

Fertility is important to the long term future of Australia. Many children born in 2009 are likely to be alive at the end of the century. During that time they will experience the full range of government services and they will contribute to the future productivity and welfare of Australia.

Natural increase, births minus deaths, accounted for 40% of Victoria's and Australia's population growth in 2007–08. Births outnumbered deaths by 37,000 in Victoria and 145,000 in Australia. In 2007–08 births were at an all time high in both Australia and Victoria, only superseded by the period 1969–72.

Many people have been surprised by the high number of births and rising fertility rates of the last seven or eight years. Back at the turn of the millenium fertility rates in Australia were declining, similar to almost every country in the world. In developed countries below level replacement fertility rates were contributing to the ageing of the population and long term labour and skills shortages. Partly because of this, international migration levels were increasing.

Understanding the dynamics of fertility and applying that understanding to population projections is a fundamental requirement of planning. The following paper updates previous reports on fertility published by the Department of Planning and Community Development's Spatial Analysis and Research branch.

The purpose

The purpose of this paper is to provide the Victorian perspective on fertility. It begins with the many definitions and terms used in fertility analysis. It looks at the reversal of the recent long term decline in total fertility rates, including the different characteristics of Melbourne and regional Victoria. In doing so the report examines the impacts of the timing (tempo) and quantum of births. It explores the questions:

- Are recent rises in fertility due to a catch up effect or other influences?
- Are women in Melbourne/regional Victoria having children earlier or later?
- Have (or will) increases in total fertility rates translate into increases in completed fertility rates?

If readers are interested in exploring further aspects of the recent fertility analysis and debate the following sources are recommended:

- "Recent Trends in Australian Fertility" Productivity Commission
<http://www.pc.gov.au/research/staffworkingpaper/fertility-trends>
- "Births Australia, 2007" Australian Bureau of Statistics, October 2008
www.abs.com.au

Measuring

Measures of fertility include: total fertility rates, birth counts, crude birth rates, age specific fertility rates, number of children ever born.

Fertility data is derived from a variety of sources: Australian Bureau of Statistics (ABS) births registration, quarterly statistics and census data; Maternal and Child Health data sets and the Perinatal Data Collection Unit based on hospital data.

This paper uses ABS sources. Some of the concepts and terms relevant to the following information are:

Registered births - count births registered in a particular year and the following concepts derive from it:

Crude birth rate - relates to the number of live births registered in any given year per 1,000 estimated resident population for that year.

Year of occurrence - is another example of births' data, however this is always subject to revision as births may be registered in subsequent years.

Age specific fertility rates - represents the number of births registered each year according to the age of the mother, per 1,000 of the female population of that age.

Total fertility rate - is the sum of age specific fertility rates. It represents the number of children a woman would bear in her lifetime if she experienced current age-specific fertility rates at each age of her productive life. Five year age-cohorts used are between 15 and 49 years.

Completed fertility rate - represents the average number of births an age group of women have had. It is calculated by summing the age-specific birthrates experienced by that age group of women over their reproductive life.

Each fertility measure has its own value and use. For example, the completed fertility rate 'matters most to the long-run analysis of size and age structure of the population' while 'the number of babies being born in total or per capita at a given time...is most relevant to immediate provision of services, such as maternity services and child care' (Productivity Commission 2008, p2).

For modelling future population change, as undertaken in *Victoria in Future*, age specific fertility rates and total fertility rates are particularly important.

Are fertility trends changing – has fertility decline reversed?

This section will use the following measures:

- Births data
- Total fertility rates

The total number of babies has increased

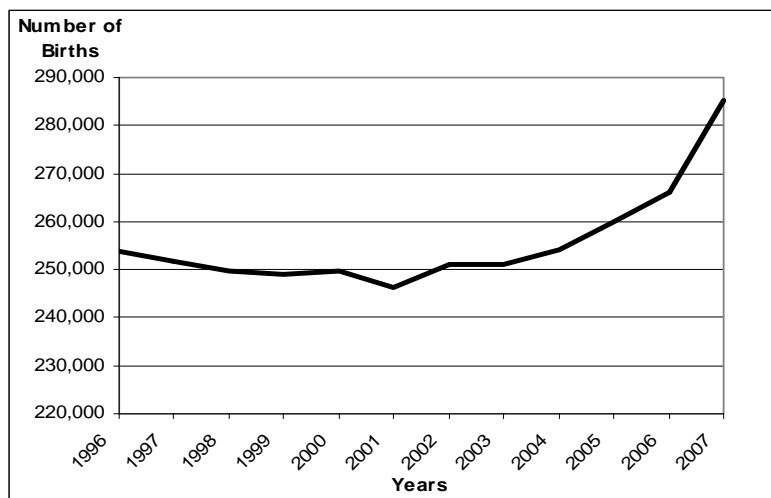
For the past three decades the big fertility issue in Australia and Victoria has been fertility decline. In 2000 the Department of Infrastructure reported that Victoria and Australia were undergoing a fertility decline, with total fertility rates at an historical low. This was in line with many other developed countries (Department of Infrastructure 2000).

Since 2005 there has been growing interest in the "baby boom" or "baby bounce". 2007 marks the fourth year of consecutive rises in the number of births in Victoria. The number of births in Victoria has risen from 61,058 births in 2001 to 70,313 registered births in 2007. Births in Australia have followed a similar pattern (see Figures 1 and 2).

In 2007 the number of registered births in Victoria increased by 7.8 per cent on the 2006 figure of 65,236 – this is the highest since 1972, when there were 71,713 births registered. The Victorian 2007 figure accounts for 25 per cent of all births in Australia, consistent with Victoria’s proportion of the Australian population. In 2007 there were 285,213 births registered in Australia, which represents the highest number of births ever registered in Australia.

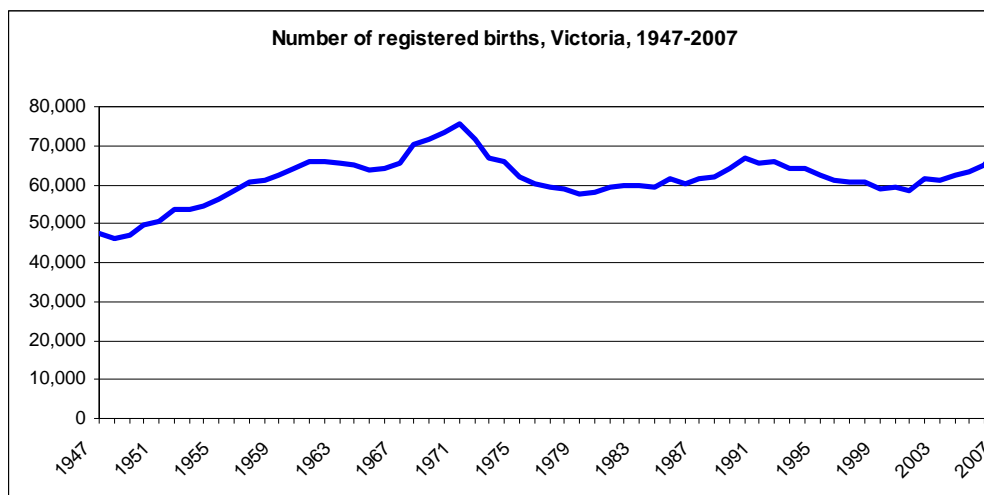
A turnaround is evident and ‘there is little question that over the last few years the number of babies born has risen significantly in Australia’ (Productivity Commission 2008, p8). Part of the increase is attributable to Australia and Victoria’s growing populations. Furthermore there is a structural element – many women born in the peak birth years of the early 1970s have reached childbearing age.

Figure 1: Total births, Australia, 1996–2007



Source: *Births Australia 3301.0*

Figure 2: Total births, Victoria, 1947–2007



Source: *Births Australia 3301.0; Demography Victoria 3311*

Total births in regional Victoria and Melbourne

Melbourne and regional Victoria have significant differences in fertility. Although Melbourne has a lower fertility rate than regional Victoria, it has 75 per cent of Victoria's births (while having only 72 per cent of the population). The reason for this is the different age structures of the population – Melbourne has 78 per cent of Victoria's population aged between 18 and 34.

In recent years Melbourne has been gaining the majority of the increases in births. However in 2007 regional Victoria recorded an additional 1,100 births between 2006–07. This is significant when compared with the very little change in numbers for the previous seven years (see Figure 3).

Figure 3: Births, Victoria, Melbourne and Regional Victoria

	Melbourne	Regional Victoria	Victoria	
	Births	Births	Births	Total Fertility Rate
2000	43,699	15,447	59,171	1.65
2001	43,452	15,147	58,626	1.62
2002	45,421	16,024	61,478	1.64
2003	45,303	15,715	61,058	1.65
2004	46,583	15,808	62,417	1.68
2005	47,539	15,694	63,287	1.68
2006	49,178	15,992	65,236	1.71
2007	53,112	17,123	70,235	1.78

Source: *Births Australia 3301.0*

The Barwon Statistical Division (SD), with its major city Geelong, recorded 3,345 births, the highest number for a SD in regional Victoria. There were increases in every statistical division in Victoria between 2006 and 2007.

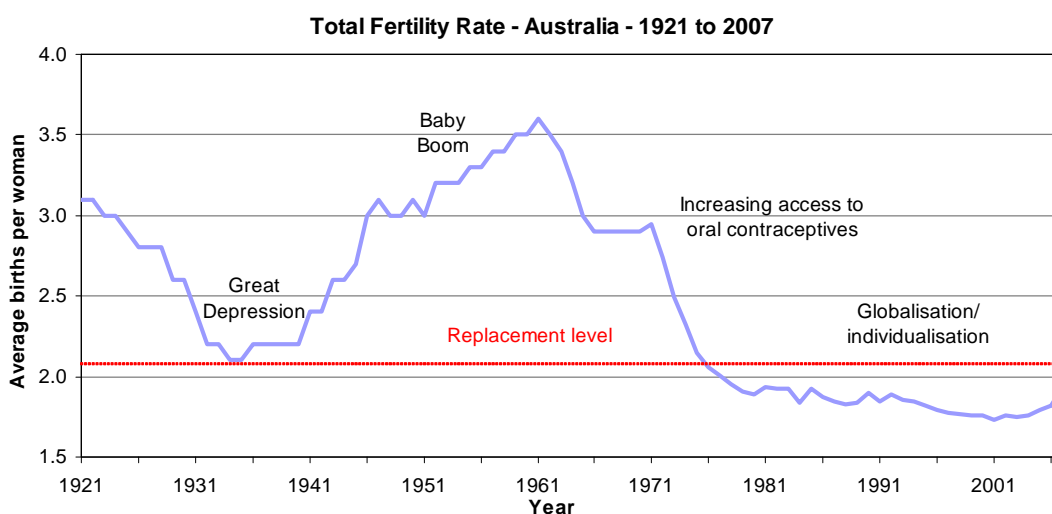
Total fertility rates

The total fertility rate (TFR) has been increasing as well. In 2007 TFRs rose considerably, complementing a trend that began in Victoria in 2001. Victoria's TFR in 2007 was 1.87, compared with 1.93 for Australia. This is Victoria's highest rate since 1978.

In 1921, soon after World War 1 there was a slight peak in Australia's TFR, corresponding with post war life and prosperity. Rates then began falling with the onset of the great depression to a then historic low of 2.1 in 1934 and 1935. Total births also fell at this time before rising again, together with the TFR, through the late 1930s and 1940s.

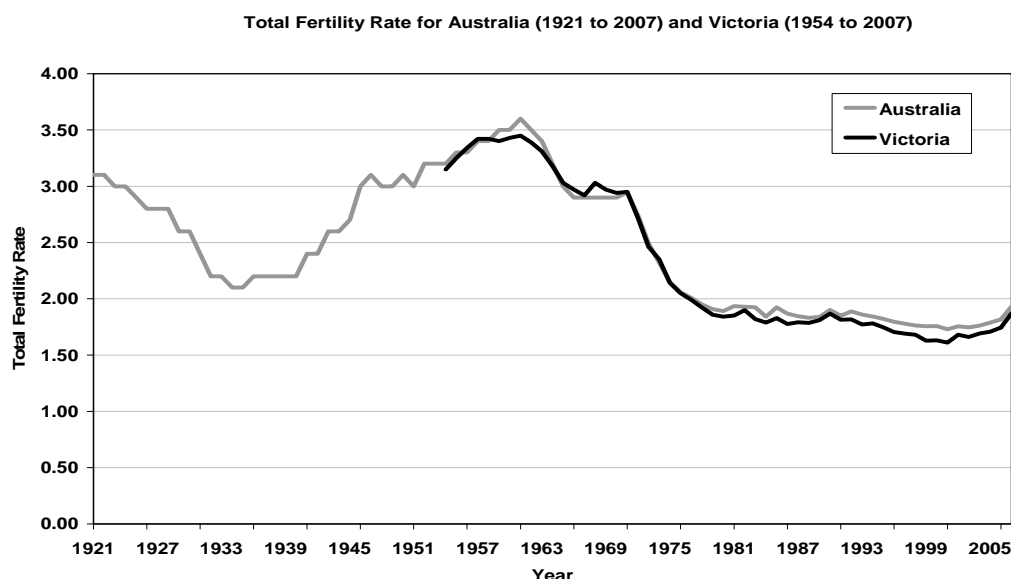
The marriage and “baby boom” effect then brought about rising fertility rates and numbers born. The large numbers of people born between the end of the Second World War (1945) and the late 1960s are known as the “baby boomers” and they arrived during a time of post-war construction and rising prosperity. Fertility continued to rise reaching a peak in 1961 of 3.5 in Victoria and 3.6 in Australia. Total births, however, continued to rise through to 1971 in Australia and Victoria. Young couples with three or four children were common during this period. 1971 was the peak year for births and after this date there was a general decline in TFRs and births as oral contraception became more affordable and socially accepted.

Figure 4: Total fertility rate, Australia, 1921–2007



Source: *Demography Victoria 1998-2004, Births Australia 3301.0, 2006*

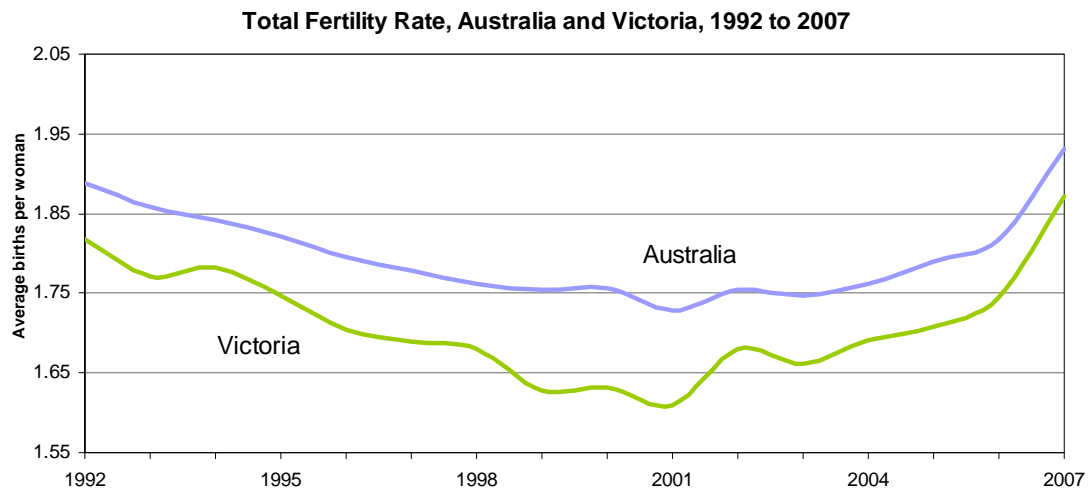
Figure 5: Total fertility rate in Australia (1921–2007) and Victoria (1954–2007)



Source: *Births Australia 1995,98,2006, ABS cat. No. 3301.0; Demography Victoria 1975 and 1976, 1992-2004 ABS cat. 3311.2 and 3102.2*

Figure 6 below shows total fertility rates for Victoria and Australia from 1992–2007. Both have followed a similar pattern. Rates generally fell between 1993 and 2001 with a rise from 2001 to 2002. Rates in Victoria rose from 1.61 to 1.68 between 2001 and 2002 and in Australia from 1.73 to 1.76. Since then fertility has steadily risen to 1.87 in Victoria and 1.93 in Australia by 2007. While these rises are small when compared with changes in the long term, there is clearly a significant upward trend at work which requires a modification of assumptions used in population projections.

Figure 6: Total fertility rate, Victoria, 1992–2007

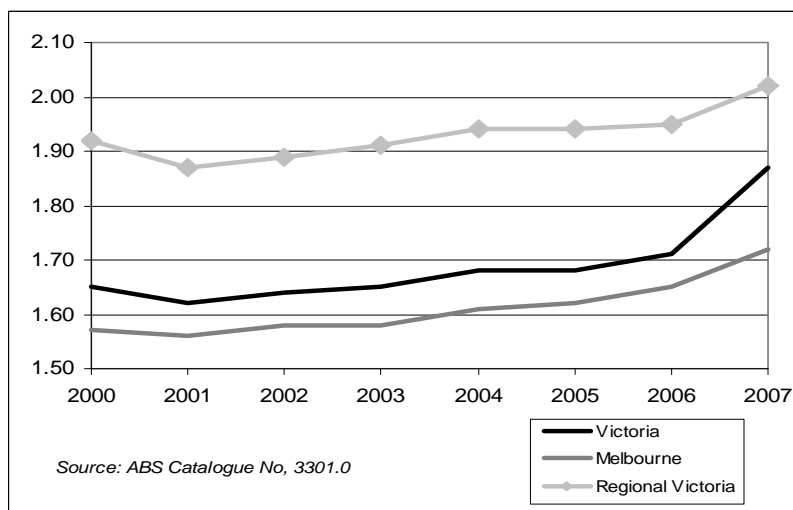


Source: *Demography Victoria 1998-2004, Births Australia 3301.0, 2006*

Total fertility rates in regional Victoria and Melbourne

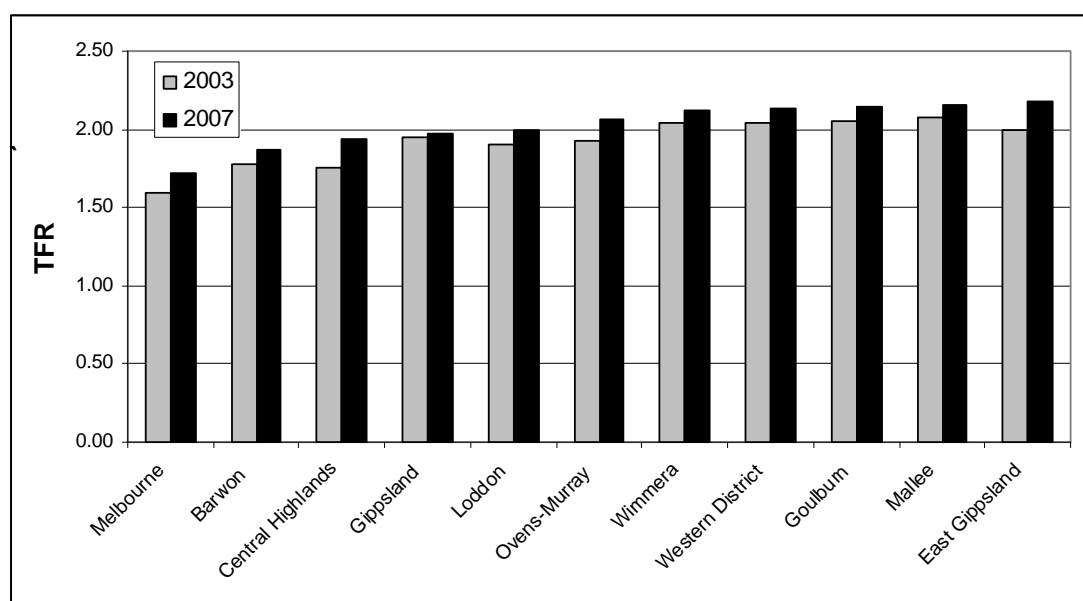
Australia's state capitals generally have lower fertility rates than regional areas. Figure 7 indicates that this is still the case in 2007. Regional Victoria has a TFR of 2.02 and Melbourne 1.72. The gap between the two however has narrowed slightly since 2000.

Figure 7: Total fertility rates, Victoria, Melbourne and regional Victoria, 2000–07



Within Victoria TFRs vary considerably (see Figure 8). The Melbourne Statistical division has the lowest rate 1.72, compared with regional Victoria's 2.02. Moderate rates between 1.8 and 2.0 occurred in the Barwon, Central Highlands, Gippsland and Loddon statistical divisions. Fertility rates 2.0 and over occurred in Ovens-Murray, Wimmera, Western District and Goulburn statistical divisions. The East Gippsland and Mallee statistical divisions recorded the highest TFRs of 2.18 and 2.16 respectively. Generally the more urban the region the lower is its fertility rate. Melbourne has the lowest rate, followed by the four regions that contain regional Victoria's four largest urban centres – Geelong, Ballarat, Bendigo and the Latrobe Valley.

Figure 8: Total fertility rates, Victoria, Statistical Divisions, 2003 and 2007



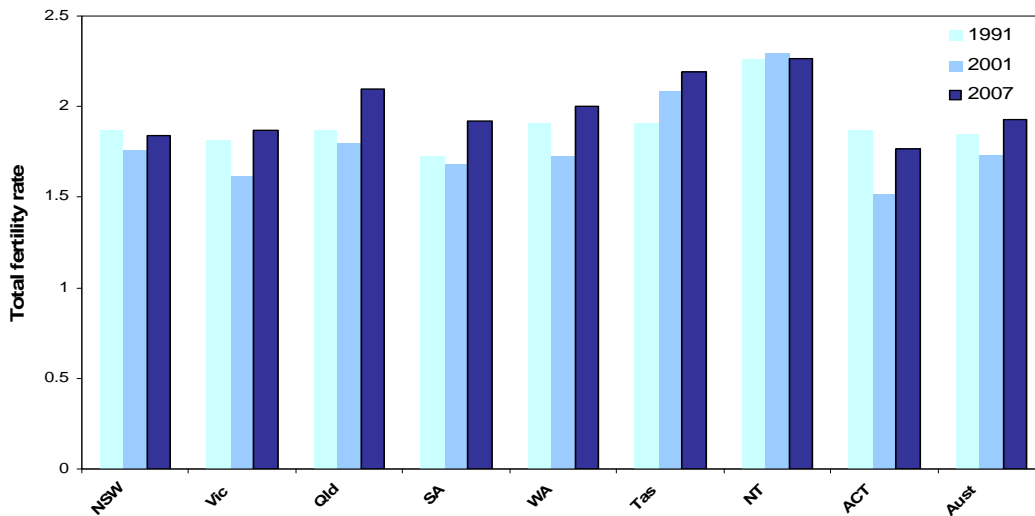
Explanations for these broad differences can be linked to a range of issues. In Melbourne, access to education and employment opportunities mean that many women study and delay partnership forming and children. Conversely, early childbearing in regional areas is associated with fewer educational and career opportunities.

Internal migration plays a role as many women born in regional Victoria move to Melbourne on leaving school and pursue tertiary education and job opportunities. In turn this may mean they delay having a family and do so in Melbourne. The women that do not move are more likely to have children at a younger age and consequently have larger families. Proximity to regional cities and/or a capital city with good educational facilities however could potentially lower regional Victoria's fertility rates as women's behaviour mirrors that of urban women. Barwon statistical division is a good illustration of this point. It has the lowest total fertility rates in regional Victoria and is influenced by Geelong with its wide range of tertiary education and employment opportunities.

Has the recent rise in fertility occurred in other States?

Total fertility rates between 2001 and 2007 have risen in every state except the Northern Territory. So the trend is reflected in both the national and state totals (see Figure 9).

Figure 9: Total fertility rates, Australian States, 2001 and 2006



Source: ABS cat. No.3301.0 2006

The tempo and quantum of births – are recent rises in fertility due to a catch up effect?

This section will use the following data:

- Age-specific birth rates
- Children ever born data

Gradually over the years since 1971 (Victoria's peak year for births) the following trends have been observed:

- Women are having children later in life.
- Women are having on average fewer children over their lifetime (increased childlessness and a decrease in large families).

This represents 'both tempo and quantum changes in fertility' (Lesthaeghe and Willems 1999, p226).

The previous section indicated that the total fertility rate and total number of births have increased. This section will examine what are the mechanics of this rise and what part does the tempo and quantum of births play?

Tempo effect

Tempo relates to changes in the timing, rather than the ultimate number, of lifetime births. Tempo includes postponement, anticipation and recuperation.

- **Postponement** - delaying births that a woman would otherwise have had earlier. If completed fertility rates are held constant, this shifts the distribution of age-specific rates to older ages.
- **Anticipation** - bringing forward babies that women were going to have later. If completed fertility rates are held constant, this shifts the distribution of age-specific birth rates to younger ages.
- **Recuperation** - older women catching up on their previously postponed births. (Productivity Commission 2008, p8).

Quantum effect

The quantum effect is when there is an increase in the number of lifetime births, that is completed fertility rates, regardless of timing (as compared with tempo effects that shift the timing, but not necessarily the average number, of births).

The Productivity Commission's Working Paper "Recent Trends in Australian Fertility" (2008) provides an excellent description of the tempo and quantum effect in fertility and is repeated below to facilitate a good understanding:

'When postponement occurs the measured fertility falls during the initial transition to a new set of ages at which women have babies. This is because young women are having fewer children, while the fertility rates of older women have not yet risen.

Over time, this pattern changes. The fertility rate of young women falls by less and finally stabilises, while that of older women increases to a new higher level ('recuperation') to achieve their desired lifetime fertility rate. In this part of the transition, the TFR will rise back to its long-run level.

This effect can be demonstrated by imagining an extreme case where all women aged 25 years decide to delay childbearing by five years, but still intend (and are able) to maintain the same completed fertility. The TFR would fall for five years and then rise again with the recuperation of the formerly postponed fertility. The reported increase in TFR at the end of the five year period will then give the spurious appearance of a positive quantum effect when, in fact, it is merely a symptom of past delay.

In reality, the transition has been much more gradual than this example, occurring slowly over the last 35 years. Nevertheless, at some point the trend towards delayed childbearing must subside. This natural limit depends on future behaviour and changes in fertility technology' (Productivity Report 2008, p20).

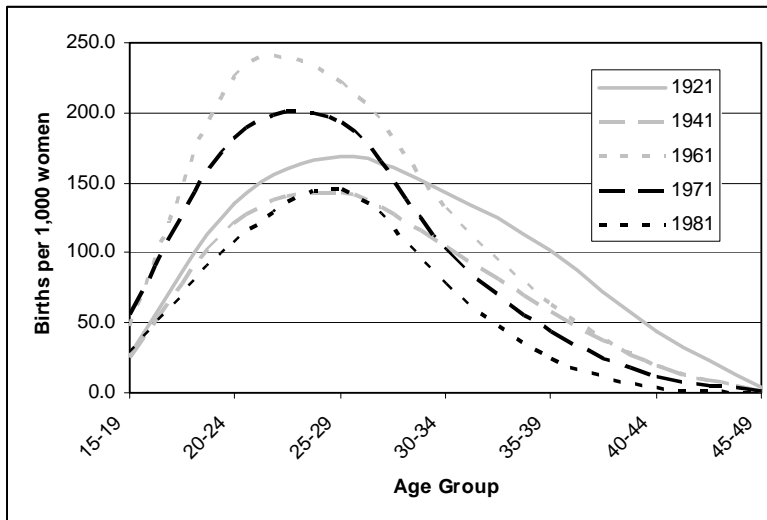
Historical context

Prior to analysing the current situation it is worth revisiting historical age specific fertility rates to see the patterns of quantum and tempo effects over the twentieth century in Australia (see Figure 10).

In 1921, there was a trend to older childbearing which reflected delayed childbearing due to World War One. By 1941 there were fewer births per 1000 women at every age group when compared with 1921, this was due to the impact of the Second World War. The age-specific pattern in 1961 changed again with women in their twenties dominating the large number of births – forming the baby boomer generation.

This links to the marriage boom of the late fifties and sixties where people generally married in their early twenties. In Victoria, 1971 was the peak year for births (75,394 births) with a decline in numbers after this. By 1981 there was a dramatic fall in rates for all age groups, as well as a shift in the peak child bearing age from the early to the late twenties.

Figure 10: Age-specific fertility rates Australia, selected years 1921 – 1981



Source: ABS cats. 3102.2, 3305.2, 3311.2

More recently...

Are the recent observed increases in births and TFRs due to women having children at older ages – a catch up effect?

The trend between 1991 and 2007 illustrates the issue of postponement and recuperation in Victoria (see Figure 11):

Postponement - From 1991 to 1997 there was a noticeable drop in the quantum of births in the under 30s and a slight trend to later childbearing with increased rates in the over thirties. In Figure 11 below, the line shifting to the right in the 30 plus categories indicates older childbearing between 1997 and 2007.

Recuperation - From 2001 to 2007 there was little change in the rates for the under 30s but significant increases in rates for 30 years and over.

Looking in more detail, *between 2006 and 2007* women aged 30-34 years recorded the highest age specific fertility rate in 2007, of 133.4 births per 1,000 women (see Figure 12). Age specific fertility rates for women aged 35-39 increased from 69.7 births per 1,000 women in 2006 to 75.6 in 2007. Therefore there does appear to be some “catch up” effect occurring.

In addition there were actually increases in births per 1,000 in all age groups – but particularly in the 25-39 year olds. This is still not regarded as a quantum effect unless it translates into increases in lifetime births (measured by children ever born data).

The median age of mothers in Victoria increased from 30.2 in 1998 to 31.6 years in 2007, which is the highest of all states and territories. This figure is slightly lower than last year’s median age, which had been rising for a decade, possibly reflecting a stabilisation of the trend to older childbearing. Of significance is that ‘at some point the trend towards delayed childbearing must subside. This natural limit depends on future behaviour and changes in fertility technology’ (Productivity Report 2008, p20).

Figure 11: Age-specific fertility rates, Victoria, 1991, 97, 2001, 07

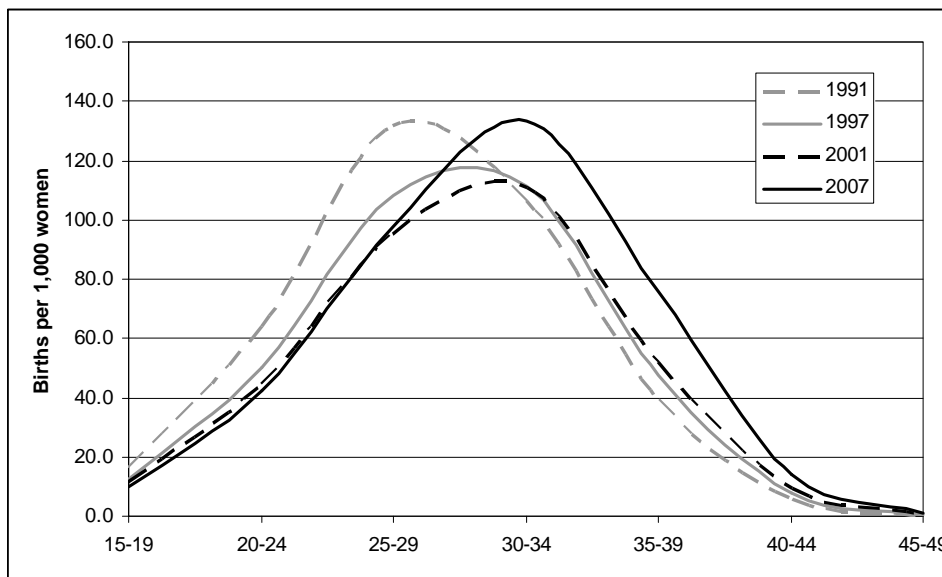
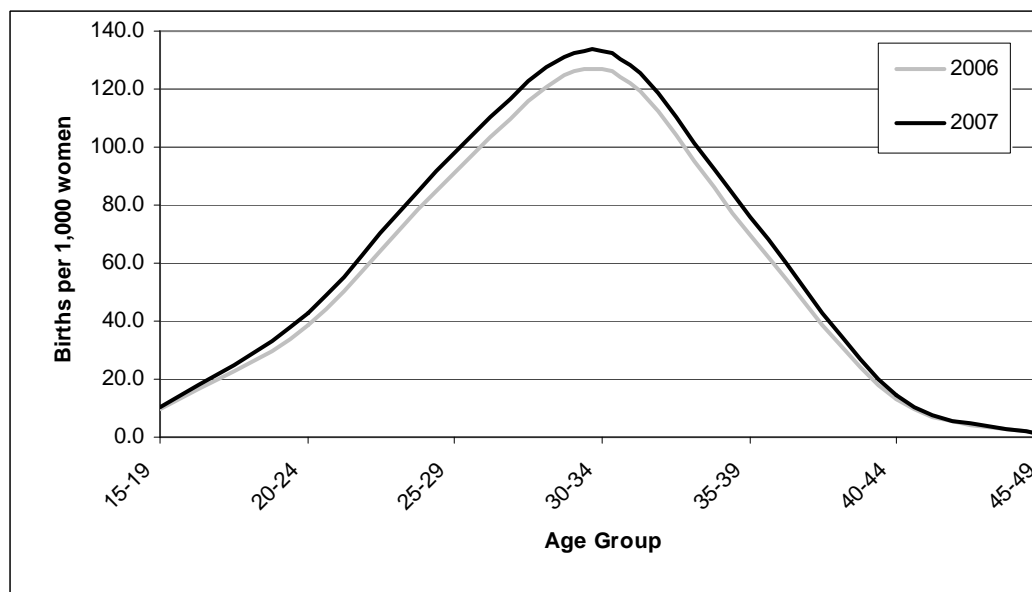


Figure 12: Age-specific fertility rates, Victoria, 2006 and 2007



The concepts of postponement and recuperation are further illustrated below by single year of age data by regions.

Are women in Melbourne and Regional Victoria having children earlier or later?

What differences are seen spatially in Victoria? Is the “catch up” effect spatially based?

Age specific rates vary between Melbourne Statistical Division and regional Victoria (see Figure 13). In *Melbourne*, between 2001 and 2007 there have been decreases in fertility rates for the 15-29 year age groups and increases in fertility rates in every

age group above this, even in the 40-44 year age group. The highest rates for both 2001 and 2007 were found in the 30-34 year age group.

In *regional Victoria* the highest rates in 2001 were in the 25-29 year age group while this shifted to the 30-34 year age group in 2007. In 2007 regional Victoria exhibited a much younger childbearing pattern having higher rates than Melbourne up to the 30-34 year age group. Rates then become similar in both areas for the 30-34 year age group. After that Melbourne takes over with higher rates than regional Victoria in all age groups 35-39 years on. This may be reflective of the trend to older childbearing being further advanced in the city due to factors referred to on page 7; however it is also happening in regional Victoria.

Figure 13: Age Specific fertility rates, by 5 year age groups, Melbourne and Regional Victoria, 2001 and 2007

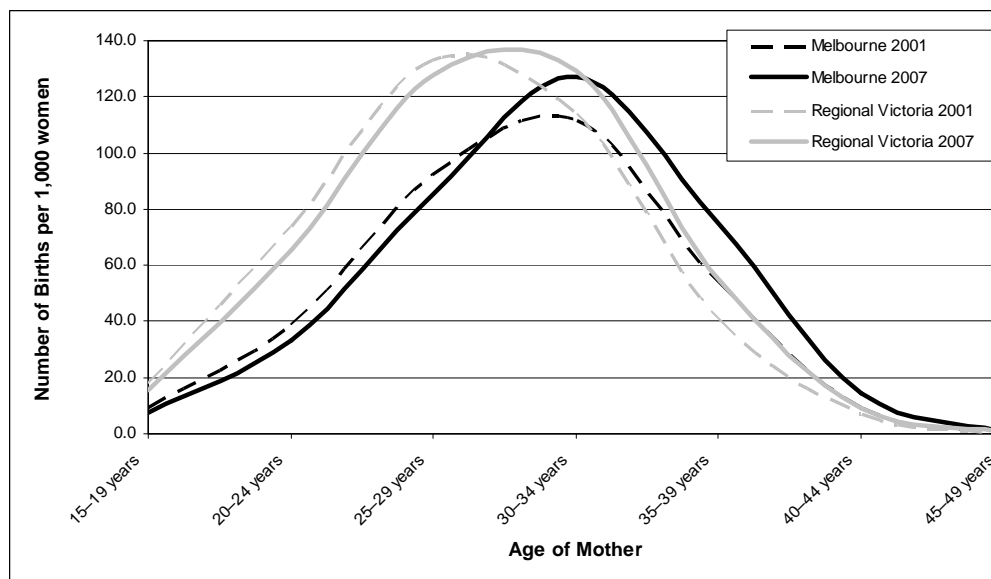
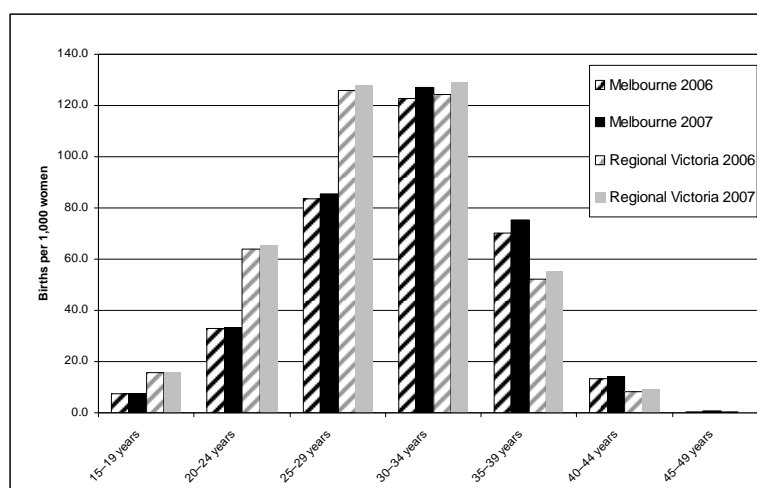


Figure 14 shows another interesting trend – the change in age specific fertility rates between 2006 and 2007. With the exception of the 15-19 year age group there were increased rates in all age groups for both regions.

Figure 14: Age Specific fertility rates, by 5 year age groups, Melbourne and Regional Victoria, 2006 and 2007



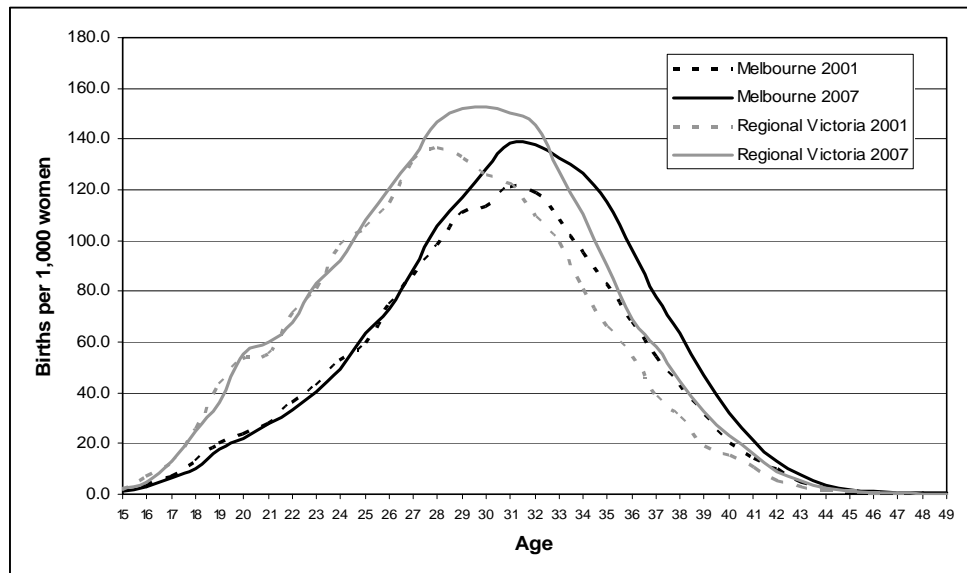
Single year of age data

The single year of age data reiterates the trends outlined previously.

In Melbourne, age 31 was the peak age for childbearing in 2001 and 2007. As evident earlier the rates per 1,000 women from age 27 onwards are consistently higher in 2007 than 2001. Rates below 27 years have not changed significantly, which when combined with the gains led to increases in the total fertility rate (which is derived from the age specific rates) between 2001 and 2007.

In regional Victoria age 30 was the peak age. Similarly for regional Victoria between 2001 and 2007 the under 28 ages showed minor change, while there were increase in births per 1,000 women for age groups 28 and over. Regional Victoria has higher rates per 1,000 women up to the age of 32 then Melbourne takes over with the higher rates. This again reflects the regional/urban fertility difference relating to educational, social and employment opportunities in urban areas causing delays in births.

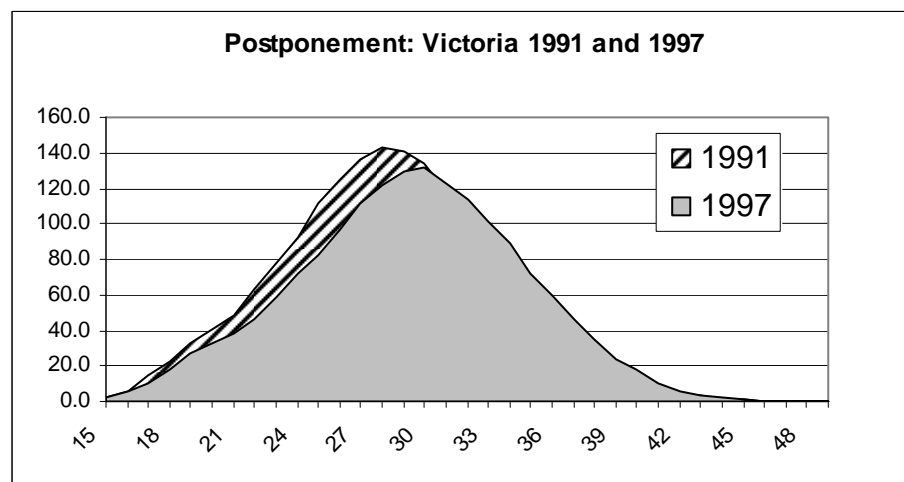
Figure 15: Age Specific Fertility rates by single year of age, Melbourne and Regional Victoria, 2001 and 2007

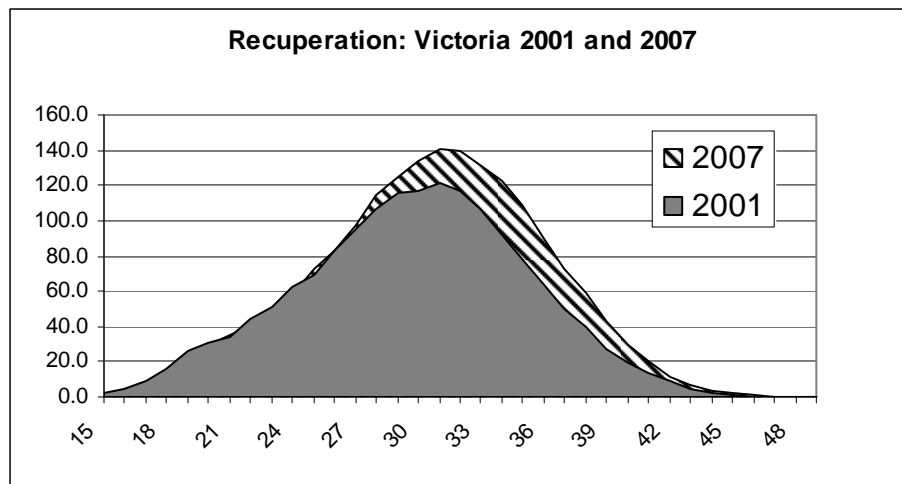


Source: Customised ABS data

Figure 16 (below) is another way of understanding the tempo effects – postponement and recuperation using single year of age data.

Figure 16: Age Specific Fertility rates by single year of age, Victoria, selected years.





Source: Customised ABS data

What other explanations are being given for the recent rise in fertility?

Apart from the tempo issue explained in the previous section, what other reasons are being given for the rise in rates this decade?

Influences on fertility changes are complex and varied and they include the following: the economic climate, education and work for women, family policy, cost of children, partnership/family formation, medical technologies, social/values environment, migration and individual decision making.

Three of these influences will be discussed in this section.

Economic Climate

The rise and fall in fertility rates in the twentieth century is often linked to economic ups and downs. For example rates falling with the 1930s depression and rising with post war prosperity (refer back to Figure 4). 'There is strong historical evidence that Australia's economic circumstances have played a major role in influencing fertility rates since well before modern methods of birth control were introduced' (The Australian Institute of Family Studies 2004, p5).

What will happen in the current economic climate with the international financial crisis? It is possible 'reflecting the effects of the slowdown in global growth, there may be a short-lived "relapse" in fertility in 2008 and 2009 as occurred during other slowdowns' (Productivity Commission 2008, pxiii).

Will the uncertain economic climate lead to another cycle of delays and catch up over the next ten years?

Policy

The current Baby Bonus (which replaced the Maternity Allowance and Baby Bonus introduced on July 2004) is a payment of \$5,185 following the birth of a child.

'The possibility that the presently large 30-34 year old population, which has previously delayed its childbearing and may now be completing that childbearing while the baby bonus is on offer, cannot be rejected. But whether the members of this cohort will end up having more children than they previously intended cannot be answered yet.' (Jackson 2006, p11).

Immigration

In Australia, is the rise in births due to more overseas immigrants? Do immigrants have more babies?

This is particularly relevant to Melbourne due to the high number of immigrants. Migrant intake has been particularly high in recent years reflecting strong economic times. Genevieve Heard studies this question for Australia by analysing the 2006 census children ever born by country of birth data. Heard concentrates on completed fertility, for women aged 40-44. The mean number of children for Australian born women was 2.08 compared with 1.99 for Overseas born main English-speaking countries and 1.94 for other Overseas countries.

Heard highlights two interesting facts. Firstly, that the findings are 'contrary to the popular perception that immigrants, particularly from non-English speaking backgrounds, have lots of children' (Heard 2007, p7). Secondly, that this is different from the experience of other Western nations, such as the United Kingdom and the United States where immigrant women have higher fertility rates.

The point is made that immigrants contribute 'to the overall number of women having babies – and therefore the number of babies – in Australia'. This is also due to the fact that the majority of migrants are in the child bearing age groups. This may have some impact on the number of babies being born in the future if migrant intake fluctuates responding to the world economic crisis. Melbourne data needs to be analysed to see if it is similar to Australian data.

Will recent increases in total fertility rates translate into increases in completed fertility?

The limitations of the age specific rates/total fertility rates

The above discussion has been focussed on births and age specific rates and the resulting TFRs. Here are some comments from demographers explaining what they see the limitations of the TFR to be:

- 'The annual TFR is important, regardless of (indeed because of) delayed or accelerated childbearing, because the number of babies born in any given year matters to the age structure of the population. However completed cohort fertility provides a better measure of generational replacement' (Heard 2007 p1).
- 'When births are delayed, the TFR falls; when births are brought forward in time, the TFR rises – even when women do not change the number of births that they have across their lifetimes'. It is of more interest to see how many children women have over their lifetime (McDonald 2005, p4).
- 'The TFR is a rather blunt measure' and is 'highly sensitive to changes in the age at which women have children'. So while the rate can fluctuate – eventually the completed fertility rate 'may show that there is no change in the actual number of births per woman' (Jackson 2006, p6).

In view of the above it is important to analyse completed fertility.

Quantum issues: will the rate be restored to what it would have been if women had not postponed in the first place?

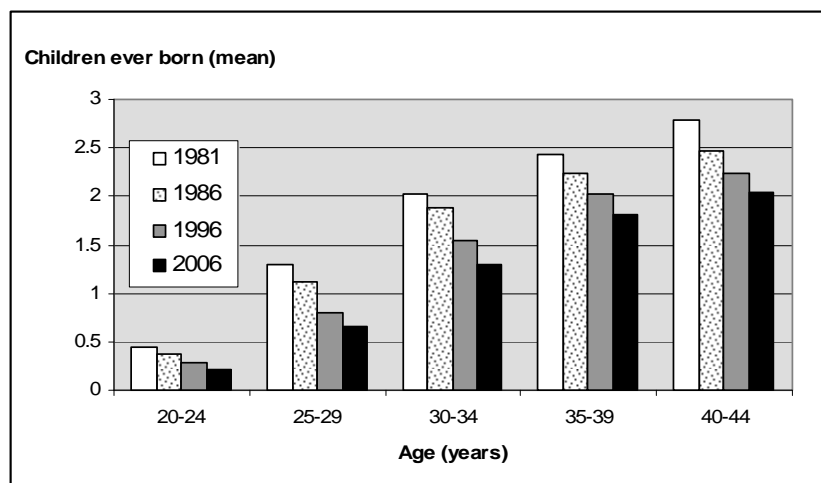
Completed fertility can be measured through children ever born data from the census based on the question "For each female, how many babies has she ever had?" McDonald considers that children ever born is a superior measure to the TFR but this measure is not given priority in Australia as it is only included in the census every 10 years (McDonald 2005).

It was included in 2006 and 'this once in a decade opportunity to study actual cohort fertility is eagerly awaited by Australian demographers' (Heard 2007, p2).

Number of children ever born data indicates the average number of births an age group of women have had. For younger women this may represent incomplete fertility. It is particularly valuable for measuring and analysing completed fertility for women who have finished their reproductive life. Completed fertility is represented by the 40-44 year age group within this data. 'When presented as part of a time series, the data allow an assessment of change in the average number of children born to successive cohorts of women over successive years' (Heard 2007, p2).

Heard analyses children ever born data for Australia (see Figure 17). In 2006 women in the 40-44 year age group had 2.05 children on average compared with 2.23 in 1996, 2.26 in 1986 and 2.78 in 1981. So contrary to TFR data this data shows that 'completed fertility continued its long term decline over the decade to 2006' (Heard 2007, p3).

Figure 17: Children ever born, by female age groups 20-44 years, Australia, 2006



Source: Heard, 2007 – ABS customised data

Of significance is that births from late 2006 and the record numbers in 2007 are not included in this data. 2016 will be the next time children ever born data will be collected – this data will be required to see whether the current increases in fertility in the 35-40 year age group, translate into completed fertility.

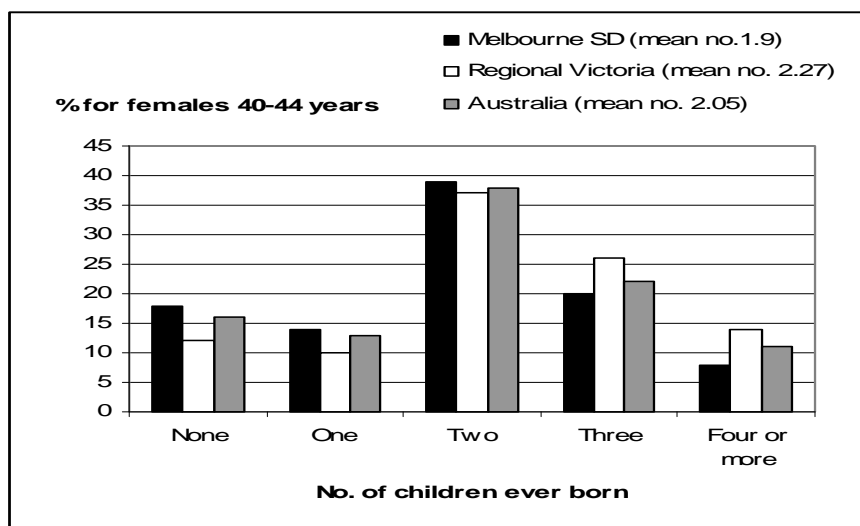
Will recuperation “the catch up” effect contribute to higher fertility levels in the long run? There are indications it will not. In the long run delayed child bearing tends to decrease overall fertility levels.

Reasons why delayed childbearing may lead to fewer babies being born in the long run include:

- ability to have children declining with age
- decreases in the likelihood of having 3 or more children.
- relationships from earlier possible childbearing years splitting up and new child bearing relationships not being established
- decreasing population growth in the long term, partly due to lengthening the time until the next generation reaches child bearing age (Merlo 1995, p.144).

The second point above can be illustrated by Figure 18. It shows completed fertility for Victoria, regional Victoria and Melbourne. The completed fertility characteristics of Melbourne women, with later childbearing show a higher proportion with no children or one child and fewer with three or more children. Conversely earlier childbearing in regional Victoria contributes to the likelihood of having larger families, and higher total fertility rates.

Figure 18: Females, 40-44 years, children ever born, Melbourne SD, Regional Victoria, Australia, 2006



Source: Heard, 2007 – ABS

Conclusion

Fertility patterns have changed in Victoria. Following three decades of fertility decline, fluctuating rates at higher levels around the turn of the millenium have given way to four years of rises in births and the total fertility rate. The “catch up” effect is a significant player in this trend as is the structural element that many women born in the peak birth years of the late sixties/early seventies have reached childbearing age. And whether or not recent increases in births and fertility rates translate into increased completed fertility, the fact that numbers of births are reaching 1970s levels, with over 70,000 births in 2007, is significant.

The increases are significant for projecting future populations and the impact of changes in fertility outlined in this paper can be illustrated by the following population

pyramids for Victoria (see Figures 19a and 19b). Figure 19b shows the increase in all age groups by 2041. Compared with the last 30 years (displayed in figure 19a) the big change is the age groups in which the greatest increases are observed.

Figure 19a: Population change 1971-2006

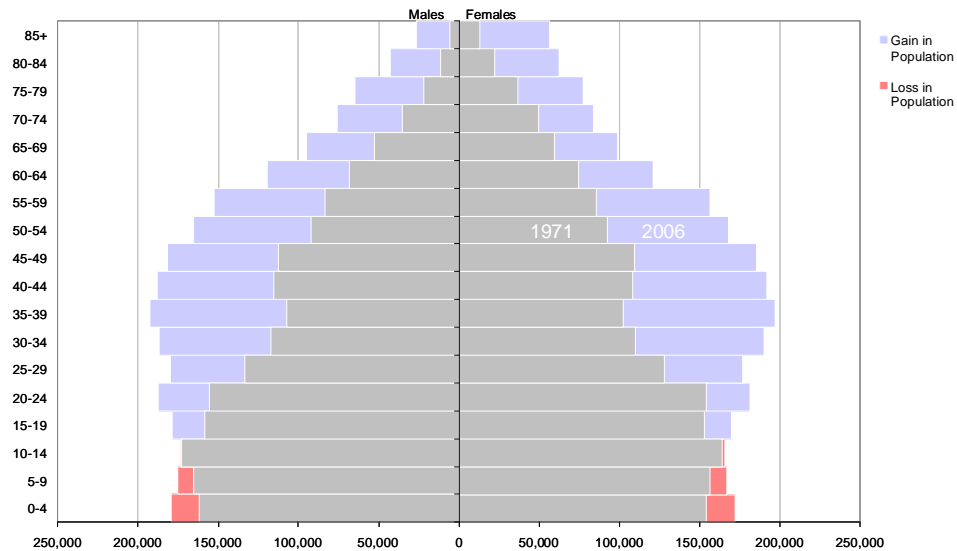
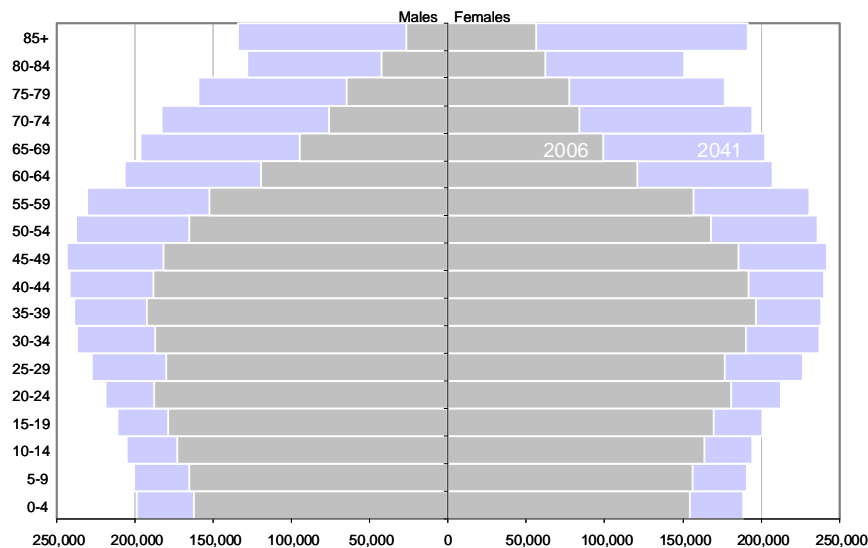


Figure 19b: Population change 2006 - 2041



Rising fertility rates see projected increases in the population aged under ten years. When these birth numbers start moving up the population pyramid to the child bearing age groups they will increase the cohort base from which children can be born. Conversely the ever diminishing number of births between 1970 and 2000 will impact on the cohort base from which babies can be born. Immigration however will also impact on the ultimate size of the child bearing cohort as projections rely on simple assumptions about levels of migration and about birth and death rates.

The population pyramids above show how increases in fertility impact on populations projections which in turn create management, servicing, environmental and workforce implications in the short and long term for Victoria.

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