

There is wide variation in the propensity to stop at one child by the current relationship status of a woman. Women who have never married and who are not currently living with a partner are over four times as likely to have stopped at one child than women who are currently married. Women who have been cohabiting with a partner

for at least three months without being legally married (in a 'de facto relationship') are nearly twice as likely as legally married women to have stopped at one child. Divorced, separated or widowed women also are considerably more likely to have stopped at one child than legally married women. The percentage of parous women who stopped at one child also rises steeply with the age at first marriage. Over 40% of the parous women who first married above age 35 have only one child, roughly six times the percentage for women who married below age 20.

There are also some striking differences in the percentage of parous women who stopped at one child by a woman's current and past labour force participation. As the percentage of a woman's working life (time in paid employment plus time unemployed and looking for work plus time not in the labour force) spent not in the labour force increases the percentage of parous women who have one child decreases. This may reflect women with more children having taken more time out of the labour force in order to look after their children. Women who are currently unemployed and women who are working full-time are more likely to have stopped childbearing at one child than women who are working part-time and women who are not in the labour force. This may reflect women with more children being more likely to either work part-time or to withdraw from the labour force altogether in order to look after their children. There is a wide range of variation between categories for a woman's current occupation, but no clear pattern of variation with either occupational status or industry type. Of the various occupational groups, women in trades and related occupations are the most likely to have stopped at one child and women in managerial and administrative occupations are also relatively likely to have stopped at one. Women in two 'low end' of the occupational

spectrum groups, labourers and related and elementary clerical, sales and service occupations, are the least likely to have stopped at one child. Women in professional are slightly less likely than average to have stopped at one child. Most of the women in professional occupations are either educational professionals (41%) or health professionals (29%). The former are relatively unlikely to have stopped at one child. The average gross annual individual income of women who stopped at one child (A$25,959) is slightly higher than that of women who progressed to a second child (A$23,643). The variation in the percentage who stop at one between income quartiles is slight. Women in the lowest income quartile are the least likely to have stopped at one, presumably because of withdrawal from the labour force or work on a part-time basis being more likely for those with more children.

*Multivariate Analysis*

Table 2, which shows the final selected model based on the early lifecourse variables, shows significant effects for father's occupation, the intactness of the parental relationship, the level and type of schooling, and birthplace persist after controlling for the effects of other early lifecourse variables. Table 3 introduces controls for the effects of age and marital status at first birth, whilst Table 4 presents the final selected model after introducing the later lifecourse variables. Due to the large number of variables entered and to space limitations the full models are not shown (Appendix A).

The largest early lifecourse effects are those for birthplace. Being born in East Asia increases the odds of a woman stopping at one child more than sixfold. This is

despite all the women in this group having been married at least once and over 90% of the women in this group still being legally married, fewer than 5 percent being unmarried at the time of the first birth, and the ages of marriage and first birth tending to be younger than average. Since half the women in this group were born in China, the one child policy would be an explanatory factor. For the China-born roughly 80% of women had the first birth in China. China-born women who had their first birth in China were more likely to have stopped childbearing after one child than their counterparts who had their first child in Australia. The use of sterilisation is widespread in China. In some cases it may be due to coercive pressures (Short *et al.* 2000). However it is possible that the considerably increased likelihood of China-born women stopping at one child reflects a preference for this family size both in the context of China and in Australia. In Chinese culture the importance of a first child for continuation of the blood line and the family name is especially strong and this may lead to a selection into parenthood of couples who do not place such a high importance on other utilities of children. Nie and Wyman (2005) show that for prosperous middle-class parents in Shanghai the cultivation of (only) children through a wide array of outside school tuition and other expenditures has become the norm. Consequentially these parents perceive additional children as being very expensive. Such a pattern may have conditioned the attitudes of the China-born in Australia towards a preference for a one child family.

It is also interesting to note that, as is the case for their China-born counterparts, the propensities of women born in Hong Kong and Taiwan to stop at one child also are very high, even though neither of these regions has been subject to the one-child policy. It may be that spousal separations caused by the male partner working in Hong Kong,

Shanghai or elsewhere in East or South-East Asia whilst the female partner and child are in Australia (so-called 'astronaut families') partly explains their increased likelihood of stopping at one. Most Hong Kong-born and Taiwan-born migrants enter Australia under skills migration schemes. The high percentages of Hong Kong-born and Taiwan-born women in Australia who work in professional occupations and a resultant greater cost of children in terms of foregone earnings or childcare, together with smaller means-tested family benefits, may also contribute to the explanation (Parr and Guo 2005). So too may strong parental aspirations for the educational success of their children and a resultant restriction of family size to maximize the resources per child (Parr and Mok 1995). For all groups of migrants the location of grandparents, particularly grandmothers, in the origin country may make childrearing a more arduous prospect, thus discouraging parity progression. This may be a particularly important consideration for East Asian women in view of cultural traditions which place a greater importance on grandmaternal child care.

Being born in one of the main English-speaking countries for migrants to Australia or in Northern, Western or Eastern Europe also increases the likelihood of stopping at one child significantly. For about two thirds of these women the first birth occurred in Australia, and so their family formation is largely explicable in terms of their circumstances in Australia. Women born in the main English-speaking countries or from Northern or Western Europe tend to be less 'traditional' in their family formation patterns. They are less likely to marry, more likely to cohabit unmarried, more likely to divorce or separate and more likely to be unmarried at the time of the first birth. They are also relatively likely to leave marriage and the birth of the first child to later in life. Thus union instability and infecundity (the so-called 'biological clock') would appear to be

contributory factors to their increased likelihood of stopping at one child. Both these migrant groups are relatively likely to participate in the labour force and to attain relatively high occupational status and incomes in Australia. Thus it may be that the greater indirect and childcare costs of additional children help to explain their higher propensity to stop at one. However, after the addition of the later lifecourse variables to the model these groups still have a greater likelihood of stopping at one child than the Australia-born do. It may also be that migrants from these parts of Europe, from the British Isles and from North America perceive the budgetary implications of additional children somewhat differently, thinking of additional children in terms of substantial additional travel costs (not to mention the more arduous travel experience!) for visits to friends and relatives in the country of origin and fearing the costs of additional children will eat into their savings towards such trips. Moreover family care obligations may eat into annual leave allowances, leaving too little remaining accrued leave entitlements for long trips to Europe or North America to be worthwhile. The explanation of the increased likelihood of Eastern European women stopping at one child may be somewhat different. The largest subgroup is those born in the former Yugoslavia. It may be the disruption to family life of Balkans war of the early 1990s was a factor. Fertility rates fell sharply across Eastern Europe following the downfall of the communist regimes (Sobotka 2003). The factors which gave rise to this, which according to Sobotka (2003) include high unemployment, economic and social instability, and the increased pursuit of consumerist lifestyles, may have contributed to the high percentages of women born in this region and now living in Australia who have only one child.

Having a father in a managerial or administrative occupation significantly reduces the likelihood of a woman stopping her childbearing at one child (Table 2). The size of the effect is changed only slightly by the introduction of the later lifecourse variables (Tables 3 and 4). The effect of a father in a managerial or administrative occupation may reflect the daughters of men in managerial or administrative occupations being better able to afford to have more children due the greater wealth they attain (Parr 2007). It would also reflect that a high percentage of the fathers in such occupations were farmers or farm managers, and hence a higher proportion of these women were brought up in rural or semi-rural locations. Fertility rates in rural areas tend to be higher than those in urban areas and the disruption of unions by divorce or separation is less likely (Carmichael and McDonald 2003).

Having had a parental relationship disrupted by divorce or widowhood increases the likelihood of a woman stopping at one child (Table 2). This appears to be linked to the 'intergenerational transmission of divorce': women whose parents divorced are themselves more likely to experience a divorce and the disruption of a union by divorce may lead to a premature termination of childbearing (Kiernan and Cherlin 1999, De Vaus *et al.* 2005). This finding may also reflect the adverse effect of the loss of the father on the living standards of the family, and hence a reduced ability to afford having more than one child (Parr 2007). The introduction of a variable showing whether a respondent is divorced, separated or widowed reduces the residual effect of the father being absent from the home or deceased to insignificance (Table 4).

Higher levels of schooling increase the likelihood of a woman stopping at one child. The positive effect of the completion of Year 12 on the likelihood of stopping at

one child appears to be linked to the later ages of first birth of the more educated women: the percentage of women who completed Year 12 who first gave birth after 30 is more than double the percentage of women who did not complete Year 12 (Tables 2 and 3). Thus for the more highly educated women the likelihood of the completion of desired childbearing being thwarted by infecundity is more likely. However higher levels of education also increase a woman's likelihood of a participating in the labour force and her likelihood of entering a high-earning occupation. The implications of progressing beyond a first child for higher earning women relative to those for lower earning women include a greater loss of earnings for any specified time of paid work foregone to look after the additional child(ren) (Breusch and Gray 2004). Their greater earnings also cause a reduced receipt of means-tested benefits and childcare subsidies. Higher earning women are more likely to make more use of and incur a greater expenditure on non-parental childcare than lower earning women, partly because they are likely to work more hours (Craig 2005). Their extra hours at work imply time for other activities must be sacrificed. However, the more educated women also tend to value the development of their children's human capital more highly (Craig 2006). According to Craig (2005) the loss of time spent with their children by women who work more and by women who use more non-parental (formal) childcare is less than the hours of work or the hours of formal childcare used. This reflects a pattern of sacrificing time for housework, personal care, and (childfree) leisure to preserve time spent with children. Bianchi (2000) has shown for the United States that, despite women's increased propensity over time to combine of work with raising children, maternal time spent with children has been relatively stable over time. As well as reflecting the delay of the initiation of childbearing and its

restriction due to associated direct and indirect costs and the value placed on the first child's educational success, the higher likelihood of the more highly educated stopping at one child may also reflect the more educated more readily embracing relatively unusual family structures and sizes, including having just one child.

A woman having attended a non-government, non-Catholic school increases her likelihood of stopping at one child. This is despite the higher incomes and wealth and, hence, a greater ability to afford more children in this group (Parr 2007). Part of the explanation of the greater propensity to stop at one child of women who attended such schools appears to lie in their tending to marry and produce their first child relatively late. However, even after the addition of age at first birth (and a range of other variables) to the model a significant effect for having been educated in a non-Government non-Catholic school remains. It may also be that women who attended fully independent schools are more likely to aspire to higher quality children and, perhaps, to send each and every one of their children to such schools. Thus, even though discounted fees for siblings of existing children may be offered by some private schools, they may perceive children as more costly (Blake 1979). It is likely a higher percentage of those attending such schools would have been boarders who had been separated from their siblings for extensive periods. Thus these women's early life experiences may have lead them to see the provision of a sibling for their child as less important.

Large and significant effects of relationship status are evident (Tables 3 and 4). A woman never having been legally married at the time of the first birth is associated with a significantly increased likelihood of her having stopped at one child. This would reflect the greater fragility of unmarried relationships relative to that of married relationships. A

significant positive quadratic effect of age at the birth of the first child on a woman's likelihood of stopping at one child is evident, reflecting that the likelihood of not progressing to a second birth increases with increasing steepness as age at first birth increases. Perhaps not surprisingly, women who have never legally married and who are not currently cohabiting have a considerably higher likelihood of having stopped at one child than women who are either married or in a cohabiting relationship. A woman being divorced, separated or widowed significantly increases the likelihood of her having stopped at one child, relative to that of a currently legally married woman. This would reflect the disruption to childbearing caused by the break-up of relationships and the subsequent lack of a suitable partner. Interestingly, after controlling for the other variables in the model the difference in the likelihood of stopping at one child between legally married women and women who are cohabiting unmarried becomes not statistically significant.

A woman's history of labour force participation appears to be significantly associated with her likelihood of stopping at one child: the likelihood of a woman stopping at one child reduces as the percentage of her working life spent out of the labour force increases (Table 4). However this may reflect the effect of the arrival of additional children on labour force participation as much as if not more than it reflects not being in the labour force increasing the likelihood of progression to a second child. Although women in professional occupations differ little from the average in their likelihood of stopping at one child (Table 1), after controlling for the effects of their later ages of first birth, their higher rates of labour force participation, the lesser importance they tend to place on religion and the other later lifecourse variables in the model, a negative effect of

a woman being in a professional occupation becomes apparent (Table 4). The negative residual effect of a woman being in a professional occupation may reflect the greater access to paid and unpaid maternity leave of women in professional occupations (ABS 2006b). It may be the compatibility of work as an educational professional with looking after children contributes to the explanation of the negative effect of a woman having a professional occupation. As well as school teachers receiving relatively generous allowances for maternity leave and to some having access to childcare facilities which are located at their workplace (and as such are tax-deductible), education professionals have working hours which readily facilitate their looking after their children outside school hours and terms. A woman having a long-term health condition, disability or impairment is associated with an increased likelihood of her stopping at one child. It may be that in some cases poor health contributed directly to the discontinuation of childbearing.

Significant effects of attitudinal variables are apparent. The strength of the importance a woman places on her leisure activities is associated with an increased likelihood of her stopping at one child. An additional child brings with it a loss of non-child leisure time (Craig and Bittman 2003, Craig 2005). Women who value such leisure time more highly may therefore be less likely to have an additional child. However the association between these variables may also reflect the arrival of second and in some cases higher order children causing women to downgrade the importance they place on non-child leisure time, such as time spent on hobbies, on sports or with friends. The strength of the importance a woman places on religion is associated with a reduced likelihood of stopping at one child. This may reflect the value placed on childbearing in some religious teachings, the socialisation with members of relatively large families, and

the practical and emotional support mechanisms for parents which religious congregations may offer (Newman and Hugo 2006).

**Discussion**

The increase in the propensity of Australian women to not progress from a first birth to a second (or beyond) during the 1990s is undoubtedly linked to the interconnected array of changes in fertility and family formation which has been dubbed 'The Second Demographic Transition' (Lesthaeghe 1995, Van de Kaa 1997). This paper has found individual-level linkages between the likelihood of stopping childbearing at one child and the postponement of childbearing and marriage, having a pre-marital first birth, the dissolution of unions, with prolonged female participation in education and the labour force, and with the importance placed on religion. During the course of the 'Second Demographic Transition' marriage and first births are increasingly postponed and cohabitation, premarital childbearing, and marital dissolution become more prevalent. A rising status of women and a secularisation of society tend to accompany these demographic changes (Lesthaeghe 1995). Thus, whilst neither Lesthaeghe (1995) nor Van de Kaa (1997) explicitly mention it, for Australia at least, a reduced progression from a first to a second child should therefore be seen as part-and-parcel of this transition. It seems plausible that the growing reproductive individualism associated with the 'Second Demographic Transition' may also have encouraged more couples to deviate from the two-child norm by choosing to have only one child, and the emergence of more

effective contraception (the 'Second Contraceptive Revolution') has facilitated it (Lesthaeghe 1995, Van De Kaa 1997).

The cumulative effect over generations of parental investment in their children 'getting ahead' (as Marjoribanks 2002 terms it) may also help to explain the increased propensity of Australian women not to progress to a second child. Only children gain higher than average educational achievements, income and wealth. This reflects the time, energy and material resources which their parents can give to them being undiluted by the competing demands of siblings (Parr 2007). According to a survey by Weston *et al.* (2004) roughly a fifth of both male and female Australians aged 20 to 39 cited 'whether having another child would reduce the opportunities available to other children' as an important factor influencing their having children. This paper has also shown that more educated women and women who were educated in non-Catholic non-government schools are less likely to progress from a first to a second child. Thus some of the increase over time in the propensity of Australian women to stop at one child may be linked to past increases in the retention of females in education and to past increases in the percentage of female school students who attend non-government non-Catholic schools, a trend which partly reflects past increases in parents willingness to invest in the human capital development of their female children (ABS 2003).

Immigration too has contributed to the increased propensity of Australian women to stop childbearing at one child. The rate of immigration to Australia is one of the highest in the World. This study shows that migrants generally have a higher propensity to stop childbearing at one child than the Australia-born do. Moreover, the four largest country of birth groups of new migrants to Australia during the 1990s (New Zealand, the

United Kingdom, Hong Kong, and China) all have relatively high propensities to stop childbearing at one child (DIMA 2001, DIMA 2006). The Former Yugoslavia and a number of South-East Asian countries were also significant sources of migrants to Australia in the 1990s which also have relatively high propensities to stop at one child. Of the various migrant groups, the very high propensity of East Asia-born women (especially the China-born) not to progress to a second birth is particularly interesting. Further research is needed to establish whether this reflects one child is a preferred family size for this group even in Australia, whether it is a legacy of sterilisation in China, or whether it is explicable by other circumstances. The relatively high prevalence of one child families among migrants should facilitate the upward social mobility of the second generation (Parr 2007).

One of the more unique and interesting findings of this study is correlation between the importance a woman places on leisure activities and her propensity to progress from a first to a second birth. Time spent on (non-child) recreational time is reduced with the arrival of additional children, so it is quite logical that those women who would value this lost leisure time more are less likely to have additional children (Craig 2003, Craig and Bittman 2003, Craig 2005). Thus it may be that the growth in the range of available leisure activities may have been a factor which has contributed to the reduction in progression beyond a first birth in Australia.

Whilst the trend up until 2001 was of a reduction in the propensity of Australian women to progress from a first to a second birth, a subsequent continuation of this trend cannot be assumed. Changes to family-related benefits, including with effect from July 2004 the introduction and staged increase over time of the new universal, flat-rate

maternity benefit along with increases to family tax benefits, improvements in the availability of parental leave, and the apparent strengthening of a 'halo effect' associated with parenting are would logically tend to encourage childbearing. The introduction of the new maternity benefit, provided its effect is not cancelled out by the inflation of the cost of child care, may do more to raise progression beyond a first birth than it does on progression to a first birth, because it compares more favourably to the (lesser) additional costs of second and higher order children. The benefit may also replenish family financial resources at a time when the child care costs of existing children are stretching the family budget.

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**Appendix A**

The variables entered in the models are as follows:

*Early Lifecourse Variables*

1. The number of siblings the respondent grew up with.

2. Whether or not the respondent grew up as an only child.

3 .Father's occupation when respondent was aged 14 (the occupations were coded according to the Australian Bureau of Statistics' Australian Standard Classification of Occupations (ASCO) (ABS 1997).

4. Mother's occupation when respondent was 14 (based on ASCO).

5. Whether her father was absent from home or deceased when the respondent was 14.

6. Whether her mother was absent from home or deceased when the respondent was 14.

7. The type of schooling the respondent had (government, Catholic, other non-government).

8. Highest level of schooling (Year 12 or overseas equivalent, Year 11 or overseas equivalent or less).

9. Whether a Bachelor's degree or above was completed.

10. The country of birth of the respondent (overseas countries of birth were grouped along linguistic and geographical lines and in accordance with similarity of levels for the response variable).

12. Whether the respondent was of Aboriginal or Torres Strait Islander descent.

13. The respondent's age as measured on 30$^{th}$ June 2001.

*First Birth Variables*

19. Age at first birth.

20. Age at first birth squared.

21. Whether the respondent was unmarried at the time of the first birth.

*Time of Survey Variables*

14. The respondent's current occupation (based on ASCO).

15. The respondent's current employment status (full-time, part-time, unemployed, not in labour force).

16. The respondent's gross annual income from all sources over previous financial year.

17. The respondent's gross income from wages and salaries.

18. The percentage of the respondent's working life spent in unemployed but looking for work.

19. The percentage of the respondent's working life spent not in the labour force.

22. The respondent's current relationship status (legally married, unmarried cohabitation, separated, divorced or widowed, never married and not currently cohabiting).

23. Whether the respondent has legally married twice.

24. Whether the respondent has legally married three or more times.

25. Whether the respondent has a long-term health condition.

26. The importance the respondent places on the home in which she lives.

27. The importance the respondent places on her employment opportunities.

28. The importance the respondent places on her financial situation.

29. The importance the respondent places on her involvement in the local community.

30. The importance the respondent places on her health.

31. The importance the respondent places on leisure activities.

32. The importance the respondent places on religion.

**Table 1**: **Women who have One Child as a Percentage of Women with One or More Children for 40-54 Year Olds by Explanatory Variables: Living in Australia (HILDA) Survey Wave 1**

| | Percentage With One Child (%) | N |
|---|---|---|
| *Birthplace* | | |
| Australia | 11.1 | 1285 |
| Main English-Speaking Overseas Countries | 18.0 | 200 |
| N, W or E Europe | 25.0 | 96 |
| S Europe | 12.8 | 39 |
| Middle East or North Africa | 9.5 | 21 |
| East Asia | 50.0 | 22 |
| S or SE Asia | 18.5 | 92 |
| Other Overseas | 13.0 | 54 |
| *Aboriginal or Torres Strait Islander* | | |
| Yes | 8.3 | 36 |
| No | 13.7 | 1773 |
| *Highest Level of Education* | | |
| Bachelor's of Higher Degree | 18.2 | 280 |
| Year 12 | 17.1 | 420 |
| Year 11 or less | 10.9 | 1107 |
| *Type of School Attended* | | |
| Government | 13.5 | 1395 |
| Catholic Non-government | 10.5 | 276 |
| Other Non-Government and Other | 20.7 | 135 |
| *Number of Siblings* | | |
| 0 | 21.7 | 69 |
| 1 | 13.7 | 306 |
| 2 | 14.4 | 418 |
| 3 | 13.2 | 370 |
| 4 | 14.6 | 206 |
| 5+ | 10.8 | 437 |
| *Father's Occupation at Age 14* | | |
| Managerial or Administrative | 9.8 | 318 |
| Professional | 13.7 | 190 |
| Associate Professionals | 16.2 | 198 |
| Tradespersons and Related | 14.7 | 415 |
| Advanced Clerical and Service | 13.3 | 5 |
| Intermediate Clerical, Sales and Service | 13.7 | 131 |
| Intermediate Transport and Production | 13.2 | 257 |
| Elementary Clerical, Sales and Service | 12.1 | 58 |
| Labourers and Related | 11.4 | 158 |
| No Occupation | 23.2 | 69 |
| *Mother's Occupation at Age 14* | | |
| Managerial or Administrative | 6.5 | 62 |
| Professional | 18.9 | 169 |
| Associate Professionals | 17.8 | 101 |
| Tradespersons and Related | 12.9 | 116 |
| Advanced Clerical and Service | 11.5 | 104 |
| Intermediate Clerical, Sales and Service | 16.8 | 197 |
| Intermediate Transport and Production | 9.1 | 66 |
| Elementary Clerical, Sales and Service | 11.8 | 228 |
| Labourers and Related | 11.7 | 247 |

| | | |
|---|---|---|
| No Occupation | 13.3 | 519 |
| *Intactness of Family of Origin at Age 14* | | |
| Father Absent or Deceased | 20.2 | 89 |
| Father Not Absent or Deceased | 13.2 | 1720 |
| Mother Absent or Deceased | 10.0 | 30 |
| Mother Not Absent or Deceased | 13.6 | 1779 |
| *Never Married at Time of First Birth* | | |
| Yes | 17.3 | 335 |
| No | 12.7 | 1474 |
| *Age at First Birth*[a] | | |
| Below 20 | 5.5 | 291.5 |
| 20-24 | 8.2 | 616 |
| 25-29 | 12.6 | 538 |
| 30-34 | 19.7 | 241 |
| 35-39 | 46.8 | 102.5 |
| 40+ | 90.9 | 11 |
| *Current Relationship Status* | | |
| Never Married and Not Cohabiting | 46.3 | 41 |
| Cohabiting | 19.4 | 134 |
| Divorced, Separated, or Widowed | 17.9 | 336 |
| Legally Married | 10.8 | 1298 |
| *Percentage of Working Life Not in the Labour Force* | | |
| 10 or below | 16.0 | 600 |
| 10-20 | 16.0 | 374 |
| 20-30 | 10.4 | 249 |
| 30-50 | 9.6 | 384 |
| Over 50 | 5.9 | 444 |
| *Current Occupation* | | |
| Managerial or Administrative | 18.1 | 83 |
| Professional | 13.3 | 324 |
| Associate Professionals | 13.0 | 169 |
| Tradespersons and Related | 28.6 | 35 |
| Advanced Clerical and Service | 12.6 | 95 |
| Intermediate Clerical, Sales and Service | 14.6 | 308 |
| Intermediate Transport and Production | 15.6 | 45 |
| Elementary Clerical, Sales and Service | 8.9 | 123 |
| Labourers and Related | 11.1 | 98 |
| *Current Employment Status* | | |
| Working Full-time | 15.2 | 645 |
| Working Part-time | 12.3 | 635 |
| Unemployed | 18.7 | 64 |
| Not in Labour Force | 12.3 | 465 |
| *Has a Long-Term Health Condition* | | |
| Yes | 13.3 | 320 |
| No | 14.7 | 14.7 |
| *Total* | 13.5 | 1809 |

a: Age at first birth was computed by subtracting the age in years of the eldest child from age in years of the respondent. The unrecorded residual months of age were assumed to follow uniform distributions.

**Table 2: Final Selected Logistic Regression Model of Effects of Early Lifecourse Variables on Whether a Woman Did Not Progress From Having One Child to Having Two or More Children: Living in Australia (HILDA) Wave 1**

| Variable | Coefficient | Standard Error |
|---|---|---|
| *Birthplace* | | |
| Main English-speaking Overseas Countries | 0.49* | 0.20 |
| Northern, Western or Eastern Europe | 0.91*** | 0.25 |
| East Asia | 1.87*** | 0.45 |
| Other | 0.00 | |
| *Highest Level of Schooling* | | |
| Year 12 | 0.44*** | 0.15 |
| Year 11 or below | 0.00 | |
| *Type of Schooling* | | |
| Non Government Non Catholic | 0.59* | 0.24 |
| Government or Catholic | 0.00 | |
| *Father's Occupation* | | |
| Managerial or Administrative | -0.50* | 0.21 |
| Other or None | 0.00 | |
| *Father Absent or Deceased* | 0.50+ | 0.28 |
| *Constant* | -2.21 | 0.11 |

*** $p \leq 0.001$ , ** $p \leq 0.01$ , * $p \leq 0.05$, + $p \leq 0.10$

**Table 3: Final Selected Logistic Regression Model of Effects of Early Lifecourse Variables and Circumstances of the First Birth on Whether a Woman Did Not Progress From Having One Child to Having Two or More Children: Living in Australia (HILDA) Wave 1**

| Variable | Coefficient | Standard Error |
|---|---|---|
| *Birthplace* | | |
| Main English-speaking Overseas Countries | 0.47* | 0.22 |
| Northern, Western or Eastern Europe | 1.01*** | 0.28 |
| East Asia | 2.18*** | 0.46 |
| Other | 0.00 | |
| *Father's Occupation* | | |
| Managerial or Administrative | -0.50* | 0.23 |
| Other or None | 0.00 | |
| *Father Absent or Deceased* | 0.56+ | 0.30 |
| *Age at First Birth Squared* | 0.003*** | 0.00 |
| *Never Married at First Birth* | 1.02*** | 0.19 |
| *Constant* | -4.50*** | 0.24 |

*** $p \leq 0.001$ , ** $p \leq 0.01$ , * $p \leq 0.05$, + $p \leq 0.10$

**Table 4: Final Selected Logistic Regression Model of Effects of Early Lifecourse, Circumstances of the First Birth, and Later Lifecourse Variables on Whether a Woman Did Not Progress From Having One Child to Having Two or More Children: Living in Australia (HILDA) Wave 1**

| Variable | Coefficient | Standard Error |
|---|---|---|
| *Birthplace* | | |
| Northern, Western or Eastern Europe | 0.99** | 0.32 |
| East Asia | 2.58*** | 0.57 |
| Other | 0.00 | |
| *Type of Schooling* | | |
| Non Government Non Catholic | 0.66* | 0.31 |
| Government or Catholic | 0.00 | |
| *Father's Occupation* | | |
| Managerial or Administrative | -0.52* | 0.26 |
| Professional | -0.53+ | 0.29 |
| Other or None | 0.00 | |
| *Mother's Occupation* | | |
| Intermediate Transport or Production | -0.91+ | 0.53 |
| Labourers and Related | -0.46+ | 0.27 |
| Other or None | 0.00 | |
| *Age at First Birth Squared* | 0.03*** | 0.000 |
| *Never Married at Time of First Birth* | 0.73** | 0.24 |
| *Current Marital Status* | | |
| Never Married and Not Cohabiting | 1.70*** | 0.49 |
| Divorced, Separated, or Widowed | 0.72*** | 0.21 |
| Currently Married or Cohabiting | 0.00 | |
| *Percentage of Working Life Not in Labour Force* | -0.02*** | 0.004 |
| *Current Occupation* | | |
| Professional | -0.57* | 0.24 |
| Other or None | 0.00 | |
| *Has a Long-Term Health Condition* | 0.56* | 0.24 |
| *Importance Placed on Leisure* | 0.11* | 0.05 |
| *Importance Placed on Religion* | -0.05* | 0.03 |
| *Constant* | -4.32*** | 0.56 |

*** $p \leq 0.001$ , ** $p \leq 0.01$ , * $p \leq 0.05$, + $p \leq 0.10$

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