1999 3301.0

Australian Bureau of Statistics

BIRTHS

AUSTRALIA

EMBARGO: 11:30AM (CANBERRA TIME) THURS 16 NOV 2000

CONTENTS

- For further information about these and related statistics, contact the National Information Service on 1300 135 070, or Katrina Phelan on Canberra 02 6252 6573.

NOTES

ABOUT THIS PUBLICATION

This publication brings together statistics and indicators for births in Australia.

DATA IN THIS PUBLICATION

This publication uses birth registration data except where otherwise stated.

The 1999 population data used in the calculation of the rates for 1999 is based on the preliminary estimated resident population at 30 June 1999.

REVISIONS

The level of childlessness of women published in earlier issues of this publication have been revised.

ROUNDING

In commentary based on the statistics in this publication, it is recommended that the relevant statistics be rounded. All data are affected by errors in reporting and processing. Birth registration data are also affected by delays in registration. These data have had small values randomised to protect confidentiality. No reliance should be placed on statistics with small values.

SYMBOLS AND OTHER USAGES

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
ARIA	Accessibility/Remoteness Index of Australia
ASFR	Age-specific fertility rate
ERP	Estimated resident population
IMR	Infant mortality rate
n.a.	not available
n.p	not published
NHRMC	National Health and Medical Research Council
NNS	National nutrition survey
NPSU	National Perinatal Statistics Unit
p	preliminary
RDI	Recommended daily intake
SACC	Standard Australian classification of countries
SD	Statistical Division
SEIFA	Socio-Economic Indexes For Areas
SLA	Statistical Local Area
TFR	total fertility rate
. .	not applicable
—	nil or rounded to zero (see Explanatory Notes, paragraph 3)

Dennis Trewin
Australian Statistician

LIST OF TABLES AND GRAPHS

CHAPTER 4—BIRTHS

CHAPTER 5—CONFINEMENTS

CHAPTER 6—FERTILITY DIFFERENTIALS

CHAPTER 7—ABORIGINAL AND TORRES STRAIT ISLANDER BIRTHS

CHAPTER 8—PROJECTED FERTILITY

EXPLANATORY NOTES

APPENDIX—DIFFERENCE BETWEEN COLLECTIONS

CHAPTER 1 MAIN FEATURES

FERTILITY CONTINUES TO DECLINE

- There were 248,900 births registered in Australia during 1999, 0.3% less than in 1998 (see page 40).
- In 1999, Australia's total fertility rate was 1.75 babies per woman, slightly below the 1998 level of 1.76 (see page 20).
- Australian fertility remains higher than in Canada (1.5), Japan (1.4) and many European countries (for example Italy at 1.2) and lower than in the United States of America (2.0) and New Zealand (1.9) (see page 12).
- In 1999, women in the 30–34 years age group overtook the 25–29 year olds in experiencing the highest fertility rate, at 108.5 babies per 1,000 women (see page 20).
- Women aged 25–29 years had the second highest fertility rate at 108.1 babies per 1,000 women, followed by women aged 20–24 years (at 58.5) and women aged 35–39 years (at 47.0) (see page 20).
- On current rates, 26% of Australian women would remain childless at the end of their reproductive life (see page 38).
- Three quarters of total fertility is accounted by first and second births. The remaining (25%) of fertility is from third and higher births (see page 37).
- The total fertility rate in 1999 varied substantially across the States and Territories, from 1.62 babies per woman in Victoria to 2.15 for the Northern Territory (see page 55).

REGIONAL FERTILITY

- The total fertility rate of capital cities is much lower than that of their respective State/Territory balances (see page 62).
- Of all the capital cities, Melbourne had the lowest fertility rate (averaged over 1997, 1998 and 1999) followed by Adelaide, Canberra, Perth and Brisbane (see page 62).
- Fertility rates for the Accessibility/Remoteness Index of Australia (ARIA) regions show that the accessibility and remoteness of areas have a substantial impact on the fertility of women. Women in highly accessible areas have substantially lower fertility rate (1.76) than women in the remote areas (2.12 to 2.38), while women in the very remote areas have a fertility rate of 2.4 babies per woman (see page 65).

THE AGE OF PARENTS OF NEWBORN CHILDREN CONTINUES TO INCREASE

- In 1999, the median age of mothers was 29.7 years and the median age of fathers was 32.1 years (see page 46).
- During the twentieth century, the median age of mothers was lowest in 1971 and highest in 1999 (29.7 years) (see page 46).

COUNTRY OF BIRTH

- An estimated 83% of Australia-born women, who registered a birth in 1999, partnered with Australian-born men. Of the other 17%, the most common countries of birth of the father were the United Kingdom (5%), New Zealand (2%), Lebanon (1%) and Italy (1%) (see page 67).

TEENAGE FERTILITY

- The teenage fertility rate has been declining since the 1970s, so that teenagers are now less likely to be parents than they were thirty years ago (see page 28).
- The rate of childbearing among Australian teenagers peaked at 55.5 babies per 1,000 women in 1971, before falling to half its peak level (27.6) by 1980, and reaching its lowest ever rate of 18.1 babies per 1,000 women in 1999 (see page 28).

MULTIPLE BIRTHS

- During 1999, 245,100 mothers registered the birth of 248,900 live babies. There were 3,740 mothers who had a multiple birth (see page 46).

PROJECTED FERTILITY

- The low fertility assumption, used in the 1999 series of the ABS population projections, assumes that the declines in the total fertility rate over the 1993–98 period would continue and attain a level of 1.60 babies per woman in 2008, and would remain constant at this level over the projection period (see page 88).
- The high fertility assumption assumes that the total fertility rate would remain constant at 1.75 over the projection period (see page 88).
- The assumptions indicate that women aged 30 years and over would continue experiencing increasing fertility, raising the mean age at childbearing from 29.4 years in 1999 to 30.8 years in 2008 (see page 91).

INDIGENOUS

- In 1999, Indigenous women experienced higher levels of fertility at 2.1 babies per woman, compared to 1.75 for all women (see page 74).
- Indigenous women in the Northern Territory had the highest fertility rate of any State or Territory, at 2.5 babies per woman in 1999 (see page 75).
- Indigenous women have their babies at younger ages than all women. In 1999, the median age of Indigenous mothers was 24.4 years, compared to 29.7 years for all women (see page 76).
- The average birth weight of Indigenous babies in 1997 was 3,146g, 210g (6%) lower than the average for all babies (see page 78).

1.1 SUMMARY

	1989	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
FERTILITY							
Age-specific fertility rate							
15–19	20.6	20.7	20.4	20.1	19.5	18.5	18.1
20–24	78.4	69.7	67.1	65.2	62.4	60.2	58.5
25–29	135.4	125.8	121.7	117.1	113.9	111.4	108.1
30–34	96.1	105.0	106.0	105.7	106.7	107.4	108.5
35–39	32.6	41.1	42.3	43.7	45.0	45.7	47.0
40–44	5.0	6.7	7.2	7.5	7.5	8.0	8.5
45–49	0.2	0.3	0.3	0.3	0.3	0.3	0.3
Total fertility rate	1.842	1.846	1.825	1.797	1.776	1.758	1.745
Net reproduction rate	0.882	0.884	0.875	0.861	0.854	0.842	0.842
BIRTHS							
Total births	*250 853*	*258 051*	*256 190*	*253 834*	*251 842*	*249 616*	248 870
Males	128 510	132 625	131 432	130 572	129 179	128 016	127 357
Females	122 343	125 426	124 758	123 262	122 663	121 600	121 513
Proportion male (%)	51.2	51.4	51.3	51.4	51.3	51.3	51.2
Nuptial births (%)	79.8	74.4	73.4	72.6	71.9	71.3	70.8
Ex-nuptial births (%)	20.2	25.6	26.6	27.4	28.1	28.7	29.2
Paternity-not-acknowledged (%)	4.9	4.6	4.4	4.3	4.1	3.7	3.4
Crude birth rate	14.9	14.5	14.2	13.9	13.6	13.3	13.1
CONFINEMENTS							
Total confinements	*247 623*	*254 547*	*252 708*	*250 363*	*248 246*	*245 898*	245 108
Nuptial	197 302	189 160	185 378	181 549	178 279	175 162	173 263
First nuptial	81 357	77 166	75 606	73 873	73 356	72 276	72 828
Ex-nuptial	50 321	65 387	67 330	68 814	69 967	70 736	71 845
Paternity-acknowledged	38 204	53 742	56 071	57 911	59 793	61 616	63 402
Median age of mother							
Nuptial (years)	28.8	29.9	30.1	30.2	30.4	30.5	30.6
First nuptial (years)	27.3	28.5	28.6	28.7	29.0	29.1	29.3
Ex-nuptial (years)	23.9	24.6	24.9	25.1	25.4	25.7	25.9
Paternity-acknowledged (years)	24.5	24.9	25.2	25.3	25.6	25.9	26.1
All confinements (years)	28.2	29.0	29.1	29.2	29.4	29.5	29.7
Median age of father							
Nuptial (years)	31.2	32.3	32.5	32.7	32.8	32.9	33.0
Paternity-acknowledged (years)	27.2	27.6	27.8	27.9	28.1	28.4	28.5
Total where father's age is known (years)	30.8	31.6	31.7	31.9	32.0	32.0	32.1
Median duration of marriage							
Nuptial (years)	4.6	4.6	4.6	4.6	4.6	4.6	4.5
First nuptial (years)	2.4	2.5	2.5	2.5	2.6	2.6	2.6
Previous births of current relationship							
Paternity-acknowledged							
0	81 357	114 377	114 228	113 372	114 296	114 550	116 649
1	67 459	79 022	78 659	78 235	77 540	76 952	76 137
2	33 066	34 439	33 822	33 027	31 945	31 271	30 661
3	10 856	10 470	10 175	10 150	9 783	9 538	8 949
4	2 874	2 801	2 775	2 918	2 749	2 734	2 595
5 and over	1 687	1 793	1 790	1 758	1 759	1 733	1 674

1.2 STATE AND TERRITORY SUMMARY

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.
FERTILITY									
Age-specific fertility rate									
15–19	18.6	10.8	22.4	15.5	21.2	27.1	67.6	11.8	18.1
20–24	62.2	43.4	69.2	53.1	60.3	78.8	104.3	46.5	58.5
25–29	111.8	99.3	111.2	108.5	109.7	123.4	112.6	98.0	108.1
30–34	110.3	111.9	101.5	109.8	108.6	101.2	90.2	114.2	108.5
35–39	49.5	50.0	41.2	44.0	44.8	37.6	45.7	55.7	47.0
40–44	9.4	8.9	7.1	9.1	7.2	6.1	9.9	9.4	8.5
45–49	0.4	0.3	0.2	0.5	0.4	0.2	0.2	0.2	0.3
Total fertility rate	1.811	1.623	1.764	1.702	1.761	1.872	2.153	1.678	1.745
Net reproduction rate	0.875	0.782	0.848	0.823	0.855	0.912	1.031	0.829	0.842
BIRTHS									
Total births	*86 784*	*58 875*	*46 503*	*17 958*	*24 849*	*6 032*	*3 576*	*4 253*	*248 870*
Males	44 438	30 101	23 919	9 184	12 686	3 056	1 823	2 129	127 357
Females	42 346	28 774	22 584	8 774	12 163	2 976	1 753	2 124	121 513
Proportion male (%)	51.2	51.1	51.4	51.1	51.1	50.7	51.0	50.1	51.2
Indigenous births	3 052	521	2 974	640	1 558	339	1 419	. .	10 580
Nuptial births (%)	72.8	76.6	66.4	68.8	66.2	59.9	40.0	73.0	70.8
Ex-nuptial births (%)	27.2	23.4	33.6	31.2	33.8	40.1	60.0	27.0	29.2
Paternity-not-acknowledged (%)	3.3	1.6	4.6	3.2	3.6	4.5	19.7	4.0	3.4
Crude birth rate	13.5	12.5	13.2	12.0	13.4	12.8	18.5	13.7	13.1
CONFINEMENTS									
Total confinements	*85 494*	*57 891*	*45 874*	*17 675*	*24 485*	*5 931*	*3 531*	*4 188*	*245 108*
Nuptial	62 168	44 319	30 384	12 151	16 189	3 547	1 413	3 059	173 263
First nuptial	26 316	19 007	12 345	5 148	6 624	1 516	610	1 248	72 828
Ex-nuptial	23 326	13 572	15 490	5 524	8 296	2 384	2 118	1 129	71 845
Paternity-acknowledged	20 487	12 664	13 363	4 958	7 420	2 118	1 420	966	63 402
Median age of mother									
Nuptial (years)	30.5	31.0	30.2	30.9	30.6	30.2	30.2	30.9	30.6
First nuptial (years)	29.2	29.7	28.9	29.7	29.3	28.7	29.2	29.4	29.3
Ex-nuptial (years)	25.9	27.0	25.1	26.2	25.8	24.9	24.5	26.0	25.9
Paternity-acknowledged (years)	26.1	27.1	25.3	26.3	25.9	25.0	25.3	26.0	26.1
All confinements (years)	29.6	30.4	28.9	29.9	29.4	28.6	27.5	30.2	29.7
Median age of father									
Nuptial (years)	33.1	33.2	32.4	33.3	33.0	32.6	32.7	33.1	33.0
First nuptial (years)	31.5	31.7	30.9	31.6	31.5	30.9	31.4	31.5	31.5
Paternity-acknowledged (years)	28.6	29.4	27.7	28.9	28.2	27.7	27.9	28.7	28.5
Total where father's age is known (years)	32.3	32.6	31.3	32.3	31.8	31.1	30.7	32.4	32.1
Median duration of marriage									
Nuptial (years)	4.5	4.7	4.4	4.8	4.5	4.6	3.8	4.4	4.5
First nuptial (years)	2.5	2.7	2.5	2.8	2.5	2.5	2.2	2.4	2.6
Previous births of current relationship									
Paternity-acknowledged									
0	40 266	27 711	21 645	8 627	11 527	3 615	1 351	1 889	116 649
1	26 899	18 707	13 749	5 573	7 810	1 207	801	1 379	76 137
2	10 762	7 541	5 666	2 113	3 053	578	401	542	30 661
3	3 192	2 139	1 795	534	818	157	163	148	8 949
4	960	525	510	165	261	63	66	44	2 595
5 and over	576	360	382	97	140	45	51	23	1 674
Average births of the current relationship	1.8	1.8	1.8	1.7	1.8	1.6	1.9	1.8	1.8

CHAPTER 2 BIRTHS IN CONTEXT

INTRODUCTION

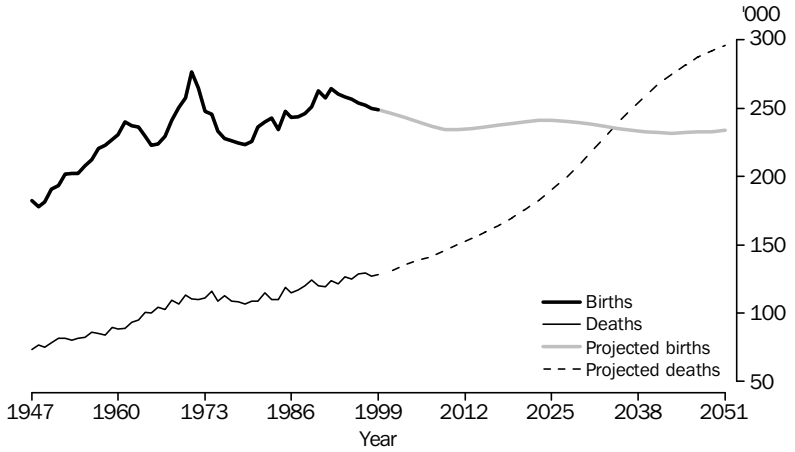
During 1999, there were 248,900 births registered in Australia from 245,100 mothers (confinements). There were 3,740 mothers who had a multiple birth. About 29% of births were ex-nuptial, mostly with paternity of the child acknowledged.

The number of births registered during 1999 was slightly less (0.3%) than the number registered during 1998 (249,600). The total fertility rate (TFR), that is the average number of babies that a woman could expect to give birth to in her reproductive life, for 1999 was 1.75 babies per woman. It was only marginally lower than the rate in 1998 (1.76) but much lower than the rates in 1989 (1.83) and 1979 (1.91).

BIRTHS AS A COMPONENT OF POPULATION GROWTH

Births form an important component of population growth (table 2.2). Each year, about a quarter of a million births occur. This is roughly twice the number of deaths, resulting in the natural increase of around 120,000 to 140,000 persons each year. From 1976, Australia has had below replacement level fertility, that is, the number of births required to replace a woman and her partner (currently 2.1). On current fertility rates, on average, women can expect to have 1.75 babies each throughout their life time, well below the 2.1 needed to replace her generation. Despite this, natural increase is still positive because of the relatively young age structure of the population. While women are not having very many babies each, there are enough women in child-bearing ages to keep the total number of births relatively high. Conversely, there are relatively few people in the older ages where death rates are high, which results in Australia having a relatively low number of deaths per year. As the population ages, the gap between the number of births and deaths will decrease, and assuming a TFR of 1.6 and net overseas migration of 90,000 persons annually, natural increase is projected to fall below zero around the 2030s.

2.1 ACTUAL AND PROJECTED(a) BIRTHS AND DEATHS



(a) *Projections Source: Population Projections, Australia* (Cat. no 3222.0) (series II; low fertility and medium net overseas migration).

BIRTHS AS A COMPONENT OF POPULATION GROWTH *continued*

While net overseas migration makes a significant contribution to population growth, natural increase has been the larger contributor in every year from 1950 except 1981, 1987, 1988 and 1989.

2.2 POPULATION CHANGE, Components

	Live births(a)	*Deaths(a)*	*Natural increase*	*Net overseas migration*	*Population at end of period*	*Population increase*	
Period(b)	'000	'000	'000	'000	'000	'000(c)	%
1979	223.1	106.6	116.6	68.6	14 602.5	171.7	1.2
1980	225.5	108.7	116.8	100.9	14 807.4	204.9	1.4
1981	235.8	109.0	126.8	123.1	15 054.1	246.7	1.7
1982	239.9	114.8	125.1	102.7	15 288.9	234.8	1.6
1983	242.6	110.1	132.5	55.0	15 483.5	194.6	1.3
1984	238.5	111.9	126.6	59.8	15 677.3	193.8	1.3
1985	242.9	116.8	126.1	89.3	15 900.6	223.3	1.4
1986	243.4	115.0	128.4	110.7	16 138.8	238.2	1.5
1987	244.0	117.3	126.6	136.1	16 394.6	255.9	1.6
1988	246.2	119.9	126.3	172.8	16 687.1	292.4	1.8
1989	250.9	124.2	126.6	129.5	16 936.7	249.6	1.5
1990	262.6	120.1	142.6	97.1	17 169.8	233.0	1.4
1991	259.1	119.7	139.4	81.7	17 387.0	217.3	1.3
1992	262.1	122.9	139.2	51.4	17 581.3	194.3	1.1
1993	258.6	120.8	137.8	34.8	17 760.0	178.7	1.0
1994	258.4	127.0	131.4	55.5	17 951.5	191.5	1.1
1995	254.9	125.1	129.8	106.9	18 196.1	244.6	1.4
1996	252.9	128.2	124.7	97.4	18 423.6	227.6	1.3
1997	251.1	128.8	122.3	72.4	18 618.3	194.7	1.1
1998	248.3	127.4	120.8	103.1	18 842.2	223.9	1.2
1999p	250.7	129.3	121.5	87.5	19 051.2	208.9	1.1

(a) Births and deaths are as recorded for population estimation purposes.

(b) Calendar years.

(c) Total growth will not necessarily equate to the difference between the population in consecutive periods. This difference is known as intercensal discrepancy. See Glossary for more information.

INTERNATIONAL FERTILITY

According to the United Nations, the world average TFR for 1995–2000 stands at 2.7 babies per woman, declining from the relatively constant five births per woman that existed until the late 1960s and early 1970s. However, TFRs for individual countries vary remarkably. There are many factors that can influence a country's fertility rate, such as differences in social and economic development and contraceptive prevalence. In general, developing countries have higher fertility rates while developed countries usually have lower fertility rates.

Australia's TFR for 1999, of 1.75 babies per woman, is one of the lowest in the world and well below the world's average. Compared to other developed counties, Australia's TFR is among the middle ranked nations. According to the United Nations estimated average TFR for 1995–2000, the lowest fertility in developed countries are European countries such as Italy with an estimated fertility rate of 1.2, Spain (1.2) and Germany (1.3), Hong Kong also has a TFR of 1.3.

INTERNATIONAL FERTILITY *continued*

Meanwhile, the Middle Eastern and African countries have the highest fertility rates with Yemen (7.6) and Somalia (7.3) some of the highest.

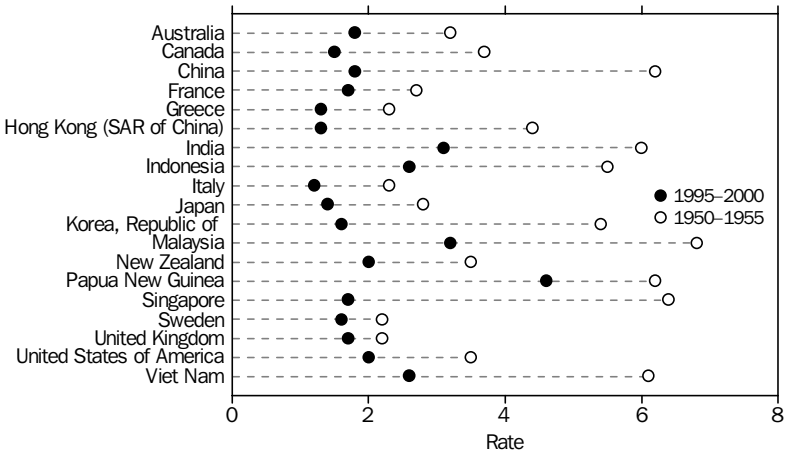
Over the past fifty years the TFR has declined for most countries. Of the selected countries in graph 2.3, the TFRs of the Asian countries have shown the largest declines. Singapore declined at an average annual rate of 2.9%, China by 2.7% and Viet Nam by 1.9% between 1950–1955 and 1995–2000.

From the 1950s to the late 1960s, fertility in some Asian countries was much higher than in Australia before declining sharply between the late 1960s and the late 1970s. Since then, fertility has continued to decline with China now similar to Australia, and Hong Kong falling lower.

Of the main English-speaking countries, since 1980–1985, the TFR has increased in the United States of America while it maintained its level in New Zealand. Prior to this, fertility rates for most developed countries were stable or slowly declining. Like Australia, the TFRs of most of these countries started declining from the 1960s.

The trend of Australian fertility over the past fifty years is similar to that of Canada and New Zealand. Canada's fertility fell more sharply than Australia's, reaching below replacement level some five years earlier. New Zealand was comparable to Australia until 1980–1985 with New Zealand's fertility marginally increasing and then declining and Australia's slowly declining.

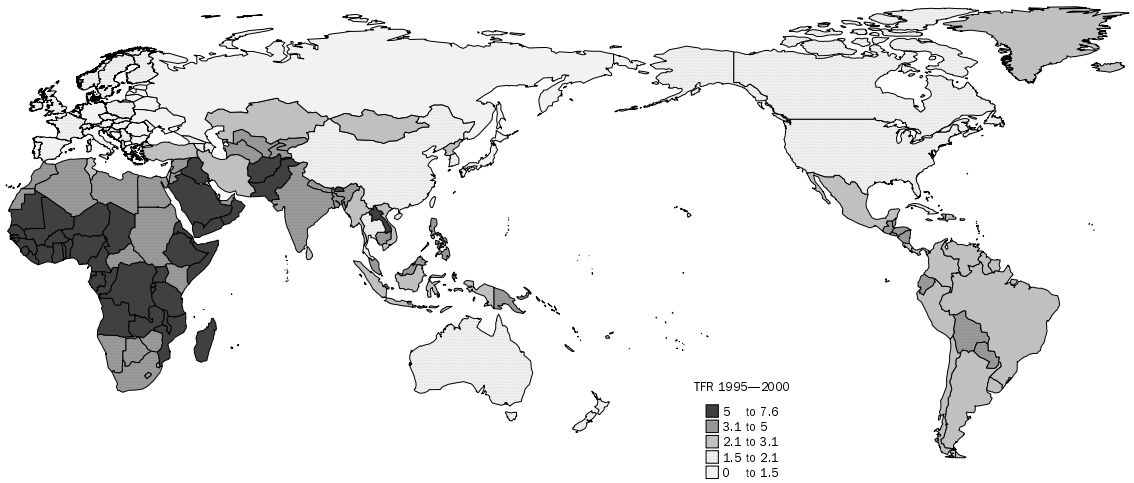
2.3 INTERNATIONAL TOTAL FERTILITY RATES, Selected Years



Source: United Nations, *World Population Prospects, 1998 Revision*.

The Population Reference Bureau has published world fertility rates projected for 1999. Of the main English-speaking countries, Canada (1.5) has the lowest fertility rates in 1999. Australia's TFR (1.7) is around the middle, equal with the United Kingdom, with New Zealand (1.9) and the United States of America (2.0) having the highest. The United States of America has a large Hispanic population and New Zealand has a large Maori population, whose higher fertility rates influence these countries' overall rate. For 1999, selected Asian countries, Korea (1.6), Singapore (1.6), Japan (1.4) and Hong Kong (1.1) are projected to have lower fertility rates than Australia. India's fertility rate at 3.4, Malaysia's at 3.2, and Indonesia's at 2.8 are projected to be higher than the Australian rate.

2.4 WORLD TOTAL FERTILITY RATES



HOW MANY BABIES AND MOTHERS SURVIVE?

Perinatal Deaths[1]

Although there were 249,600 live births registered in Australia during 1998, there were 2,090 perinatal deaths, consisting of 1,340 fetal deaths and 750 neonatal deaths (death of infants within the first 28 days of life) registered in that year (latest available data). Between 1989 and 1998 the perinatal death rate declined from 11.0 to 8.3 deaths per 1,000 live births and fetal deaths combined. Over this period the neonatal death rate fell (from 4.5 to 3.0 deaths per 1,000 live births) more than the fetal death rate (from 6.5 to 5.3 deaths per 1,000 live births and fetal deaths combined). The cause of death for over a quarter (26%) of perinatal deaths was not specified. Of all perinatal deaths, 23% died from 'Hypoxia, birth asphyxia and other respiratory conditions' and a further 20% died from 'Congenital anomalies'.

The neonatal death rate for multiple births was 12.6 per 1,000 live births. While this represents a 55% decrease on the rate of 28.3 recorded in 1989, it is still nearly five times higher than the 1998 rate for single births of 2.7.

Infant deaths

One indicator of the health of Australian babies is the infant mortality rate (IMR) which gives the number of deaths of babies aged less than one year per 1,000 live births which occurred in the same year. Declines in the IMR show that improvements in mortality have taken place.

The 1998 infant mortality rate (IMR), of 5.0 infant deaths per 1,000 live births, was for the second consecutive year, the lowest ever recorded. The 1998 IMR was 5.7% lower than the rate in 1997, and represented an average annual decline of 5.4% from 1988 when the IMR was 8.7 deaths per 1,000 live births.

In the last 100 years, Australia's infant mortality has declined by 96%. In 1898, 1 in 9 infants born did not survive till their first birthday (IMR of 116), however today, only 1 in 200 infants born will not survive their first year of life (IMR of 5.0).

---

[1] *Causes of Death*, Australia (Cat. no 3303.0).

Maternal mortality

Maternal mortality is determined by the number of women at risk of dying from childbirth and/or complications of pregnancy. The maternal mortality rate is the indicator used to measure improvements in ante-natal care and obstetrics and other pregnancy-related medical services. In 1997, the maternal mortality rate was 4.4 deaths per 100,000 women having a confinement during that year (based on the Midwives' Collection which includes confinements of live births and fetal deaths). Since 1991, the earliest data from the Midwives' Collection, the maternal mortality rate has declined (from 5.1 in 1991).

DIFFERENT BIRTHS DATA

Births as a component of population estimates

The Australian Bureau of Statistics (ABS) produces estimates of the population in each State and Territory every three months. These are produced by taking the population at an initial point and updating it by adding births, subtracting deaths and adding net migration. To meet the conflicting demands for accuracy and timeliness, this is done three times; preliminary estimates are produced six months after the end of the reference period, revised estimates are produced fifteen months after the financial year and final estimates are produced after the following census.

Births registered (period of registration basis)

Most analysis in this publication is based on the number of births which were registered in a given year, usually 1999. Because there can be a lag from when a baby is born to when the birth is registered, some of the births registered in 1999 occurred in earlier years. In a small number of cases it can be several decades between the occurrence of a birth and its registration.

Births registered (period of occurrence basis)

Using birth registration statistics, but compiling them on a year-of-occurrence basis gives an estimate of the number of births that occurred in a given year. However, as births that occur in a given year may be registered years later, statistics based on this concept are never finalised and are always subject to revision.

2.5 REGISTERED BIRTHS ON YEAR OF OCCURRENCE BASIS

	YEAR OF REGISTRATION							
Year of occurrence	*1992*	*1993*	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
1992 and earlier	264 151	25 595	2 818	2 389	2 012	2 054	1 485	1 089
1993	—	234 634	22 308	790	464	583	518	318
1994	—	—	232 925	23 970	900	763	529	575
1995	—	—	—	229 041	24 868	1 275	667	647
1996	—	—	—	—	225 590	25 307	1 304	712
1997	—	—	—	—	—	221 860	25 103	1 466
1998	—	—	—	—	—	—	220 010	24 160
1999	—	—	—	—	—	—	—	219 903
Total registered	**264 151**	**260 229**	**258 051**	**256 190**	**253 834**	**251 842**	**249 616**	**248 870**

Midwives' collection

The National Perinatal Statistics Unit of the Australian Institute of Health and Welfare has published *Australia's Mothers and Babies* annually from 1991. This publication contains data from the Perinatal Statistics Collection, and throughout this publication it is referred to as the Midwives' Collection, or Midwives' data.

These data are collected in hospitals, primarily by midwives, for each birth (including fetal death) which takes place in a hospital. Some home births (presumably attended by midwives and/or practitioners) are also included. In 1997, planned homebirths represented 0.3% of all confinements in Australia. The total number of homebirths that occur is not known. Some home births are not notified to the Midwives' Collection but are still registered by the parents.

The latest available Midwives' data are for 1997, therefore comparisons between this series and the Birth Registrations series are for that year, and are available in the Appendix on page 100.

SPECIAL ARTICLE FOOD AND NUTRIENT CONSUMPTION DURING PREGNANCY

INTRODUCTION

Nutrition during pregnancy is an important factor influencing the health of both the foetus and the mother. An adequate intake of nutrients helps to minimise the risk of birth defects, low-birthweight infants and complications during pregnancy and childbirth.

Results in this article are based on data from the 1995 National Nutrition Survey (NNS), in which women were asked whether they were pregnant. The instrument to measure food and nutrient intake in the survey was the daily food consumption (24-hour recall) method. To improve comparability, the data below include only women aged 17–40 years, the age range in which pregnant women were identified in the NNS.

The food consumption patterns of pregnant women differed from non-pregnant women, with pregnant women tending to avoid certain foods and consuming more of others. On average, pregnant women ate more, as well as more often, than non-pregnant women.

FREQUENCY OF EATING OCCASIONS

More than half of pregnant women ate between five and six times daily, compared with two to four times daily by the majority of non-pregnant women. Eating small, frequent meals may help to alleviate some of the symptoms associated with pregnancy, such as nausea and heartburn.

Pregnant women may also be more inclined to make conscience choice about their diet. Only 5% of pregnant women did not eat breakfast, compared with 14% of non-pregnant women.

NUMBER OF TIMES FOOD IS CONSUMED PER DAY

	Pregnant	*Not pregnant*	*Total*
Number of times per day	%	%	%
Once	–	1.0	1.0
Two to four times	38.5	51.8	51.1
Five to six times	56.2	42.1	42.8
Seven or more times	5.3	4.3	4.3
Don't know/varies/depends	–	0.8	0.8
Total	100.0	100.0	100.0

Source: 1995 National Nutrition Survey

FOOD AND BEVERAGE INTAKE

The National Health and Medical Research Council (NHMRC, 1991) recommend that in pregnancy, alcohol consumption be avoided completely. Most pregnant women seemed to have followed this advice with only 7% of them consuming alcoholic beverages, compared with 22% of non-pregnant women. There are some concerns about the link between caffeine consumption during pregnancy and pregnancy outcomes (Whitney & Rolfes, 1999). Possibly reflecting these concerns, a lower proportion of pregnant women drank coffee and coffee substitutes.

Perhaps to compensate for their reduced intake of these beverages, a higher proportion (94%) of pregnant women drank water and mineral waters, compared to 83% of non-pregnant women. Also, more pregnant women drank fruit and vegetable juices (46%, compared with 39% of non-pregnant women). There was little difference in the proportions who ate vegetables, but pregnant women were more likely to consume fruits than were non-pregnant women.

CONSUMPTION OF SELECTED FOODS AND BEVERAGES

Selected foods and beverages	*Pregnant* %	*Not pregnant* %
Mineral waters and water	93.8	82.7
Fruit and vegetable juices and drinks	45.5	39.4
Soft drinks, flavoured mineral waters and electrolyte drinks	30.9	36.4
Coffee and coffee substitutes	30.2	52.2
Alcoholic beverages	7.3	22.4
Vegetable products and dishes	88.7	87.4
Regular breads, and rolls	80.1	76.2
Fruit products and dishes	61.5	49.6
Margarine	54.6	45.5
Rice and rice products	22.3	17.4

Source: 1995 National Nutrition Survey

ENERGY AND NUTRIENT INTAKE

Consistent with their higher average intake of food and beverages, pregnant women consumed, on average, around 9,100 kJ per day, or 13% more energy than non-pregnant women. Their intake of almost every macronutrient was higher than that of non-pregnant women.

AVERAGE NUTRIENT INTAKE

Nutrient	*Units*	*Pregnant*	*Not pregnant*
Energy	(kJ)	9 107.6	8 043.9
Moisture (a)	(g)	1 893.3	1 956.7
Macronutrients			
Protein	(g)	87.1	76.8
Total fat	(g)	84.9	72.8
Saturated fat	(g)	34.2	29.3
Monounsaturated fat	(g)	30.5	26.2
Polyunsaturated fat	(g)	12.7	10.9
Cholesterol	(mg)	282.1	246.3
Total carbohydrate	(g)	267.4	229.1
Total sugars	(g)	122.4	105.7
Total starch	(g)	143.5	122.2
Dietary fibre	(g)	22.0	19.6
Alcohol(b)	(g)	0.9	7.7

Source: 1995 National Nutrition Survey

(a) Includes plain drinking water

(b) Represents pure alcohol

This pattern of consumption is also evident in the intake of vitamins and minerals. Intake of most micronutrients met or exceeded Australian Recommended Dietary Intakes (RDIs); for example, the average intake of vitamin C was more than double the RDI and for niacin equivalent, it was more than triple. Nevertheless, there were some essential vitamins and minerals for which the average consumption from dietary intake was below the relevant RDI. In particular, pregnant women consumed, on average, approximately 13% less calcium than the RDI, 34% less zinc, and 44% less iron. All these are essential to the health of a pregnant woman and the normal development of the foetus. However, current Australian RDIs for pregnant women are likely to be higher than necessary as they do not account for the increased absorption, during pregnancy, of micronutrients such as zinc, iron and calcium.

The table below also indicates that pregnant women consumed approximately 32% less folate than the relevant RDI. The NHMRC guidelines are primarily aimed at increasing the folate intake of women at least a month before conceiving and into the first few weeks of pregnancy. Therefore the folate intake of pregnant women in the 1995 NNS may appear low because the majority of respondents identified as being pregnant were beyond this early stage of pregnancy to which the higher RDI particularly applies.

AVERAGE NUTRIENT INTAKE

		AVERAGE NUTRIENT INTAKE		RECOMMENDED DIETARY INTAKE	
Micronutrients	*Unit*	*Pregnant*	*Not pregnant*	*Pregnant women*	*Women 19–54 yrs*
Vitamins					
Vitamin A retinol equiv.	(mcg)	1 226.9	981.3	750.0	750.0
Thiamin	(mg)	2.0	1.4	1.0	0.8
Riboflavin	(mg)	2.6	1.8	1.5	1.2
Niacin equiv.	(mg)	41.1	35.3	15.0	13.0
Folate	(mcg)	273.7	224.0	400.0	200.0
Vitamin C	(mg)	130.8	112.7	60.0	30.0
Minerals					
Calcium	(mg)	961.8	754.8	1 100.0	800.0
Phosphorus	(mg)	1 517.3	1 302.8	1 200.0	1 000.0
Magnesium	(mg)	305.9	276.9	300.0	270.0
Iron	(mg)	12.3	11.8	22 to 36	12 to 16
Zinc	(mg)	10.6	9.9	16.0	12.0
Potassium	(mg)	3 203.2	2 770.6	1 950 to 5 460	1 950 to 5 460

Source: 1995 National Nutrition Survey

Although it is not the only factor involved, insufficient folate intake is associated with the development of neural tube defects in the foetus, such as spina bifida. In recognition of the importance of increasing folate intake before and during pregnancy, the NHMRC has introduced a strategy for voluntary folate fortification of selected foods and beverages. Subsequently, some food manufacturers have begun fortifying products such as breads, cereals and fruit juices. This will make it easier for women to consume more folate through diet alone. As this has occurred since 1995, it is likely that women with similar eating patterns would now consume more folate than was recorded in the National Nutrition Survey.

CHAPTER 3 FERTILITY

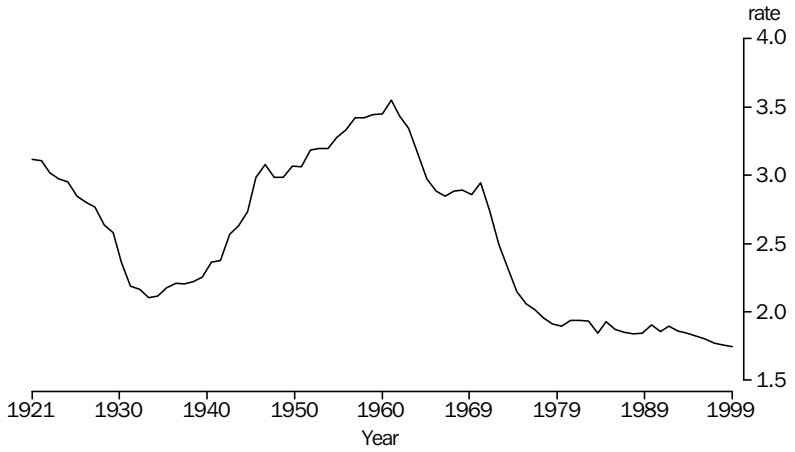
INTRODUCTION

Fertility indicators measure the reproductive behaviour of women at any given time. This chapter examines the fertility of women based on the 1999 birth registrations.

HISTORICAL PATTERNS

During 1999, Australia's total fertility rate was 1.75, slightly below the 1998 level of 1.76 babies per woman. From a peak of 3.1 during the early 1920s, the fertility rate troughed during the 1930s to 2.1 before gradually increasing to peak at 3.6 babies per woman in 1961. Another smaller peak occurred in the early 1970s at 2.9. The reinterpretation of abortion law in New South Wales in late 1971, in a ruling by Justice Levine in the case of *R v Wall et al.,* had a significant impact on women's ability to control their fertility, and contributed to a substantial fall in births to young women, a decrease in the total fertility rate and an increase in the median age of mothers (Carmichael, 1998). After this, fertility continued to fall as more women chose to delay or deny parenthood. Since the late 1970s, the total fertility rate has fluctuated around 1.8 to 1.9 babies per woman, but the 1990s have seen a steady small decline.

3.1 TOTAL FERTILITY RATES



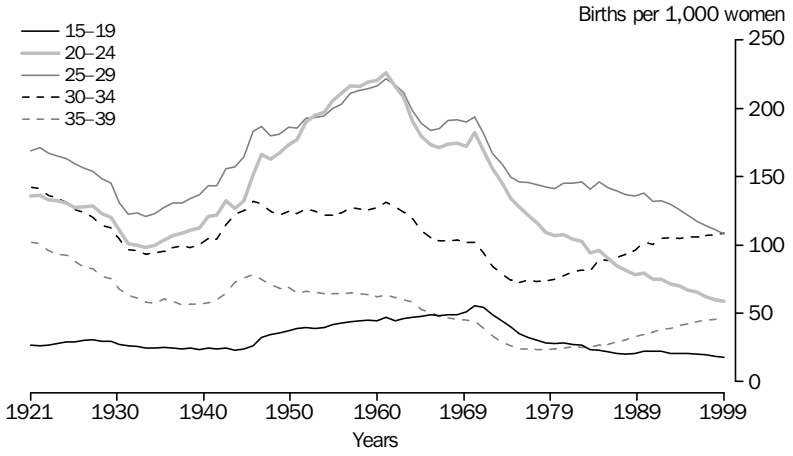
Age-specific fertility rates show the average number of births registered per 1,000 women at each reproductive age or age group. These rates are then summed together to form the total fertility rate. In 1999, women in the 30–34 years age group overtook the 25–29 year olds in experiencing the highest fertility rate, at 108.5 babies per 1,000 women. Women aged 25–29 years had the second highest fertility rate at 108.1 births per 1,000 women, followed by women aged 20–24 years (at 58.5) and women aged 35–39 years (at 47.0).

HISTORICAL PATTERNS *continued*

Between 1921 and 1976, there have been varying levels of fertility at each age group, with every age group peaking and troughing together, although the peaks in some age groups were not as pronounced as in others. During the 1930s all age groups experienced low levels of fertility which gradually increased through to the early 1960s. By 1984 the level of fertility of women aged 35–39 years had increased to become higher than that of 15–19 year olds, as it was previously up until 1967. In 1987, 30–34 year old women had experienced a higher fertility rate than 20–24 year old women.

The main decline in the fertility rate over the period 1979–1999 (by 9%) occurred among younger women. Between 1979 and 1999, fertility of women aged 20–24 years and 25–29 years declined by 46% and 24% respectively. At the same time fertility rose for women aged 30–34 years (47%) and 35–39 years (99%). The age-specific fertility of women aged 40 years and over also increased during the period, the trend towards older motherhood continued.

3.2 AGE-SPECIFIC FERTILITY RATES, Selected Ages



The decline in fertility in the 1990s has been attributed to factors such as the high cost of children, the risk of making long-term commitments in the face of an uncertain future and the uneven nature of gender equity (McDonald: 6, 2000). Women are deciding to remain childless or to have fewer children.

3.3 AGE-SPECIFIC FERTILITY RATES(a) AND TOTAL FERTILITY RATES(b)

	AGE GROUP (YEARS)							
	15–19(c)	*20–24*	*25–29*	*30–34*	*35–39*	*40–44*	*45–49(d)*	*Total fertility rate*
1921	26.6	135.9	169.0	142.5	101.9	43.6	4.3	3.119
1922	26.2	136.4	170.8	141.1	100.9	41.9	3.9	3.106
1923	26.5	133.1	167.1	136.1	95.7	40.2	4.5	3.016
1924	27.9	132.2	164.7	134.2	93.3	38.1	4.0	2.972
1925	29.1	130.8	163.4	131.3	92.8	38.4	4.1	2.950
1926	29.2	127.4	159.4	125.4	88.2	36.2	3.8	2.848
1927	29.9	127.7	156.2	124.1	83.5	34.9	3.6	2.800
1928	30.6	128.5	153.9	120.2	82.8	33.6	3.9	2.768
1929	29.4	122.7	148.2	114.3	76.9	32.0	3.4	2.635
1930	29.3	120.2	144.9	112.2	75.6	30.9	3.1	2.581
1931	27.2	110.8	130.7	104.4	67.9	27.7	3.1	2.359
1932	25.9	101.0	122.2	96.3	63.2	25.8	2.9	2.187
1933	25.6	99.6	123.6	96.0	61.3	24.5	2.6	2.166
1934	24.6	97.9	120.7	93.3	58.4	24.1	2.3	2.107
1935	24.6	99.6	123.2	94.0	57.3	21.9	2.3	2.115
1936	24.9	103.5	127.5	95.5	60.3	21.6	2.2	2.178
1937	24.6	107.1	130.7	97.9	58.6	20.7	2.0	2.208
1938	23.8	108.4	130.9	99.2	56.3	20.2	2.1	2.205
1939	24.3	110.5	133.9	98.3	56.4	19.0	1.9	2.222
1940	23.6	112.5	136.8	100.5	56.6	19.4	1.7	2.256
1941	24.3	121.0	143.5	104.9	57.8	19.6	1.7	2.364
1942	24.0	121.8	143.6	104.2	60.0	19.6	1.7	2.375
1943	24.3	132.5	155.4	114.8	64.5	20.6	1.6	2.569
1944	22.9	126.7	157.3	122.5	72.9	22.1	1.6	2.630
1945	23.8	132.4	164.2	125.2	76.1	23.7	1.8	2.736
1946	26.1	151.1	183.2	131.7	78.3	24.6	2.1	2.986
1947	32.1	166.2	186.6	130.0	75.0	23.5	1.8	3.076
1948	34.2	163.0	179.8	124.6	71.2	22.5	1.7	2.985
1949	35.8	167.4	180.9	121.9	68.4	21.2	1.6	2.986
1950	37.0	173.5	186.0	124.6	68.8	21.8	1.6	3.067
1951	38.6	177.2	185.3	123.1	65.0	21.0	1.6	3.059
1952	39.3	189.7	192.7	126.1	66.1	20.5	1.7	3.181
1953	38.8	194.7	193.2	124.6	65.3	20.5	1.4	3.193
1954	39.2	197.1	194.0	121.8	64.4	20.2	1.5	3.191
1955	41.8	205.4	199.6	122.0	64.4	20.4	1.4	3.275
1956	43.0	210.9	203.0	123.5	64.2	19.7	1.6	3.330
1957	44.0	216.2	210.7	127.2	65.1	19.5	1.4	3.421
1958	44.6	215.9	212.9	126.4	64.3	18.5	1.5	3.421
1959	45.2	219.0	214.4	125.7	63.6	18.6	1.5	3.440
1960	44.3	220.1	216.3	127.5	62.3	18.4	1.3	3.451
1961	47.4	225.8	221.2	131.1	63.4	19.2	1.4	3.548
1962	44.7	216.0	216.7	127.7	61.4	18.4	1.2	3.431
1963	45.9	208.2	211.2	123.9	59.7	18.6	1.1	3.343
1964	47.0	190.5	198.1	119.1	58.4	16.5	1.2	3.154
1965	47.5	179.3	188.5	110.1	53.0	15.0	1.1	2.973

(a) Per 1,000 women.

(b) Per woman.

(c) Includes births to mothers aged less than 15.

(d) Includes births to mothers aged 50 and over.

3.3 AGE-SPECIFIC FERTILITY RATES(a) AND TOTAL FERTILITY RATES(b) *continued*

	AGE GROUP (YEARS)							
	15–19(c)	*20–24*	*25–29*	*30–34*	*35–39*	*40–44*	*45–49(d)*	*Total fertility rate*
1966	48.9	173.1	183.9	105.1	50.6	14.2	1.1	2.885
1967	48.4	170.8	185.0	102.8	47.8	13.5	1.1	2.847
1968	48.9	173.6	190.8	103.3	46.7	12.9	1.0	2.886
1969	49.0	174.2	191.8	103.5	45.6	12.2	1.0	2.887
1970	50.9	172.0	189.6	101.8	44.9	11.7	0.8	2.859
1971	55.5	181.9	193.5	101.8	44.2	11.3	0.8	2.945
1972	54.5	168.7	181.7	94.0	38.9	10.0	0.8	2.743
1973	49.1	155.4	166.9	84.2	33.6	8.4	0.6	2.491
1974	44.2	145.4	159.3	78.5	29.1	7.2	0.4	2.321
1975	40.1	133.9	149.6	74.1	26.0	6.1	0.4	2.151
1976	35.2	128.2	146.2	72.5	24.1	5.5	0.4	2.061
1977	32.1	122.0	145.7	74.1	23.9	5.0	0.3	2.016
1978	29.9	115.8	144.0	73.4	23.5	4.5	0.2	1.957
1979	28.5	109.1	142.5	73.9	23.6	4.6	0.3	1.913
1980	27.6	107.0	141.0	75.1	23.7	4.4	0.3	1.896
1981	28.2	107.5	145.2	77.6	24.5	4.5	0.3	1.939
1982	27.4	103.9	144.9	80.6	25.6	4.5	0.3	1.936
1983	26.6	102.7	145.9	81.5	25.0	4.3	0.2	1.931
1984	23.2	94.3	140.4	81.2	25.0	4.3	0.3	1.844
1985	22.8	95.8	146.0	89.0	26.9	4.5	0.2	1.926
1986	21.8	90.0	141.9	88.7	27.2	4.3	0.2	1.871
1987	20.6	85.0	139.6	90.6	28.9	4.8	0.3	1.849
1988	20.3	81.5	136.9	93.3	30.5	4.6	0.2	1.837
1989	20.6	78.4	135.4	96.1	32.6	5.0	0.2	1.842
1990	22.1	79.4	137.9	101.7	34.7	5.5	0.2	1.908
1991	22.1	75.0	132.0	100.2	36.0	5.5	0.2	1.855
1992	22.0	74.9	132.3	104.6	38.3	6.1	0.3	1.893
1993	20.9	71.3	129.8	105.4	38.9	6.3	0.2	1.864
1994	20.7	69.7	125.8	105.0	41.1	6.7	0.3	1.847
1995	20.4	67.1	121.7	106.0	42.3	7.2	0.3	1.825
1996	20.1	65.2	117.1	105.7	43.7	7.5	0.3	1.798
1997	19.5	62.3	113.8	106.7	44.9	7.5	0.3	1.775
1998	18.4	60.0	111.2	107.2	45.7	8.0	0.3	1.755
1999	18.1	58.5	108.1	108.5	47.0	8.5	0.3	1.745

(a) Per 1,000 women.

(b) Per woman.

(c) Includes births to mothers aged less than 15.

(d) Includes births to mothers aged 50 and over.

COHORT FERTILITY

The following analysis of cohort fertility compares the fertility patterns of women in selected age groups over a period of time. The 1996 Census of Population and Housing asked the question 'For each female, how many babies has she ever had?' This question provides information about the level of fertility attained by women by their ages at the Censuses. This question was also asked at the 1981 and 1986 Censuses

Data from the 1996 Census indicates that 12% of women aged 40–44 years, who have effectively completed their fertility, have not had any children, compared to 8% at the 1981 Census and 9% at the 1986 Census. At the same time, the proportion of women

COHORT FERTILITY *continued*

aged 40–44 years who have had three or more children has declined, from 52% in 1981 to 36% in 1996. This decline in fertility reflects both the increase in childlessness and the decrease in the proportion of women having more than three children.

Increasing delays in childbearing among younger women are evident when comparing the proportion of women having children at the 1996, 1986 and 1981 Censuses. There were 60% of women aged 20–24 years in 1981 that had not had a child, by 1986 this had increased to 67% and in 1996 to 76%. A similar trend is evident for women aged 25–29 years. In 1981, 32% of these women had not had a child, increasing to 40% in 1986 and to 53% in 1996.

Children ever born

The average number of children ever born to a woman, or average issue, sums up fertility decline over the years. When comparing the three Censuses, the average issue has declined for each five year age group. For women aged 40–44 years, the average issue declined from 2.6 in 1981 to 2.1 in 1996.

3.4 CHILDREN EVER BORN AND AVERAGE ISSUE, Specific Age Groups of Women

		NUMBER OF CHILDREN EVER BORN.....						
		0	*1*	*2*	*3*	*4 or more*	*Female population*	*Average issue*
Age of women/birth cohort	*Source*	%	%	%	%	%	no.	no.
20–24 years								
Birth cohort of								
1972–1976	1996 Census	75.8	10.8	4.8	1.2	0.4	666 209	0.27
1962–1966	1986 Census	66.5	12.9	6.8	1.5	0.4	633 133	0.37
1957–1961	1981 Census	60.3	15.0	8.3	1.9	0.4	618 422	0.45
25–29 years								
Birth cohort of								
1967–1971	1996 Census	53.2	18.3	15.3	5.6	2.1	689 929	0.78
1957–1961	1986 Census	39.6	19.3	22.3	8.5	2.8	648 677	1.09
1952–1956	1981 Census	32.3	19.8	26.7	10.4	3.3	592 511	1.27
30–34 years								
Birth cohort of								
1962–1966	1996 Census	27.7	17.9	29.3	14.3	6.1	708 094	1.51
1952–1956	1986 Census	18.7	14.5	33.9	18.7	7.9	618 060	1.82
1947–1951	1981 Census	14.3	12.7	36.5	20.9	9.4	591 563	1.98
35–39 years								
Birth cohort of								
1957–1961	1996 Census	16.0	12.8	35.1	21.3	10.5	720 470	1.97
1947–1951	1986 Census	11.2	9.8	36.4	23.6	12.6	612 070	2.18
1942–1946	1981 Census	9.3	8.5	33.6	25.3	17.0	479 557	2.34
40–44 years								
Birth cohort of								
1952–1956	1996 Census	12.2	10.8	36.5	23.5	12.5	668 407	2.14
1942–1946	1986 Census	9.0	8.1	33.2	25.2	17.6	482 617	2.37
1937–1941	1981 Census	7.9	7.1	27.2	25.7	25.8	401 102	2.58

Source: 1996 Census of Population and Housing.

COMPLETED FERTILITY

Table 3.5 shows the average number of babies that a cohort of women had or would have over their reproductive lives. This is calculated in a similar way to the total fertility rate, except that instead of adding the age-specific fertility rates prevailing in a given year, the age-specific fertility rates actually experienced by a cohort of women born in a given year are summed.

3.5 COMPLETED FERTILITY(a), Year of Birth of Woman

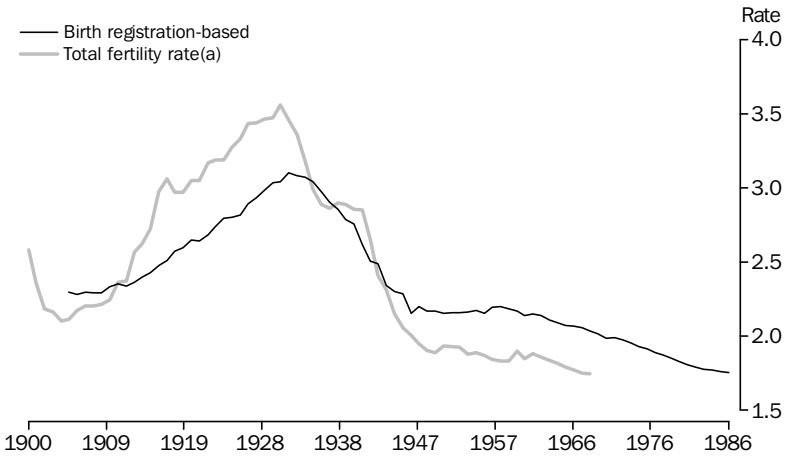
Year of birth	Average issue no.	Proportion based on projected births(b) %	Median age (all births) years
1905	2.296	—	27.8
1910	2.333	—	28.8
1915	2.430	—	28.9
1920	2.649	—	28.2
1925	2.803	—	27.6
1930	3.034	—	27.0
1935	3.044	—	26.0
1940	2.758	—	25.4
1945	2.304	—	25.4
1950	2.168	—	26.4
1955	2.176	0.1	27.2
1960	2.171	2.4	27.9
1965	2.092	16.2	28.8
1970	2.017	48.1	29.7
1975	1.933	78.9	30.4
1980	1.828	94.8	30.8
1985	1.764	100.0	31.1

(a) Based on age-specific fertility rates derived from birth registrations. Cohorts which have not yet completed their fertility are assumed to experience a fertility rate dropping to 1.75 over 10 years, with an increasing age of motherhood.

(b) Proportion of the estimated average derived from projected fertility.

Completed fertility follows a similar pattern to the total fertility rate. The highest average completed fertility was for women born in 1932. The experience of a cohort of women can be thought of as an average of the prevailing attitudes and patterns that occurred throughout their lives. So while women born in 1930 lived through the peak of the baby boom, they also lived through and after the baby boom. Because of this, their average completed fertility did not reach the heights of the peak in total fertility of the baby boom years.

3.6 AVERAGE COMPLETED FERTILITY AND TOTAL FERTILITY RATE



(a) The total fertility rate has been lagged by 30 years to facilitate comparison of the different series. Hence the completed fertility of women can be compared to the total fertility rate prevailing while they were at or near their peak fertility.

REPLACEMENT FERTILITY

Since 1976, Australia has had below replacement level fertility. That is, the average number of babies born to a woman throughout her reproductive life (the total fertility rate) has been insufficient to replace herself and her partner. Although the total fertility rate required for replacement is currently around 2.1 babies per woman, this number is not constant. Because the level of fertility required for replacement is dependent on the number of women who survive to reproductive ages, replacement fertility has declined in parallel with falls in female mortality. In 1921, when mortality rates were high, replacement fertility was 2.4 babies per woman. By 1954, it had fallen to 2.1, and in 1996 replacement fertility was 2.08. Even if female mortality declined to zero, the replacement level would still be 2.05 (1.05 male and 1.0 female babies) – considerably higher than the 1999 total fertility rate of 1.75 babies per woman.

Despite below replacement fertility for more than 20 years in Australia, births still outnumber deaths by around 2:1. This is because of 'population momentum'—the fact that there have been relatively large numbers of women moving into child-bearing ages has ensured a large number of births despite the total fertility rate declining. This is coupled with relatively fewer people in the older age groups where most deaths occur. However, with population ageing and the declining number of women in child-bearing ages, there is little prospect of an increase in the annual number of births. Meanwhile the number of deaths will increase as more people move into older ages, eventually tipping the balance in favour of deaths. Australian Bureau of Statistics (ABS) population projections indicate that this will happen sometime in the 2030s.

NET REPRODUCTION RATE

On current rates, a baby girl born today can expect to have, on average, 0.842 daughters in her life time. This takes into account current fertility rates, the sex ratio of babies (the number of male to female births), and the chance of her dying before finishing her reproductive life. Because the sex ratio is stable at 105 male births to 100 female births, and mortality rates are falling, the proportion of girls surviving to reproductive ages is increasing. The decline in the net reproduction rate is entirely due to the fall in fertility over the last two decades.

The net reproduction rate in 1999 was 0.842, a figure which has declined by 7% from its level of 0.908 in 1979 and 5% from its level of 0.882 in 1989.

3.7 FERTILITY RATES

Selected years	*Net reproduction rate(a)*	*Total fertility rate*
1979	0.908	1.913
1984	0.883	1.844
1989	0.882	1.842
1994	0.884	1.847
1995	0.875	1.825
1996	0.861	1.798
1997	0.854	1.775
1998	0.842	1.755
1999	0.842	1.745

(a) Net reproduction rates are based on Annual Life Tables calculated by the ABS.

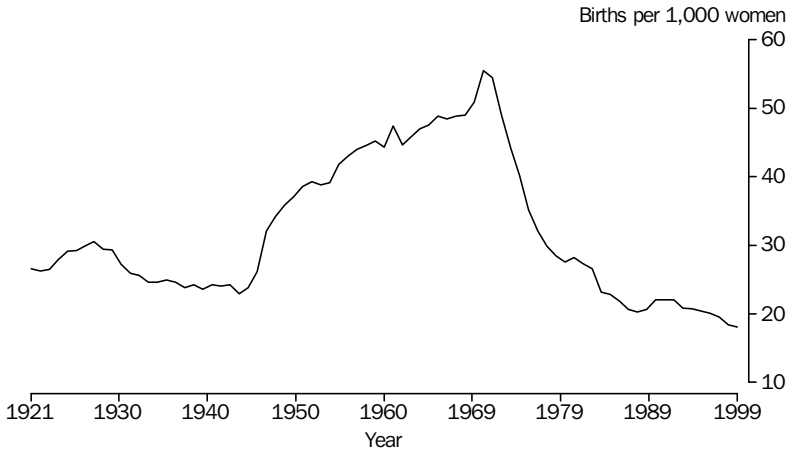
INTRODUCTION

Teenage fertility has been an issue of social concern in Australia. This concern is often related to the possible restricted opportunities in education and employment for the teenage mother, as pregnancy and child rearing may disrupt education and career plans. Furthermore, there are probable health risks for both mother and child associated with pregnancy at younger ages.

TEENAGE FERTILITY IN AUSTRALIA

The teenage fertility rate—the number of births in a given year per 1,000 females aged 15–19 years[1]—has been declining since the 1970s, so that teenagers are now less likely to be parents than they were thirty years ago. The rate of childbearing among Australian teenagers peaked at 55.5 births per 1,000 females in 1971, before falling to half its peak level (27.6) by 1980, and reaching its lowest ever rate of 18.1 births per 1,000 females in 1999.

TEENAGE FERTILITY RATE



The decline in teenage fertility has paralleled social and legislative changes that influence the options available for sexually active teenagers. These include access to sexual education programs, widespread access to and use of contraceptives, and easier accessibility to safe abortion.

[1] Includes births to women aged less than 15 years

TEENAGE ABORTION AND PREGNANCY RATES

Fertility rates understate the actual occurrence of pregnancy as they include only live births and exclude induced and spontaneous abortions (or miscarriages) and stillbirths. While access to abortion is undoubtedly an important factor affecting the levels of teenage fertility, data on abortions in Australia is limited. Reliable population-based data are available only from South Australia where terminations are notified by law and reported annually by the Pregnancy Outcome Unit of the South Australian Health Commission.

According to the South Australian Pregnancy Outcome Unit (1997), teenage abortions have exceeded teenage births in South Australia since 1995. Compared with other age groups, pregnancies amongst teenagers are more likely to end in abortion. The Annual Report of the Pregnancy Outcome Unit indicates that in 1997, over half of known teenage pregnancies (54%) were terminated, compared with 35% for women aged 20–24 and 23% of known pregnancies for all ages.

INTERNATIONAL COMPARISON

Australia's recent teenage fertility rate is much lower than those of other comparable countries. Compared to the latest available data, Australia (18.1 in 1999) has lower fertility rates for women aged 15–19 years than the United States of America (51.1 in 1998), New Zealand (29.8 in 1998), United Kingdom (29.7 in 1996) and Canada (20.2 in 1997). Since 1950 Japan has consistently had one of the lowest teenage fertility rates (3.9 in 1996), although since the mid 1980s other countries such as Hong Kong, Singapore and the Netherlands have also experienced declining teenage fertility rates, falling below ten births per 1,000 women aged 15–19.

TEENAGE FERTILITY RATE (a) Selected countries

	Reference year	*Births per 1,000 females*
Australia	1999	18.1
Canada	1997	20.2
China	n.a.	n.a.
France	1993	7.9
Greece	1995	13.0
Hong Kong	1996	5.8
India	n.a.	n.a.
Indonesia	n.a.	n.a.
Italy	1995	6.8
Japan	1996	3.9
Korea, Republic of	1995	3.3
Malaysia	1996	13.4
Netherlands	1996	4.1
New Zealand	1998	29.8
Papua New Guinea	n.a.	n.a.
Singapore	1997	7.0
Sweden	1996	7.8
United Kingdom	1996	29.7
United States of America	1998	51.1
Viet Nam	n.a.	n.a.

(a) Females aged 15–19 years.

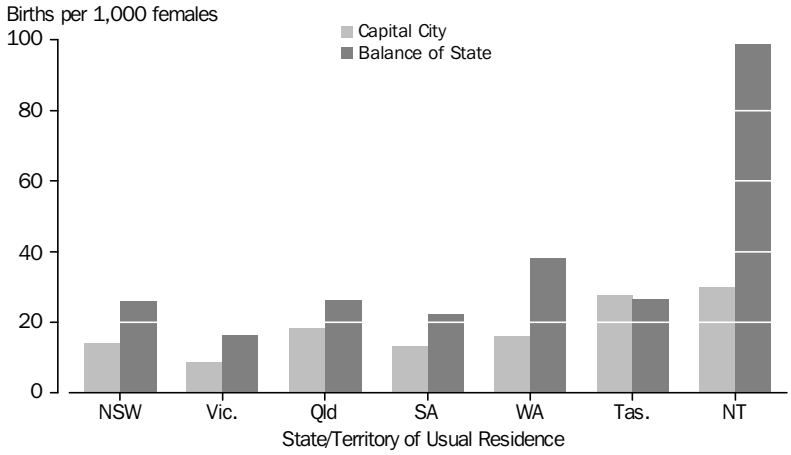
Sources: *Births*, Australia (Cat. no 3301.0), Statistics New Zealand 2000, Statistics Canada, Department of Economic and Social Affairs various years, Ventura et. al. 2000.

STATE AND TERRITORY DIFFERENCES

The Northern Territory had the highest teenage fertility rate of the States and Territories at 67.5 births per 1,000 females aged 15–19 years, nearly four times higher than the Australian teenage fertility rate (18.1). This reflects the high proportion of Indigenous people within the Northern Territory, who have the highest Indigenous teenage fertility rate.

In all States and Territories, excluding Tasmania, the teenage fertility rate was higher in the balance of State than the capital cities. Once again, the Northern Territory's capital city/balance of State teenage fertility profile was quite different to the other States and Territories, the balance of State rate was three times higher than that of Darwin (98.7 and 30.0 respectively). Victoria had the lowest teenage fertility rate at both the balance of State and capital city levels (16.4 and 8.6 respectively).

TEENAGE FERTILITY RATE, Capital City and Balance of State



INDIGENOUS TEENAGE FERTILITY

The Indigenous teenage fertility rate in 1999 was 77.6 births per 1,000 women, more than four times the rate for all Australian women. This varied across the States and Territories, but was highest in the Northern Territory, Western Australia and Queensland, all of which also had high proportions of Indigenous women in the population, relative to the other States and Territories.

TEENAGE FERTILITY RATE, Indigenous and all births

	Births to Indigenous mothers(a)	*All births*
New South Wales	66.3	18.6
Victoria	39.8	10.8
Queensland	71.2	22.4
South Australia	71.9	15.5
Western Australia	96.8	21.2
Tasmania	37.4	27.1
Northern Territory	127.3	67.6
Australian Capital Territory	27.3	11.8
Australia	77.6	18.1

(a) Indigenous rates based on the 1996 Census-based projected population for 1999, low series, experimental Projections of the Aboriginal and Torres Strait Islander Population, 1996–2006 (Cat. no 3231.0).

NUPTIALITY AND PATERNITY-ACKNOWLEDGED

Most teenage births are ex-nuptial, that is they occur outside a registered marriage. In 1999, 91% of births to women aged 15–19 years were ex-nuptial, compared to 9% for nuptial births. Across the States and Territories the highest proportion of ex-nuptial births occurred in Tasmania and the Northern Territory (each 97%). Paternity was acknowledged for most ex-nuptial teenage births. Once again, the Northern Territory was the exception amongst the States and Territories, where the proportion of ex-nuptial paternity not acknowledged births was 50%, higher than the proportion for paternity-acknowledged births (47%).

NUPTIALITY OF TEENAGE FERTILITY

	Nuptial	*Ex-nuptial, paternity acknowledged*	*Ex-nuptial, paternity not acknowledged*	*Total Ex-nuptial*
	%	%	%	%
New South Wales	12.4	72.0	15.5	87.6
Victoria	11.7	79.3	9.0	88.3
Queensland	7.3	73.1	19.7	92.7
South Australia	5.5	79.4	15.1	94.5
Western Australia	6.6	76.7	16.8	93.4
Tasmania	2.6	82.4	15.0	97.4
Northern Territory	3.0	47.0	50.0	97.0
Australian Capital Territory	9.6	77.0	13.3	90.4
Australia	9.1	73.8	17.0	90.9

HEALTH STATUS OF BABIES

A key indicator of the health of babies is the proportion having a birthweight of less than 2,500 grams. These low-birthweight babies have a greater risk of dying, require longer periods of hospitalisation after birth and are more likely to develop significant disabilities (AIHW 2000, p.182). According to the AIHW (1997), teenage mothers are at a higher risk of having low birthweight babies (less than 2,500g). In 1997, 9.3% of babies born to teenage mothers (compared to 7.0% of babies to all mothers) were of low birthweight, 2.2% (compared with 1.5%) were of very low birthweight (less than 1,500g), and 1.3% (compared with 0.9%) were of extremely low birthweight (less than 1,000g). The proportion of low birthweight babies born to mothers aged less than 15 years was higher than that for all teenage mothers, with 16.8% being of low birthweight, 5% being of very low birthweight and 3.4% being of extremely low birthweight.

SPECIAL ARTICLE

BIRTH ORDER SPECIFIC FERTILITY RATES IN AUSTRALIA, 1986–1999

INTRODUCTION

Birth registration in Australia is compulsory as each birth is to be notified to the Registrar in each State and Territory under their respective State or Territory legislation. All births are registered but the questions on the birth registration form that determine live birth order of the registered birth vary across States and Territories. For all States and Territories information on birth order is available for all live births registered in a year but the birth order is determined from the mother's children in her current relationship only. Many women have children from their previous relationships and therefore, for appraising fertility rates by birth order, children of the mother from all relationships must be included.

This article builds birth order-specific fertility rates based on the children of all relationships of the mother in selected years. Birth registrations in Western Australia since 1986, and Queensland, South Australia, Western Australia, and Tasmania since 1996 have been used to develop expected true birth order of registered births in each year for Australia. It was noted that in these States between 10% and 13% of all registered births in a year occurred to mothers who had children born from their previous relationships. Assuming these percentages were to apply for births in the other States and Territories, expected true birth order of only these births had to be estimated.

Finally, the article examines trends in fertility by birth order, mean ages at childbearing, and the nuptial and ex-nuptial components of birth order-specific fertility. It finds that first and second order births are the main contributors to overall fertility and that ex-nuptial childbearing is increasing and steadily raising the fertility of higher order ex-nuptial births.

SOURCES OF DATA

There are two parallel birth collections in Australia. The Australian Bureau of Statistics (ABS) compiles birth statistics from records supplied by the Registrar of Births, Deaths and Marriages in each State and Territory. The other collection is the Midwives' collection of the Australian Institute of Health and Welfare's National Perinatal Statistics Unit (NPSU). This collection, originating from each State and Territory's health authority, is compiled from notification forms completed in respect of each confinement by midwives and other staff within each State and Territory. The NPSU compiles a national perinatal minimum data set and publishes 'Australia's mothers and babies' each year.

These two collections do not match entirely due to differing methods of collection and perhaps coverage in the two systems. The Midwives' collection reports more births per year (since 1994) and more confinements per year (since 1993) compared with birth registrations. In 1997, the latest year for which Midwives' data are available, the Midwives' collection had 1% more births and 1.7% more confinements recorded for the year than birth registrations. For the same year, it is reported that Tasmanian confinements were under reported (Day et al., 1999).

SOURCES OF DATA *continued*

The reasons for these discrepancies are not clear: Midwives' records are for confinements that occurred in a particular year whereas birth registrations provide details of births registered in that year. Midwives' data only includes some home births notified to NPSU (the occurrence of 'notified' home births is small in Australia — 736 planned home births were notified in a total of 254,400 births reported in this collection in 1997). The under coverage of birth registrations is unknown and is assumed to be minimal by the ABS.

The Midwives' data collection includes a variable 'parity of mother' (defined as the number of previous pregnancies resulting in live births or still births) for women who had a live birth in the year. Birth registrations provide information on live birth order, i.e. the order of the live birth registered in the year, based on previous live births to mother. Previous live births are either based on the current relationship of mother (for all States and Territories) or on all relationships (for Western Australia since 1986, and for Queensland, South Australia, and Tasmania since 1996). Given an ideal situation where both parity and birth order distributions are available for the year, these are comparable for first births only. The number of first births should approximately equate to the number of mothers of 0 parity having a live birth in the year. For other parity orders (1, 2, ...) and birth orders (2, 3, ...) the parity and birth order distributions are not the same since parity as defined by NPSU does not allow increments due to multiple births (about 1.5% Australia-wide in 1999) but allows an increment for both live and still births if these occurred from two different confinements. Thus, the first order birth rate calculated from births to mothers of 0 parity will only be approximate, but other higher order birth rates cannot be calculated from parity distribution of mother.

BIRTH ORDER DATA

Birth registrations

For Australia as a whole, information on birth order of the registered live birth is available based on births which occurred in the current relationship of mother only. States and Territories in Australia, however, vary in terms of collecting birth order of the newborn child. Western Australia is the only State which has collected birth order based on all previous relationships as well as current relationship of mother for births registered from the mid-1980s (available for births registered in 1986). In 1996, Queensland, South Australia and Tasmania joined Western Australia in capturing similar information. Western Australia comprised 9.9% of all births in Australia in 1986, and the four States together comprised over 38% of all births in Australia since 1996. Thus for the remaining States and Territories, birth order based on all relationships of mother required estimation.

Births are classified as nuptial or ex-nuptial depending upon whether the mother was married at the time of birth registration of her child. From 1979, ex-nuptial births have been further classified according to whether the paternity of the newborn was acknowledged or not acknowledged. Over time, the proportion of paternity-not-acknowledged births has decreased from 40.1% of ex-nuptial births (5.4% of total births) in 1981 to 11.8% of ex-nuptial births (3.4% of total births) in 1999. The birth order of the ex-nuptial births is also available for Australia, Western Australia, and the four States on a similar basis as that for nuptial births.

REGISTERED BIRTH, State of Registration

		LIVE BIRTH REPORTED AS.....					AVAILABILITY OF BIRTH ORDER DISTRIBUTION	
		Nuptial	*Ex-nuptial paternity acknowledged*	*Ex-nuptial paternity not acknowledged*	*Total ex-nuptial*	*Total births*	*Current relationship*	*All relationships*
State of registration	Year	no.	no.	no.	no.	no.	%	%
WA	1986	19 726	3 028	1 421	4 449	24 175	100	100
	1993	18 104	5 715	1 260	6 975	25 079	100	100
Qld, SA,	1996	66 948	26 282	4 728	31 010	97 958	100	100
WA, Tas.	1997	65 224	26 210	4 448	30 658	95 882	100	100
	1998	64 346	27 254	4 041	31 295	95 641	100	100
	1999	63 232	28 050	3 849	31 899	95 131	100	100
Other	1986	182 732	25 865	10 636	36 501	219 233	100	—
States/	1993	177 251	47 301	10 598	57 899	235 150	100	—
Territories	1996	117 318	32 267	6 291	38 558	155 876	100	—
	1997	115 880	34 242	5 838	40 080	155 960	100	—
	1998	113 700	35 091	5 184	40 275	153 975	100	—
	1999	112 947	36 094	4 698	40 792	153 739	100	—
Australia	1986	202 458	28 893	12 057	40 950	243 408	100	10
	1993	195 355	53 016	11 858	64 874	260 229	100	10
	1996	184 266	58 549	11 019	69 568	253 834	100	39
	1997	181 104	60 452	10 286	70 738	251 842	100	38
	1998	178 046	62 345	9 225	71 570	249 616	100	38
	1999	176 179	64 144	8 547	72 691	248 870	100	38

The age-birth order distributions of live births registered in a year were developed from the cross-tabulation of birth order based on current relationship and all relationships for births registered in Western Australia from 1986, and Queensland, South Australia, Western Australia, and Tasmania from 1996. These distributions, combined for all age groups of mothers and nuptial status of children, changed little over time. The index of dissimilarity (Shryock and Siegel, 1973, pp 232–233) varied between 2.2 and 4.2 over various comparisons of the 1986 to 1999 distributions. The value of the index closer to 0, in the theoretical range of between 0 and 100, indicates the relative closeness of the two distributions compared.

These distributions (for each year, each five-year age group of mothers, and for nuptial, ex-nuptial-paternity-acknowledged and ex-nuptial-paternity-not acknowledged births registered in the year, for the States for which these were available) were applied to the respective birth order distributions based on current relationship of the mother for the remaining States and Territories. The known and the estimated birth order distributions based on all relationships were added.

Births (by age, birth order and nuptial status) for 1986, 1993, and 1996–1999 for each year were divided by the respective year's estimated resident female population by age to obtain various fertility rates.

Fertility rates

Over the period 1986–1999, total fertility rates have declined for all births, nuptial births and ex-nuptial-paternity-not-acknowledged births. Ex-nuptial-paternity-acknowledged fertility has increased over the same period. In 1999, the peak fertility rate for all births and nuptial births occurred in the 30–34 years age group (previously 25–29 years), and for ex-nuptial births in the 20–24 years age group. The age-pattern of fertility has shifted towards older ages for all birth orders of nuptial and ex-nuptial births (not shown here).

TOTAL FERTILITY RATES(a) BY NUPTIALITY AND BIRTH ORDER, All Relationships, Australia

	BIRTH ORDER							
	1	*2*	*3*	*4*	*5*	*6 or more*	*Total fertility*	*Average birth order*
Year	rate	rate	rate	rate	rate	rate	rate	mean
				NUPTIAL				
1986	570.4	530.2	295.1	106.4	34.6	20.1	1 557.0	2.08
1993	513.5	475.5	255.6	94.3	31.5	22.8	1 393.1	2.08
1996	487.4	454.4	227.3	80.1	27.1	16.9	1 293.1	2.04
1997	472.3	446.2	223.5	79.0	26.2	17.4	1 264.6	2.05
1998	463.5	438.1	219.4	76.6	26.6	17.3	1 241.5	2.05
1999	463.7	428.7	215.6	73.0	26.1	16.5	1 223.6	2.03
				EX-NUPTIAL-PATERNITY-ACKNOWLEDGED				
1986	153.9	35.8	18.1	8.2	2.6	2.5	221.2	1.54
1993	231.6	84.8	40.3	16.7	6.7	4.2	384.3	1.69
1996	235.6	107.1	47.7	20.0	8.4	4.8	423.6	1.76
1997	226.1	111.8	56.5	24.8	10.6	6.7	436.4	1.86
1998	227.8	117.1	58.8	26.4	10.9	8.1	449.1	1.89
1999	235.8	118.4	60.8	26.1	11.2	7.4	459.5	1.87
				EX-NUPTIAL-PATERNITY-NOT-ACKNOWLEDGED				
1986	69.9	10.7	6.8	3.0	1.1	0.8	92.4	1.45
1993	69.6	7.9	4.9	1.9	1.1	1.4	86.8	1.40
1996	66.8	7.1	3.6	1.7	0.9	0.8	80.9	1.33
1997	54.8	9.9	5.4	2.9	1.2	1.1	75.3	1.53
1998	47.3	10.4	5.0	2.7	1.1	0.8	67.5	1.55
1999	42.6	9.2	5.0	2.5	1.4	1.2	62.0	1.62
				TOTAL				
1986	794.1	576.7	320.0	117.6	38.2	23.5	1 870.6	1.98
1993	814.6	568.2	300.9	112.8	39.4	28.4	1 864.2	1.97
1996	789.8	568.7	278.5	101.7	36.4	22.4	1 797.6	1.94
1997	753.2	567.8	285.5	106.7	38.0	25.2	1 776.4	1.98
1998	738.6	565.7	283.2	105.8	38.6	26.2	1 758.1	1.99
1999	742.1	556.3	281.3	101.6	38.7	25.1	1 745.1	1.98

(a) Per 1,000 women.

Fertility rates *continued*

Some 75% of Australian fertility is contributed by first and second order births — 43% by first order births and 32% by second order births. The third order births amount to about 16%, the fourth order births to about 6% and the fifth and higher birth orders to just over 3% of total fertility. These proportions have not changed over the past 13 years, and yield an average birth order size of just under 2 (ranging between 1.94 and 1.99) for births occurring in each of those years.

Nuptial births occurring in a year are more widely spread over birth orders than ex-nuptial births, reflecting a large concentration of ex-nuptial births at the first and second birth orders. The mean birth order of nuptial births in 1999 was 2.03, compared with an average birth order of 1.87 for ex-nuptial-paternity-acknowledged and 1.62 for ex-nuptial-paternity-not-acknowledged births. While the mean birth order has declined only slightly for nuptial births (from 2.08 in the mid-1980s), there is a rapid increase in the occurrence of ex-nuptial higher order births, causing the mean birth order for ex-nuptial-paternity-acknowledged births to increase from 1.54 in 1986 to 1.87 in 1999 and for ex-nuptial-paternity-not-acknowledged births to increase from 1.45 to 1.62 over the same period. First and second births in 1999 contributed 37.9% and 35.0% (or a total of 72.9%) of nuptial fertility, 51.3% and 25.8% (or a total of 77.1%) of ex-nuptial-paternity-acknowledged fertility, and 68.7% and 14.8% (or a total of 83.5%) of ex-nuptial-paternity-not-acknowledged fertility.

MEAN AGE AT CHILDBEARING (years), All relationships—Australia

	BIRTH ORDER						
Year	*1*	*2*	*3*	*4*	*5*	*6 or more*	*Total*
	NUPTIAL						
1986	26.74	28.35	30.09	31.59	32.79	34.52	28.49
1993	28.30	29.81	31.12	32.28	33.21	34.72	29.82
1996	28.87	30.41	31.62	32.68	33.64	35.39	30.32
1997	29.03	30.54	31.78	32.74	33.74	35.39	30.46
1998	29.17	30.67	31.84	32.84	33.80	35.35	30.58
1999	29.32	30.89	32.01	32.99	33.78	35.45	30.74
	EX-NUPTIAL-PATERNITY-ACKNOWLEDGED						
1986	23.74	25.68	28.21	30.19	31.24	32.17	24.85
1993	24.38	26.40	28.19	29.85	31.50	31.93	25.67
1996	24.54	26.75	28.52	30.18	31.39	32.84	26.04
1997	24.40	26.65	28.84	30.44	31.45	32.98	26.20
1998	24.67	26.95	28.75	30.49	31.53	32.92	26.45
1999	24.69	27.10	28.97	30.86	31.79	32.90	26.53
	EX-NUPTIAL-PATERNITY-NOT-ACKNOWLEDGED						
1986	22.69	24.17	27.30	28.17	30.23	34.30	23.62
1993	23.79	25.82	27.05	30.80	31.25	31.90	24.55
1996	24.02	26.91	29.06	29.82	31.97	33.38	24.80
1997	23.83	25.90	28.24	30.48	31.02	34.15	24.94
1998	23.87	25.87	27.95	29.96	30.34	33.75	24.96
1999	23.93	26.31	29.14	29.78	31.72	33.86	25.32

MEAN AGE AT CHILDBEARING (years), All relationships—Australia *continued*

	BIRTH ORDER						
Year	*1*	*2*	*3*	*4*	*5*	*6 or more*	*Total*
	TOTAL						
1986	25.80	28.11	29.92	31.40	32.61	34.26	27.82
1993	26.80	29.25	30.66	31.90	32.86	34.17	28.72
1996	27.17	29.68	31.06	32.14	33.08	34.77	29.06
1997	27.26	29.69	31.13	32.14	33.01	34.69	29.18
1998	27.44	29.81	31.13	32.18	33.06	34.54	29.31
1999	27.54	30.01	31.30	32.37	33.12	34.63	29.44

First birth order fertility

The first birth order-specific fertility rate is a (synthetic) measure of the extent of childlessness in the population. A rate of 742 per 1,000 women in 1999, indicates that if the 1999 age-first order-specific fertility rates were to continue into the future, 25.8% of Australian women would remain childless at the end of their reproductive life. Over the period 1986–1999, the first-order-specific fertility rate has declined by 6.5%, causing likelihood of childlessness to increase over the period, from 20.6% as per the 1986 to 25.8% as per the 1999 fertility rates.

The first birth order fertility is made up of nuptial births (62.5% in 1999), ex-nuptial-paternity- acknowledged births (31.8% in 1999), and ex-nuptial-paternity-not-acknowledged births (5.7% in 1999). Over the period 1986–1999, the share of first order nuptial births and ex-nuptial-paternity-not-acknowledged births has decreased and that of ex-nuptial-paternity-acknowledged births has increased.

The mean age at childbearing of first order birth has risen over time. While it is the lowest among the mean ages for any order births, it has increased from 25.8 years in 1986 to 27.5 years in 1999. The lowest mean age within the first birth order group is for ex-nuptial-paternity-not-acknowledged births (23.9 years in 1999), followed by ex-nuptial-paternity-acknowledged births (24.7 years in 1999) and nuptial births (29.3 years in 1999).

Second birth order fertility

Fertility of the second birth order has also decreased from a level of 577 births per 1,000 women in 1986 to 556 births in 1999, a decrease of 3.5% over the period. A higher proportion of second order births are nuptial (77.1% in 1999) and a lower proportion ex-nuptial (21.3% paternity-acknowledged and 1.7% paternity-not-acknowledged in 1999) than first order births. Over the period 1986–1999, there has been an increase in ex-nuptial fertility of the second order births.

The mean age at childbearing of the second order birth has been on the rise as well, and follows the same pattern as for the mean ages at childbearing of the first order births—the lowest mean age at childbearing for ex-nuptial paternity-not-acknowledged births, followed by that for ex-nuptial-paternity-acknowledged births and nuptial births.

Second birth order fertility *continued*

The cross-sectional mean interval, i.e. the difference between the mean ages at childbearing of the second and first order births, was 2.47 years in 1999, almost at the same level since 1986. The highest mean interval was for ex-nuptial-paternity acknowledged second birth (2.41 years in 1999), followed by ex-nuptial-paternity-not acknowledged second birth (2.38 years in 1999) and a nuptial second order birth (1.57 years in 1999).

Third birth order fertility

The third birth order fertility rate has declined by 12.1% between 1986 (320 per 1,000 women) and 1999 (281 per 1,000 women). Most of this fertility is nuptial (76.6% in 1999) with 21.6% ex-nuptial-paternity-acknowledged, and 1.8% ex-nuptial-paternity-not-acknowledged in 1999. Over the period 1986–1999, there has been a rise in ex-nuptial-paternity-acknowledged fertility of this birth order from 18 per 1,000 women in 1986 to 61 per 1,000 women in 1999.

The mean age at childbearing of third order births is rising and was 31.3 years in 1999. Mothers of nuptial third order births have the highest mean age at childbearing (32.0 years in 1999) followed by mothers of ex-nuptial-paternity-acknowledged births (29.0 years in 1999), the latter only slightly lower than for mothers of ex-nuptial-paternity-not-acknowledged births (29.1 years in 1999).

The mean interval between the occurrence of the second and third births has declined considerably from 1.8 years for the 1986 births to 1.3 years for the 1999 births. Similar decline in birth interval has occurred for the nuptial and ex-nuptial-paternity-acknowledged third order births. Ex-nuptial-paternity-not-acknowledged births show a slight rise in this mean interval.

Fourth and higher order births

The fourth and higher order births contributed about 10% to total fertility (6% by fourth order births, little over 2% by the fifth order births and under 1.5% by the sixth and higher order births in 1999). The proportions are very similar for nuptial and ex-nuptial fertility. Between 1986 and 1999, the fourth and higher birth order fertility has fallen by 8% (from 179 births per 1,000 women in 1986 to 165 births per 1,000 women in 1999), while ex-nuptial fertility of the higher order births has increased almost three times from 18 per 1,000 women in 1986 to 50 per 1,000 women in 1999.

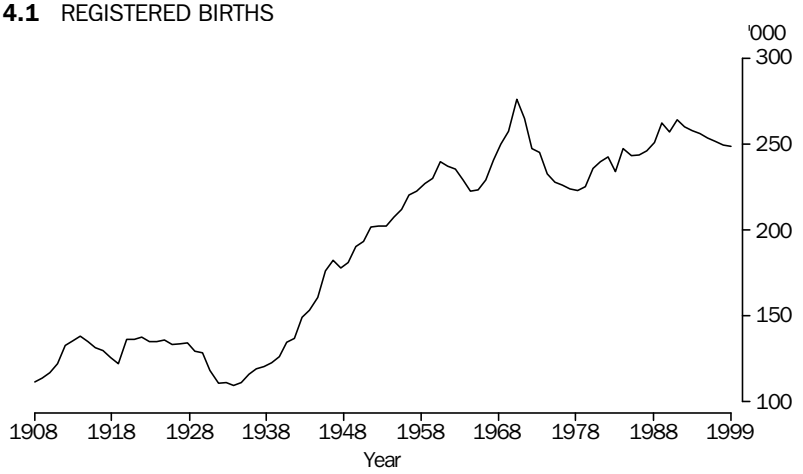
The mean age at childbearing for fourth order births was 32.4 years, just over one year higher than for the third order births. Fifth and higher order births occurred at further higher mean ages at childbearing.

CHAPTER 4 BIRTHS

REGISTERED BIRTHS

For most of the first half of this century, the number of registered births in Australia remained under 140,000, troughing in the early 1930s during the Great Depression. Since then the number of registered births in Australia has grown to reach a peak in 1971 (276,400), fluctuated for the next two decades before reaching the next peak in 1992 (264,200). Since 1992 births have been declining.

4.1 REGISTERED BIRTHS



There were 248,900 births registered in Australia during 1999. The three most populous States accounted for over three-quarters of births registered — 86,800 (35%) in New South Wales, 58,900 (24%) in Victoria and 46,500 (19%) in Queensland. These proportions reflect the distribution of the female population in the reproductive ages for these States, 33% of women aged 15–49 years lived in New South Wales, 25% in Victoria and 19% in Queensland in 1999.

Over the past two decades, Queensland (1.4%), the Northern Territory (1.1%) and Western Australia (1.0%) have experienced the highest average annual increases in the number of babies born in a State or Territory. These increases were a result of population growth in these States or Territories. The population of the Northern Territory increased the most with an average annual rate of 2.7% per year, followed by Queensland (2.3%) and Western Australia (2.0%). Tasmania's (0.6%) and South Australia's (0.7%) populations increased marginally, on average over the past two decades, the Australian Capital Territory increased by 1.7%.

Just over half (51%) of all births registered during 1999 were male babies. Every State and Territory recorded slightly more male than female babies born in the year.

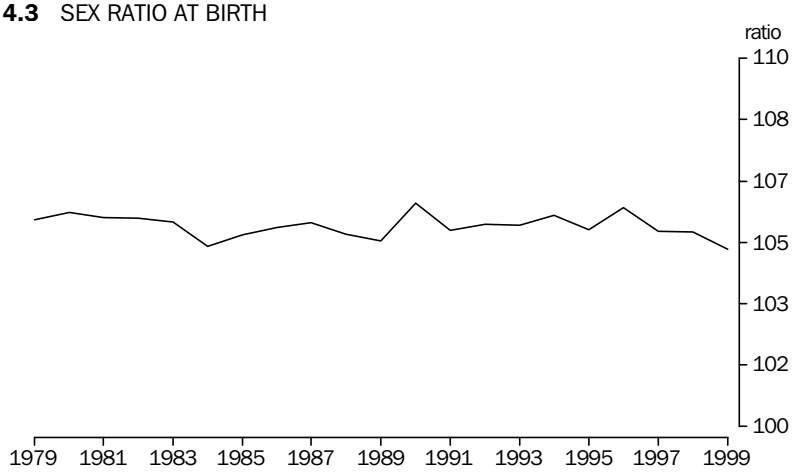
4.2 BIRTHS, Number Registered

Selected years	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Other Territories	Aust.
					MALES					
1979	39 858	29 643	18 150	9 474	10 423	3 438	1 456	2 171	—	114 613
1984	39 885	30 404	20 840	10 276	11 152	3 582	1 629	2 048	—	119 816
1989	43 948	32 841	21 428	10 152	12 783	3 506	1 740	2 112	—	128 510
1994	45 187	32 904	24 148	9 951	12 867	3 497	1 818	2 232	21	132 625
1995	44 884	32 108	23 863	9 977	12 942	3 390	1 960	2 291	17	131 432
1996	44 448	31 587	24 533	9 710	12 813	3 346	1 861	2 241	33	130 572
1997	44 647	31 248	24 024	9 383	12 810	3 098	1 812	2 132	25	129 179
1998	43 763	31 303	24 042	9 266	12 655	3 053	1 913	2 006	15	128 016
1999	44 438	30 101	23 919	9 184	12 686	3 056	1 823	2 129	21	127 357
					FEMALES					
1979	37 611	27 985	17 070	8 939	10 092	3 351	1 392	2 076	—	108 516
1984	38 109	29 081	19 606	9 776	10 473	3 550	1 562	2 061	—	114 218
1989	41 842	31 161	20 643	9 458	12 268	3 307	1 639	2 025	—	122 343
1994	42 790	31 070	22 430	9 458	12 271	3 347	1 808	2 229	23	125 426
1995	42 965	30 483	22 621	9 359	12 197	3 180	1 806	2 124	23	124 758
1996	42 147	29 556	23 236	9 346	11 980	3 111	1 701	2 155	30	123 262
1997	42 509	29 484	22 941	8 979	11 966	2 909	1 776	2 076	23	122 663
1998	41 736	29 189	23 004	8 960	12 062	2 925	1 728	1 976	20	121 600
1999	42 346	28 774	22 584	8 774	12 163	2 976	1 753	2 124	19	121 513
					PERSONS					
1979	77 469	57 628	35 220	18 413	20 515	6 789	2 848	4 247	—	223 129
1984	77 994	59 485	40 446	20 052	21 625	7 132	3 191	4 109	—	234 034
1989	85 790	64 002	42 071	19 610	25 051	6 813	3 379	4 137	—	250 853
1994	87 977	63 974	46 578	19 409	25 138	6 844	3 626	4 461	44	258 051
1995	87 849	62 591	46 484	19 336	25 139	6 570	3 766	4 415	40	256 190
1996	86 595	61 143	47 769	19 056	24 793	6 457	3 562	4 396	63	253 834
1997	87 156	60 732	46 965	18 362	24 776	6 007	3 588	4 208	48	251 842
1998	85 499	60 492	47 046	18 226	24 717	5 978	3 641	3 982	35	249 616
1999	86 784	58 875	46 503	17 958	24 849	6 032	3 576	4 253	40	248 870

SEX RATIO

The sex ratio is the number of male births for every 100 female births. The sex ratio at birth does not usually vary markedly. For each year over the past twenty years there have been around 5 more males born for every 100 females. The sex ratio for 1999 births was 104.8 male babies registered for every 100 female babies, the lowest level over the past twenty years. The highest sex ratio for births registered occurred in 1977 (106.2).

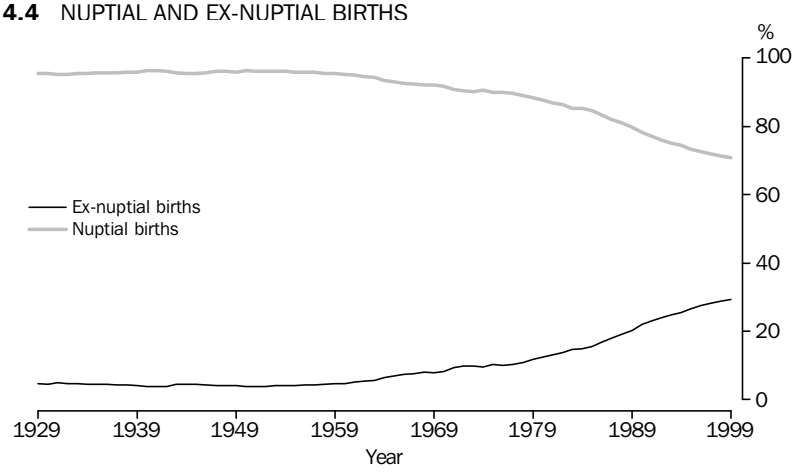
4.3 SEX RATIO AT BIRTH



NUPTIAL AND EX-NUPTIAL BIRTHS

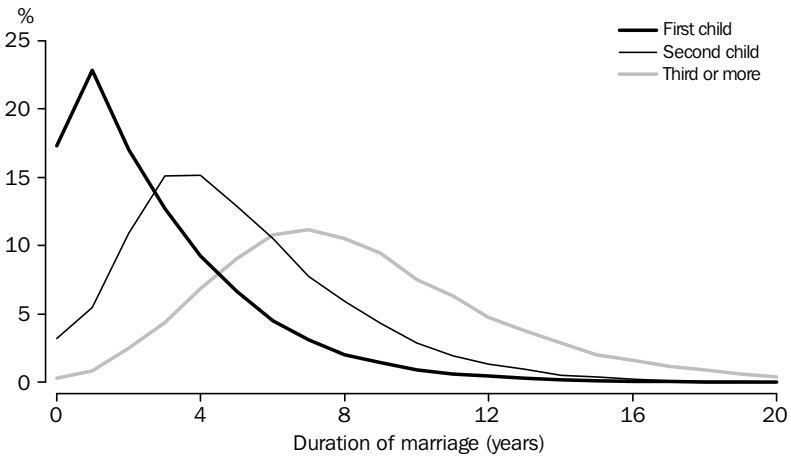
In 1999 almost three-quarters (71%) of the mothers who registered a birth were married. (Marriage in this publication refers to registered marriage unless otherwise indicated). Many of the remaining 29% of mothers may have been in de facto marriages. The proportion of ex-nuptial births has been increasing since the 1950s, with a sharp increase over the last two decades.

4.4 NUPTIAL AND EX-NUPTIAL BIRTHS



Most couples (58%) who registered the birth of the first child of their marriage during 1999 had that child within the first three years of marriage. The fourth and fifth years of marriage were the most popular time for couples having their second child, while for those having a third child, the seventh and eighth years of marriage were the most popular.

4.5 PREVIOUS CHILDREN OF THE CURRENT MARRIAGE

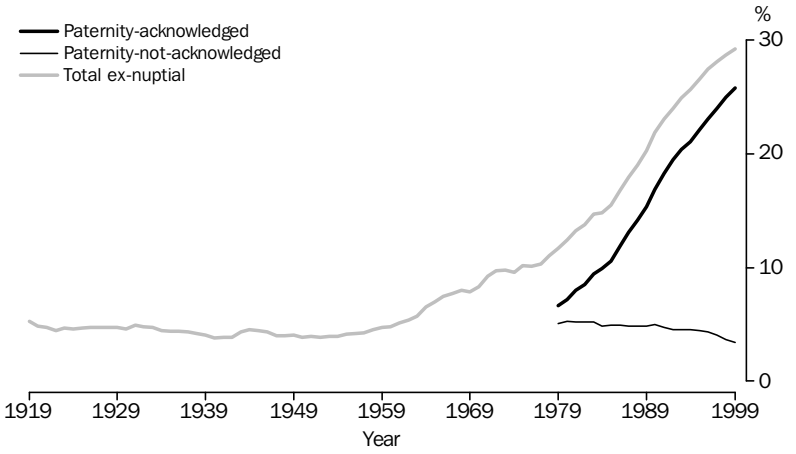


The median duration of marriage for couples having their first baby has scarcely changed over the last two decades. In 1999 the median duration of marriage for couples having a first baby was 2.6 years. This is only slightly longer than the median duration of marriage in 1979 (2.4 years).

Paternity-acknowledgment

With ex-nuptial births comes the possibility that the father does not acknowledge the birth (that is, the father has not signed the birth certificate). However, the increase in ex-nuptial births has been associated with an increase in paternity-acknowledged births. Paternity-not-acknowledged births have fallen from 5% of all births in 1979 to 3% in 1999. Although data on paternal acknowledgment has only been collected for all States and Territories since 1979, it is clear from Graph 4.6 that the rise in the number of ex-nuptial births has largely been of births where paternity was acknowledged.

4.6 EX-NUPTIAL BIRTHS



4.7 EX-NUPTIAL BIRTHS, Total and Paternity-Acknowledged

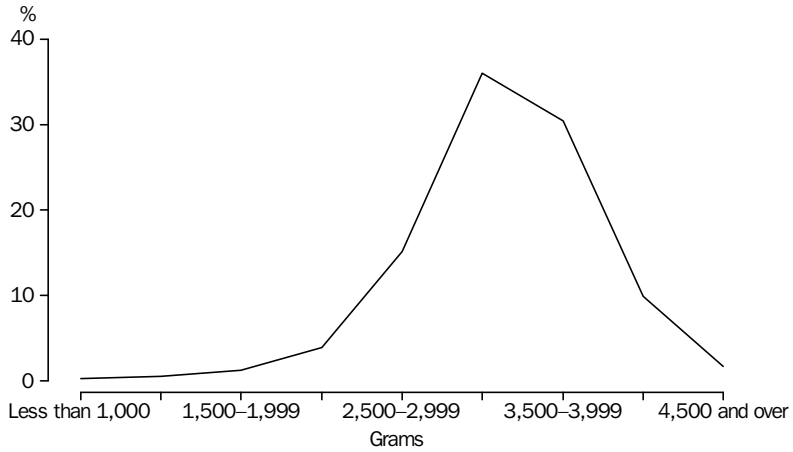
Selected years	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Other Territories	Aust.
					EX-NUPTIAL BIRTHS					
1979	9 079	5 028	5 139	2 101	2 792	937	744	290	—	**26 110**
1984	11 871	6 519	6 937	2 904	3 489	1 086	1 424	399	—	**34 629**
1989	17 345	10 134	9 886	4 115	5 415	1 505	1 745	643	—	**50 788**
1994	21 548	13 114	13 851	5 148	7 220	2 119	2 043	1 042	7	**66 092**
1995	21 910	13 629	14 255	5 295	7 475	2 189	2 153	1 135	9	**68 050**
1996	22 000	13 210	15 578	5 728	7 665	2 215	2 058	1 108	6	**69 568**
1997	23 238	13 541	15 620	5 434	7 642	2 141	2 066	1 051	5	**70 738**
1998	22 748	14 101	15 831	5 537	7 856	2 317	2 124	1 051	5	**71 570**
1999	23 596	13 769	15 626	5 596	8 391	2 416	2 144	1 147	6	**72 691**
					PATERNITY-ACKNOWLEDGED EX-NUPTIAL BIRTHS					
1979	5 502	2 732	2 700	1 247	1 531	446	479	181	—	**14 818**
1984	8 477	4 132	4 354	2 042	2 198	675	1 051	271	—	**23 200**
1989	13 596	7 907	6 869	3 172	4 170	1 179	1 173	506	—	**38 572**
1994	17 777	11 034	11 228	4 328	5 951	1 808	1 347	855	5	**54 333**
1995	18 359	11 527	11 769	4 516	6 304	1 896	1 384	925	8	**56 688**
1996	18 545	11 367	13 032	4 960	6 473	1 941	1 292	934	5	**58 549**
1997	19 958	11 853	13 145	4 787	6 490	1 876	1 423	916	4	**60 452**
1998	19 618	12 972	13 665	4 959	6 745	2 059	1 435	887	5	**62 345**
1999	20 722	12 843	13 486	5 026	7 500	2 143	1 439	979	6	**64 144**

BIRTH WEIGHT

The following analysis uses the Midwives' data with the latest data being for 1997.

Birth weight is a useful indicator of the health status of babies. The pattern of birth weight was similar between each State and Territory, with the average birth weight ranging from 3,248g in the Northern Territory to 3,360g in the Australian Capital Territory. Overall, the average birth weight was 3,356g.

4.8 BIRTH WEIGHT DISTRIBUTION

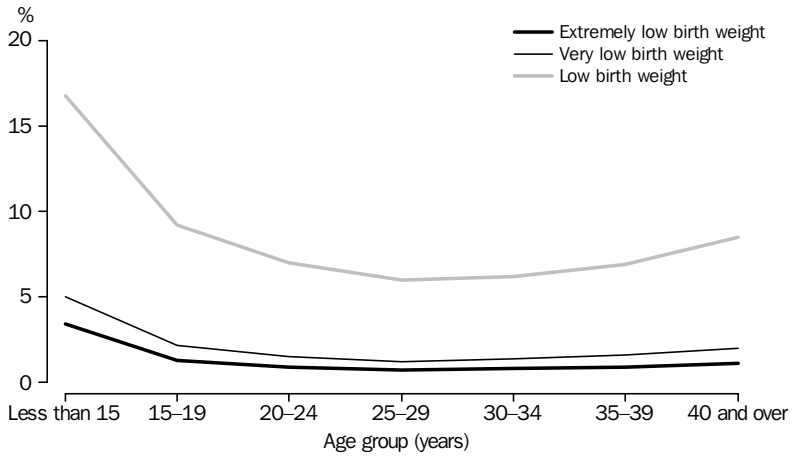


Source: *Australia's mothers and babies, 1997*, AIHW National Perinatal Statistics Unit: Perinatal Statistics Series.

BIRTHWEIGHT *continued*

About 7% of all live births with a stated birth weight were of a low birth weight (less than 2,500g), 1% were of very low birth weight (less than 1,500g) and 0.8% were of extremely low birth weight (less than 1,000g). While 6% of non-Indigenous babies were of low birth weight, 13% of Indigenous babies were, with 2% being of extremely low birth weight.

4.9 LOW BIRTH WEIGHT BABIES(a), Age of Mother



Source: *Australia's mothers and babies, 1997*, AIHW National Perinatal Statistics Unit: Perinatal Statistics Series.

(a) Less than 2,500g.

Teenage mothers have a higher risk of having a low birth weight baby, 9% of all teenage births. (See special article on Teenage Fertility on page 28). Older mothers are also more likely to have low birth weight babies, with 9% of babies born to women aged 40 and over being of low birth weight.

Twins and triplets are also more likely to have a low birth weight. Only 5% of single babies had a low birth weight compared with half of all twins, and 96% of triplets.

There is a relationship between the number of previous births a woman has and birth weight. Second (6%) and third (5%) births are least likely to be of low birth weight. First births (8%) and fourth and subsequent births (9%) are more likely to be of low birth weight. This is partly because large families are more common among low socioeconomic groups, such as Indigenous women. But it probably also reflects that having large numbers of children takes its toll on a woman's body making it more difficult to produce a subsequent healthy baby.

CHAPTER 5 CONFINEMENTS

INTRODUCTION

During 1999, 245,100 mothers registered the birth of 248,900 live babies. There were 3,740 mothers who had a multiple birth. The median age of these mothers was 29.7 years and the median age of the known fathers was 32.1 years. Nearly 39% of mothers were not in a registered marriage and for 3% the father was not known.

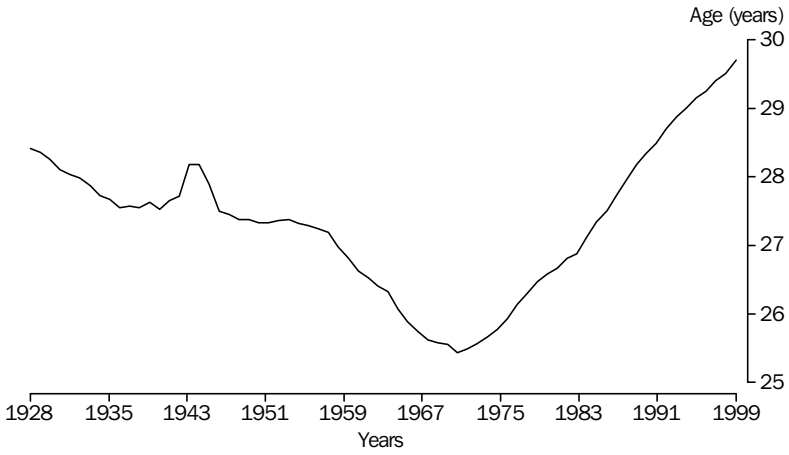
AGE OF PARENTS AT CONFINEMENT

Median age of mothers this century

Prior to the 1930s the median age of mothers giving birth had been in decline before plateauing during the 1930s and then rising during the Second World War, after which it fell substantially. The lowest median age of mothers was reached in 1971 (25.4 years). The reinterpretation of abortion law in New South Wales in 1971 was associated with a substantial fall in births to young women and an increase in the median age of mothers from 1972. Since then the median age of mothers has been increasing each year to reach the highest level so far this century (29.7 years in 1999).

As the age-specific fertility rates indicate, young women deciding not to have children or delaying having children together with the effect of second marriages and second families at later ages affect the increasing median age of mothers.

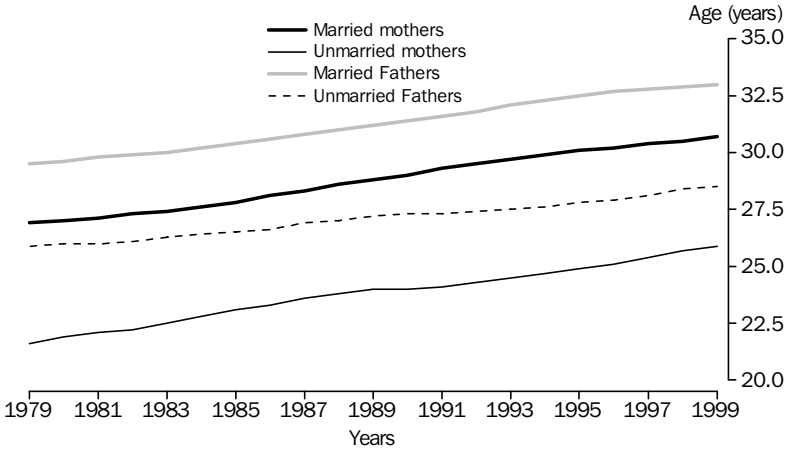
5.1 MEDIAN AGE OF MOTHERS



Nuptiality

Women who registered an ex-nuptial birth in 1999 had a median age around five years younger (25.9 years) than women who registered a nuptial birth (30.6 years). Meanwhile, the median age of mothers registering the first child of the current marriage was 29.3 years. In 1999, the median age of those women who gave birth outside of a registered marriage, where paternity was not acknowledged (24.3 years), was younger than those where paternity was acknowledged (26.1 years).

5.2 MEDIAN AGE OF PARENTS BY NUPTIALITY



Between 1979 and 1999 the median age of all mothers registering a birth in the year increased by 3.2 years. The median age of all married mothers increased by 3.8 years while that of married mothers having their first child increased by 4.3 years. These increases are not surprising given later marriages. In 1999, the median age for women at marriage was 27.9 years, up five years since 1979 (22.9 years). The median age of all unmarried mothers increased by 4.3 years, from 21.6 years in 1979 to 25.9 years in 1999.

The median age of mothers registering an ex-nuptial birth over the past decade has increased. This increase has largely been driven by an increase in ex-nuptial births to women in their twenties and thirties, often within a de facto relationship. The proportion of ex-nuptial births to teenage mothers has fallen, although the actual number has increased from 9,400 in 1979 and 10,600 in 1999. This increase is due to a decrease in the propensity of teenage mothers to marry when they became pregnant (also see Special Article: Teenage Fertility on page 28). The median age of all fathers in 1999 was 32.1 years, showing an upward trend over the past two decades. Between 1979 and 1999, the median age of married fathers increased by 3.5 years from 29.5 years to 33.0 years. The median age of unmarried fathers who acknowledged the birth of their child increased from 25.9 years in 1979 to 28.5 years in 1999.

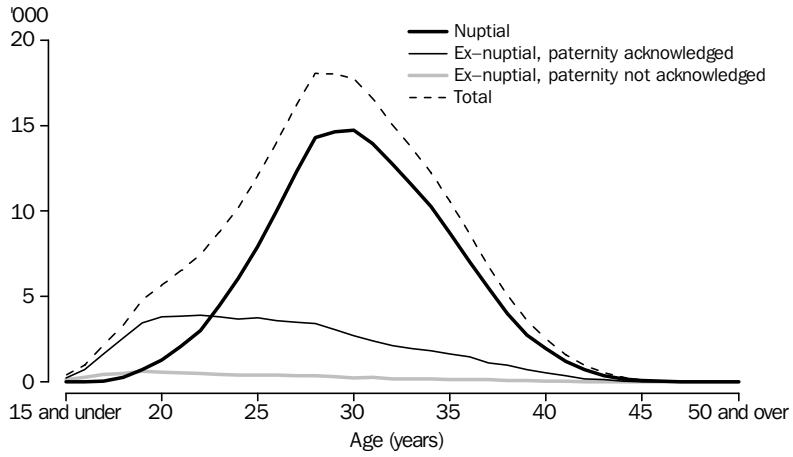
5.3 MEDIAN AGE OF PARENTS AT CONFINEMENT

	FATHERS			MOTHERS			
Selected years	*Nuptial*	*Ex-nuptial*	*Total*	*Nuptial*	*Ex-nuptial paternity acknowledged*	*Ex-nuptial paternity not acknowledged*	*Total*
1979	29.5	25.9	29.3	26.9	22.6	20.5	26.5
1984	30.2	26.3	29.9	27.6	23.3	21.7	27.1
1989	31.2	27.2	30.8	28.8	24.5	22.4	28.2
1994	32.3	27.6	31.6	29.9	24.9	23.3	29.0
1995	32.5	27.8	31.7	30.1	25.2	23.3	29.2
1996	32.7	27.9	31.9	30.2	25.3	23.7	29.3
1997	32.8	28.1	32.0	30.4	25.6	24.0	29.4
1998	32.9	28.4	32.0	30.5	25.9	24.0	29.5
1999	33.0	28.5	32.1	30.6	26.1	24.3	29.7

Peak ages

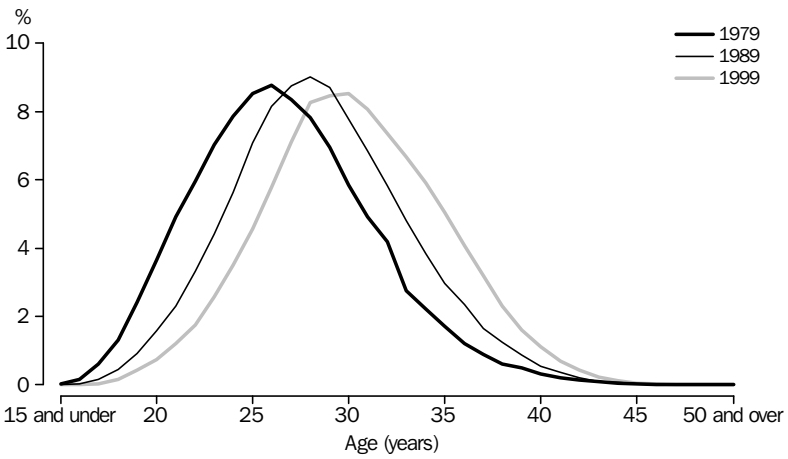
Many confinements occur to mothers aged 28–31 years and fathers aged 29–32 years. Unmarried mothers have peak ages at 20–23 years for births where the paternity was acknowledged, and 19–21 years for births where the paternity was not acknowledged.

5.4 AGE OF MOTHER, Confinements



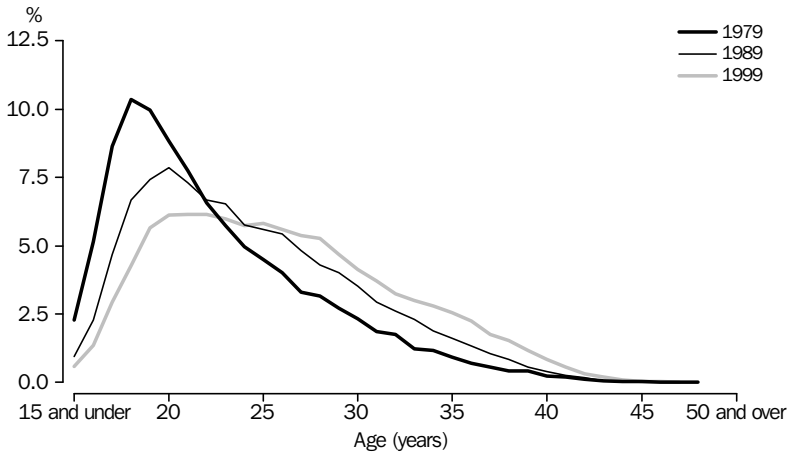
The peak ages of married mothers registering a birth in 1999 were 28–30 years. This age has increased over the last twenty years, rising from 26 years in 1979 and 28 years in 1989.

5.5 AGE OF MOTHER, Nuptial Confinements



The peak ages of mothers registering an ex-nuptial birth in 1999 were 20–23 years which rose from 18–21 years in 1979 to 19–22 years in 1989.

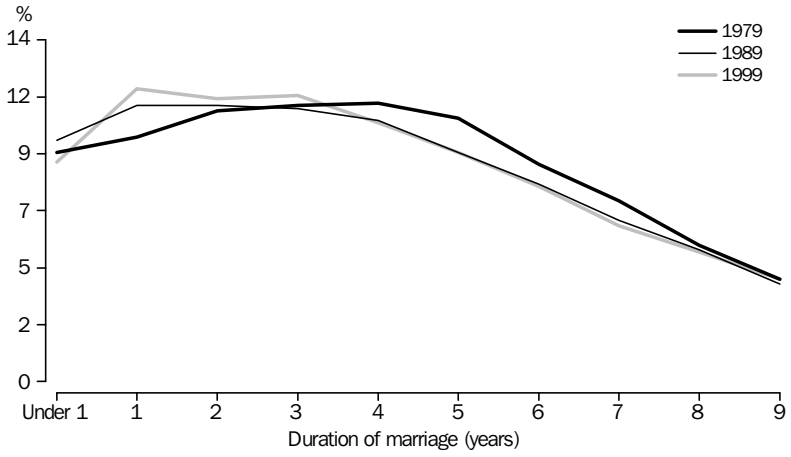
5.6 AGE OF MOTHER, Ex-nuptial Confinements



TIMING OF BIRTHS WITHIN MARRIAGE

Over half of all confinements within a marriage occur within the first four years of that marriage. In 1999, 44% of babies were born by the fourth year of marriage. This has changed little in the past twenty years, with the proportion in 1979 being 42%. However, in 1979 the fourth and fifth years of marriage were the most popular time for couples to have a baby while in 1999 the second year was the most popular.

5.7 CONFINEMENTS, Duration of Current Marriage



Timing of first baby of marriage

In 1999, 18% of married women having their first birth with their current partner did so within a year of marriage, and 13% within the first nine months. This varies considerably with age of the mother. Of teenage wives having their first baby, 71% had been married less than a year, and 60% had been married nine months or less.

Women aged 30–34 years were the least likely to have a baby within the first year of marriage, with only 13% of first nuptial babies being born in the first year, and 5% in the first seven months.

Timing of first baby of marriage *continued*

In older age groups these proportions increased. For example, 20% of women aged 40 years or over having their first birth had married in the past twelve months. These women may have felt a greater biological urgency to conceive and give birth earlier in their marriage than younger women. Mothers in their mid-twenties to mid-thirties tended to wait a little longer in their marriage before having their first child. It is probable that biological pressure was less of an issue for women in these age groups than older women.

5.8 NUPTIAL FIRST CONFINEMENTS(a)

	DURATION OF CURRENT MARRIAGE (YEARS)									
	Under 1	*1*	*2*	*3*	*4*	*5–9*	*10 and over*	*Not stated*	*Total*	*Median duration*
Selected years	no.	no.	no.	no.	no.	no.	no.	no.	no.	years
1979	17 092	15 988	12 817	9 926	7 790	12 356	905	158	77 032	2.4
1984	16 959	18 102	13 488	9 852	6 789	12 320	1 774	11	79 295	2.3
1989	17 747	18 209	13 256	9 713	7 355	12 982	2 077	18	81 357	2.4
1994	13 740	17 794	13 402	9 753	7 127	13 108	2 242		77 166	2.5
1995	13 342	17 405	13 113	9 556	6 740	13 301	2 149	—	75 606	2.5
1996	13 138	17 004	12 681	9 242	6 866	12 811	2 131	—	73 873	2.5
1997	12 805	16 919	12 573	9 257	6 646	12 902	2 254	—	73 356	2.6
1998	12 530	16 504	12 302	9 193	6 687	12 908	2 152	—	72 276	2.6
1999	13 067	16 578	12 293	9 199	6 702	12 773	2 216	—	72 828	2.6

(a) Excludes confinements to relationships with ex-nuptial births.

5.9 NUPTIAL FIRST CONFINEMENTS(a), Age of Mother

	19 and under	*20–24*	*25–29*	*30–34*	*35–39*	*40 and over*	*Total*	*Median age*
Selected years	no.	no.	no.	no.	no.	no.	no.	years
1979	6 987	31 004	28 041	8 722	1 987	290	77 032	25.1
1984	3 979	28 146	32 000	11 844	2 928	397	79 295	26.0
1989	2 528	20 492	36 274	16 758	4 567	730	81 357	27.3
1994	1 133	15 351	32 143	21 266	6 248	1 003	77 166	28.5
1995	1 039	13 934	31 689	21 296	6 539	1 090	75 606	28.6
1996	989	12 815	30 890	21 090	6 896	1 171	73 873	28.8
1997	970	11 483	30 663	21 720	7 296	1 211	73 356	29.0
1998	893	10 645	30 275	21 600	7 577	1 284	72 276	29.2
1999	866	10 139	29 872	22 577	7 956	1 413	72 828	29.3

(a) Excludes confinements to relationships with ex-nuptial births.

CONFINEMENTS RESULTING IN A MULTIPLE BIRTH

During 1999, the number of confinements resulting in multiple births continued its upward trend in Australia (3,740). There were 70% more confinements than in 1979, 18% more than in 1989 and 1.3% more than in 1998.

About 1.5% of all confinements resulted in a multiple birth registered in 1999, compared to 1.3% in 1989 and 1.0% in 1979. Married mothers had a slightly higher incidence of multiple births than unmarried mothers. The proportion of multiple births from a nuptial confinement was 1.7% while the proportion from an ex-nuptial confinement was 1.2%. Of the 3,740 multiple births registered in Australia in 1999, 2% resulted in one of the babies being stillborn.

5.10 CONFINEMENTS, Plurality—By Marital Status

	SINGLE			MULTIPLE			TOTAL		
	Nuptial	*Ex-nuptial*	*Total*	*Nuptial*	*Ex-nuptial*	*Total*	*Nuptial*	*Ex-nuptial*	*Total*
Selected years	%	%	%	%	%	%	%	%	no.
1979	87.4	11.6	99.0	0.9	0.1	1.0	88.3	11.7	220 968
1984	84.3	14.7	99.0	0.9	0.1	1.0	85.2	14.8	231 643
1989	78.6	20.1	98.7	1.1	0.2	1.3	79.7	20.3	247 623
1994	73.2	25.4	98.6	1.1	0.3	1.4	74.3	25.7	254 547
1995	72.3	26.4	98.6	1.1	0.3	1.4	73.4	26.6	252 708
1996	71.4	27.2	98.6	1.1	0.3	1.4	72.5	27.5	250 363
1997	70.7	27.9	98.6	1.1	0.3	1.4	71.8	28.2	248 246
1998	70.1	28.4	98.5	1.2	0.3	1.5	71.2	28.8	245 898
1999	69.5	29.0	98.5	1.2	0.3	1.5	70.7	29.3	245 108

5.11 CONFINEMENTS, Age of Parents

	MOTHERS				FATHERS		
Age of parent (years)	*Married*	*Ex-nuptial—paternity-acknowledged*	*Ex-nuptial—paternity-not-acknowledged*	*Total*	*Married*	*Ex-nuptial—paternity-acknowledged*	*Total*
15 and under	3	251	167	420	—	55	55
16	11	712	260	983	—	182	183
17	53	1 663	442	2 158	—	509	511
18	268	2 559	509	3 336	33	1 084	1 117
19	735	3 447	614	4 796	113	1 781	1 894
20	1 294	3 808	580	5 682	312	2 237	2 549
21	2 087	3 852	562	6 501	641	2 738	3 379
22	3 029	3 897	514	7 440	1 144	3 131	4 275
23	4 472	3 835	459	8 766	1 920	3 311	5 231
24	6 061	3 685	433	10 179	2 959	3 515	6 474
25	7 921	3 759	424	12 104	4 485	3 664	8 149
26	10 020	3 608	413	14 041	6 246	3 735	9 981
27	12 327	3 506	354	16 187	8 605	3 882	12 487
28	14 288	3 401	382	18 071	10 241	3 679	13 920
29	14 656	3 056	312	18 024	11 683	3 336	15 019
30	14 767	2 733	242	17 742	12 762	3 094	15 856
31	13 953	2 415	254	16 622	12 926	2 805	15 731
32	12 741	2 123	205	15 069	12 588	2 583	15 171
33	11 565	1 947	208	13 720	12 228	2 375	14 603
34	10 259	1 834	185	12 278	11 747	2 206	13 953
35	8 747	1 660	166	10 573	11 253	2 114	13 367
36	7 064	1 464	153	8 681	10 151	1 928	12 079
37	5 515	1 115	142	6 772	8 327	1 599	9 926
38	3 999	984	119	5 102	7 069	1 372	8 441
39	2 755	743	101	3 599	5 567	1 150	6 717
40	1 950	531	66	2 547	4 580	981	5 561
41	1 217	361	43	1 621	3 542	759	4 301
42	738	209	22	969	2 777	636	3 413
43	392	126	20	538	2 117	581	2 698
44	205	58	4	267	1 638	433	2 071
45	94	24	3	120	1 209	348	1 557
46	44	15	3	62	944	296	1 240
47	13	8	3	22	789	240	1 029
48	6	—	—-	8	558	214	772
49	5	3	—-	6	435	143	578
50	—	—	—	3	330	136	466
51	—	—	—	—	278	123	401
52	—	—	—	—	230	100	330
53	—	—	—	—	150	69	219
54	—	—	—	—	139	50	189
55–59	—	—	—	—	352	133	485
60 and over	—	—	—	—	164	51	215
Not stated	6	10	81	97	28	44	72
Total	**173 263**	**63 402**	**8 443**	**245 108**	**173 263**	**63 402**	**245 108**

5.12 NUPTIAL CONFINEMENTS, Age of Mother

Age of mother (years)	*1979*	*1984*	*1989*	*1994*	*1998*	*1999*
15 and under	17	6	5	3	—	3
16	278	139	71	19	11	11
17	1 149	516	334	54	37	53
18	2 525	1 445	899	325	283	268
19	4 668	2 886	1 784	1 069	794	735
20	7 071	4 932	3 098	1 927	1 351	1 294
21	9 547	7 346	4 572	3 202	2 151	2 087
22	11 602	10 016	6 581	4 960	3 282	3 029
23	13 645	12 677	8 690	6 964	4 789	4 472
24	15 323	14 783	11 084	8 989	6 388	6 061
25	16 612	16 281	13 975	11 035	8 530	7 921
26	17 068	17 299	16 077	12 766	11 038	10 020
27	16 265	17 221	17 272	13 934	12 979	12 327
28	15 213	16 057	17 799	15 019	14 318	14 288
29	13 541	14 776	17 178	15 883	14 998	14 656
30	11 373	12 856	15 319	15 784	14 392	14 767
31	9 576	11 178	13 503	15 002	13 691	13 953
32	8 171	9 062	11 479	13 535	12 820	12 741
33	5 354	7 320	9 490	11 805	11 440	11 565
34	4 334	5 685	7 565	9 653	10 224	10 259
35	3 332	4 372	5 862	7 628	8 629	8 747
36	2 339	3 438	4 661	5 959	6 892	7 064
37	1 715	2 500	3 259	4 532	5 233	5 515
38	1 194	1 583	2 441	3 185	3 763	3 999
39	969	1 105	1 720	2 342	2 790	2 755
40	638	725	1 058	1 516	1 832	1 950
41	407	429	695	884	1 093	1 217
42	254	317	418	577	720	738
43	168	164	193	296	384	392
44	101	84	121	135	153	205
45	47	38	47	67	75	94
46	28	27	15	35	37	44
47	13	7	10	11	18	13
48	3	5	3	3	8	6
49	3	—	3	4	—	5
50 and over	—	4	—	4	10	4
Not stated	6	4	21	56	7	6
Total	**194 547**	**197 285**	**197 300**	**189 160**	**175 162**	**173 263**

5.13 EX-NUPTIAL CONFINEMENTS, Age of Mother

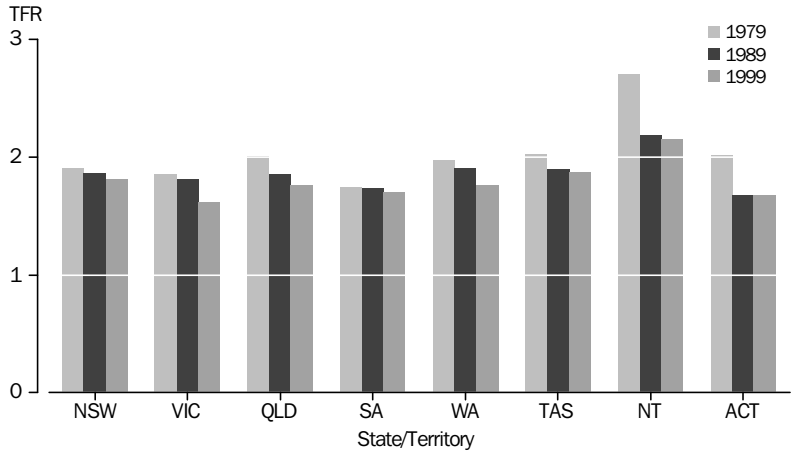
Age of mother (years)	*1979*	*1984*	*1989*	*1994*	*1998*	*1999*
15 and under	587	495	477	491	417	418
16	1 330	1 126	1 141	1 072	1 025	972
17	2 233	2 162	2 349	2 225	2 195	2 105
18	2 676	2 789	3 361	3 174	3 055	3 068
19	2 578	2 957	3 732	4 336	3 950	4 061
20	2 285	2 888	3 951	4 670	4 284	4 388
21	2 007	2 746	3 683	4 832	4 294	4 414
22	1 698	2 510	3 357	4 800	4 419	4 411
23	1 483	2 294	3 290	4 536	4 295	4 294
24	1 286	2 039	2 891	4 027	4 402	4 118
25	1 163	1 759	2 814	3 700	4 387	4 183
26	1 042	1 552	2 729	3 342	4 108	4 021
27	856	1 435	2 433	3 110	3 861	3 860
28	817	1 319	2 159	2 899	3 328	3 783
29	704	1 094	2 025	2 613	3 082	3 368
30	601	987	1 777	2 408	2 839	2 975
31	480	795	1 477	2 264	2 624	2 669
32	451	736	1 306	2 049	2 320	2 328
33	319	568	1 162	1 791	2 134	2 155
34	303	502	944	1 513	2 056	2 019
35	241	402	810	1 313	1 727	1 826
36	183	320	667	1 074	1 470	1 617
37	143	249	534	863	1 249	1 257
38	109	209	421	666	984	1 103
39	109	147	284	535	746	844
40	56	96	199	395	515	597
41	48	56	134	265	405	404
42	33	38	93	150	227	231
43	17	20	36	90	143	146
44	13	10	16	34	56	62
45	13	9	12	16	36	26
46	4	3	4	3	9	18
47	3	3	—	6	6	9
48	3	—	—	4	—	—
49	—	—	—	—	—	—
50 and over	—	—	—	—	3	—
Not stated	11	22	52	121	83	91
Total	**25 884**	**34 337**	**50 321**	**65 387**	**70 736**	**71 845**

STATE AND TERRITORY DIFFERENTIALS

Fertility

The total fertility rate in 1999 varied substantially across the States and Territories, from 1.62 births per women in Victoria to 2.15 for the Northern Territory. In 1999 New South Wales, Queensland, Western Australia, Tasmania and the Northern Territory all experienced fertility rates higher than the national level (1.75) while Victoria, South Australia and the Australian Capital Territory were all below the national level.

6.1 STATE AND TERRITORY FERTILITY RATES, Selected Years



Over the past twenty years the total fertility rate for each State and Territory has declined with the Northern Territory showing the largest decline of 21%, followed by the Australian Capital Territory (17%) and Victoria (13%). Over the past ten years, the total fertility rate for South Australia has stayed much the same while every other State and Territory continued to decline with Victoria (by 10%) and Western Australia (by 8%) declining the most.

6.2 TOTAL FERTILITY RATES

Selected years	*NSW*	*Vic.*	*Qld*	*SA*	*WA*	*Tas.*	*NT*	*ACT*	*Aust.*
1979	1.908	1.855	2.009	1.741	1.973	2.024	2.707	2.014	1.913
1984	1.799	1.792	1.983	1.810	1.847	1.999	2.325	1.829	1.844
1989	1.864	1.810	1.854	1.733	1.911	1.899	2.185	1.680	1.842
1994	1.878	1.789	1.866	1.744	1.874	1.947	2.299	1.709	1.846
1995	1.867	1.754	1.828	1.760	1.857	1.892	2.357	1.685	1.825
1996	1.827	1.707	1.851	1.756	1.811	1.890	2.201	1.670	1.797
1997	1.832	1.690	1.803	1.705	1.788	1.787	2.175	1.621	1.776
1998	1.797	1.679	1.794	1.705	1.767	1.811	2.200	1.558	1.758
1999	1.811	1.623	1.764	1.702	1.761	1.872	2.153	1.678	1.745

Fertility and age

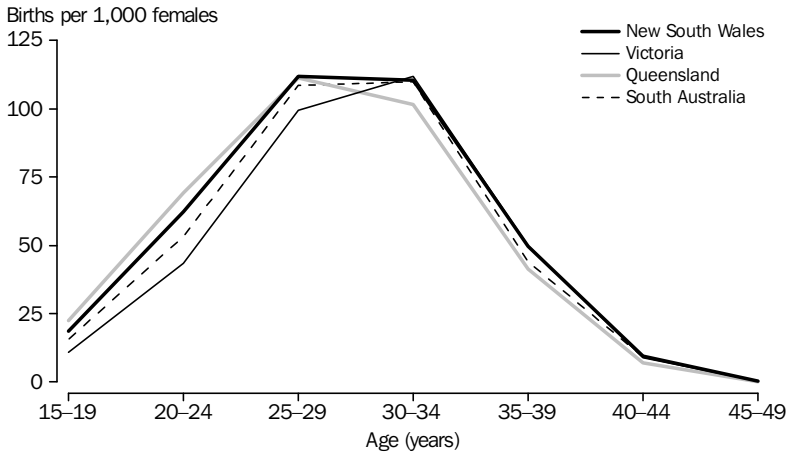
The States and Territories recorded varying levels of fertility at each age group, particularly in the younger ages. During 1999, all States and Territories, except the Northern Territory, experienced low levels of fertility in the age groups under 30 years, with Victoria and the Australian Capital Territory showing the lowest. The Northern Territory experienced the highest levels of fertility in these age groups. The age-specific fertility rate for women aged 19 years old and under in the Northern Territory (67.6 births per 1,000 women) was nearly six times higher than that of the Victoria (10.8), the lowest in Australia.

6.3 AGE-SPECIFIC FERTILITY RATES

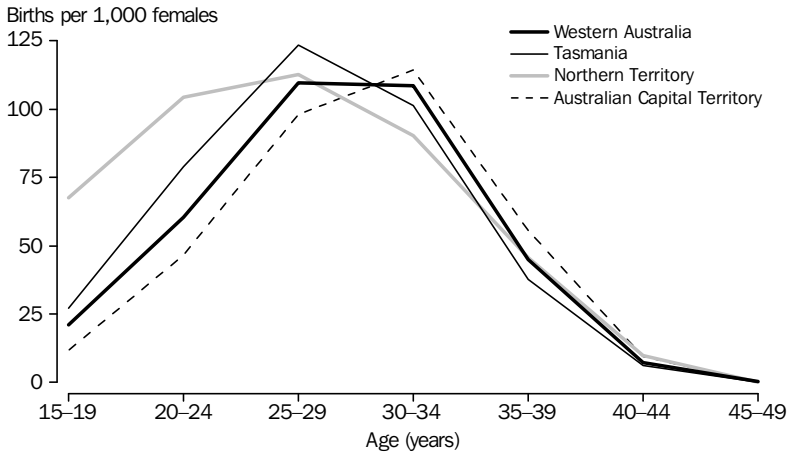
Age group (years)	*NSW*	*Vic.*	*Qld*	*SA*	*WA*	*Tas.*	*NT*	*ACT*	*Aust.*
19 and under	18.6	10.8	22.4	15.5	21.2	27.1	67.6	11.8	18.1
20–24	62.2	43.4	69.2	53.1	60.3	78.8	104.3	46.5	58.5
25–29	111.8	99.3	111.2	108.5	109.7	123.4	112.6	98.0	108.1
30–34	110.3	111.9	101.5	109.8	108.6	101.2	90.2	114.2	108.5
35–39	49.5	50.0	41.2	44.0	44.8	37.6	45.7	55.7	47.0
40–44	9.4	8.9	7.1	9.1	7.2	6.1	9.9	9.4	8.5
45 and over	0.4	0.3	0.2	0.5	0.4	0.2	0.2	0.2	0.3
Total fertility rate	**1.811**	**1.623**	**1.764**	**1.702**	**1.761**	**1.872**	**2.153**	**1.678**	**1.745**

New South Wales, Queensland and the Northern Territory all have similar levels of fertility in the 25–29 years age group. Tasmania (123.4 births per 1,000 women) had the highest fertility in the 25–29 years age group while the Australian Capital Territory had the lowest (98.0). However, the Australian Capital Territory was highest in the 30–34 years (114.2) and 35–39 years (55.7) age groups. New South Wales, the Australian Capital Territory and the Northern Territory showed the highest level of fertility in the 40–44 years age group while South Australia was the highest in the 45 years and over age group.

6.4 AGE-SPECIFIC FERTILITY RATES, States and Territories



6.5 AGE-SPECIFIC FERTILITY RATES, States and Territories



Over half (53%) of Australia's total fertility can be attributed to mothers under 30 years of age. The fertility of these women was lower than the national level in South Australia (52%) and the Australian Capital Territory (47%) and higher than the national level in all other States and Territories. The Northern Territory (66%) and Tasmania (61%) experienced the highest level of fertility for women aged under 30 years.

6.6 CONTRIBUTION OF AGE GROUPS TO THE TOTAL FERTILITY RATE: Percent

Age group (years)	*NSW*	*Vic.*	*Qld*	*SA*	*WA*	*Tas.*	*NT*	*ACT*	*Aust.*
19 and under	5.1	3.3	6.3	4.6	6.0	7.2	15.7	3.5	5.2
20–24	17.2	13.4	19.6	15.6	17.1	21.0	24.2	13.8	16.8
25–29	30.9	30.6	31.5	31.9	31.1	33.0	26.2	29.2	31.0
30–34	30.5	34.5	28.8	32.2	30.8	27.0	21.0	34.0	31.1
35–39	13.7	15.4	11.7	12.9	12.7	10.0	10.6	16.6	13.5
40 and over	2.7	2.8	2.1	2.8	2.2	1.7	2.3	2.9	2.5
Total fertility rate	**1.811**	**1.623**	**1.764**	**1.702**	**1.761**	**1.872**	**2.153**	**1.678**	**1.745**

Net reproduction rate

The female net reproduction rate is a measure of the average number of daughters a woman could expect to have if the age-specific fertility rates for a year are experienced by her in her life time.

The Northern Territory is the only State or Territory with a net reproduction rate over 1, indicating that in this Territory each woman could expect to have, on average, at least one daughter to replace herself. The fertility rates of women in the other States and Territories are not high enough for replacement. The net reproduction rate of women living in Victoria is currently the lowest in Australia (0.782), followed by South Australia (0.823) and the Australian Capital Territory (0.829).

Over the past two decades the female net reproduction rate for almost all States and Territories has declined, consistent with the decline in the total fertility rate, with the Northern Territory, the Australian Capital Territory, Victoria and Queensland experiencing the largest declines.

6.7 FEMALE NET REPRODUCTION RATE(a)

Selected years	*NSW*	*Vic.*	*Qld*	*SA*	*WA*	*Tas.*	*NT*	*ACT*	*Aust.*
1979	0.904	0.881	0.951	0.828	0.947	0.978	1.243	0.959	0.908
1984	0.862	0.861	0.944	0.868	0.876	0.976	1.099	0.895	0.883
1989	0.892	0.866	0.892	0.819	0.920	0.906	1.021	0.812	0.882
1994	0.899	0.857	0.885	0.838	0.901	0.941	1.115	0.844	0.884
1995	0.899	0.842	0.874	0.840	0.888	0.909	1.095	0.799	0.875
1996	0.878	0.815	0.887	0.852	0.864	0.901	1.025	0.808	0.861
1997	0.882	0.810	0.870	0.824	0.854	0.858	1.043	0.794	0.854
1998	0.858	0.799	0.865	0.830	0.852	0.880	1.013	0.763	0.842
1999	0.875	0.782	0.848	0.823	0.855	0.912	1.031	0.829	0.842

(a) Net reproduction rates are based on annual life tables calculated by the ABS.

Age of mother at confinement

During 1999, the Northern Territory recorded the highest proportion of young mothers aged 19 years and under (13%), compared to 5% for Australia as a whole. South Australia (3%) had the highest proportion of older mothers aged 40 years and over, compared with a national level of 2.5%.

6.8 CONFINEMENTS, Age of Mother

Age group (years)	*NSW*	*Vic.*	*Qld*	*SA*	*WA*	*Tas.*	*NT*	*ACT*	*Aust.(a)*
19 and under	3 970	1 706	2 809	757	1 389	457	470	135	11 693
20–24	13 552	7 212	8 608	2 552	4 088	1 145	810	594	38 568
25–29	27 549	18 255	14 999	5 603	7 772	1 935	1 048	1 257	78 427
30–34	25 750	19 963	12 869	5 713	7 419	1 596	764	1 346	75 431
35–39	12 380	9 168	5 642	2 517	3 286	684	366	673	34 727
40 and over	2 289	1 583	946	526	528	111	67	114	6 165
Not stated	4	4	—	7	3	3	6	69	97
Total	**85 494**	**57 891**	**45 874**	**17 675**	**24 485**	**5 931**	**3 531**	**4 188**	**245 108**

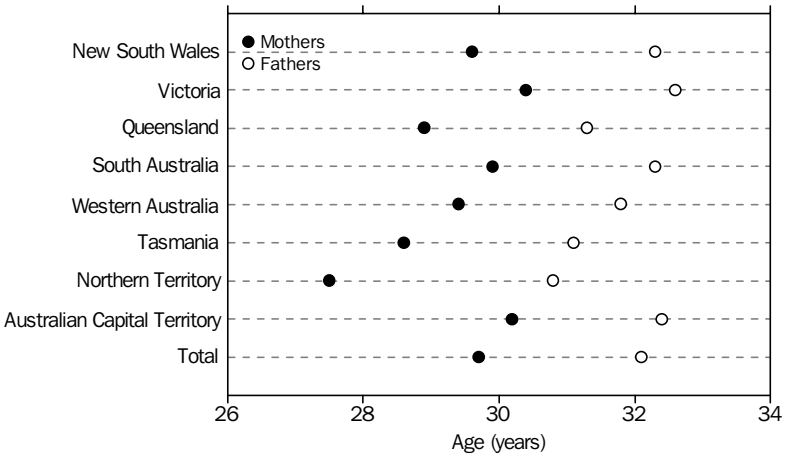
(a) Includes Other Territories.

Median age of parents at confinement

Across the States and Territories, Victoria and the Australian Capital Territory had the oldest mothers giving birth, followed by the mothers in South Australia, while the Northern Territory and Tasmania had the youngest mothers. The median age of mothers (that is where half of the mothers were younger and half were older) from Victoria and the Australian Capital Territory were 30.4 years and 30.2 years respectively compared to the national level of 29.7 years. Mothers from the Northern Territory (27.6 years) and Tasmania (28.6 years) had the lowest median age.

While the Northern Territory had the youngest mothers, the Territory also had the oldest fathers (32.9 years). Victoria also had older fathers (32.7 years), though only marginally older than most other States and Territories, while Tasmania had the youngest fathers (31.5 years).

6.9 MEDIAN AGE OF PARENTS, States and Territories



6.10 MEDIAN AGE OF PARENTS, States and Territories

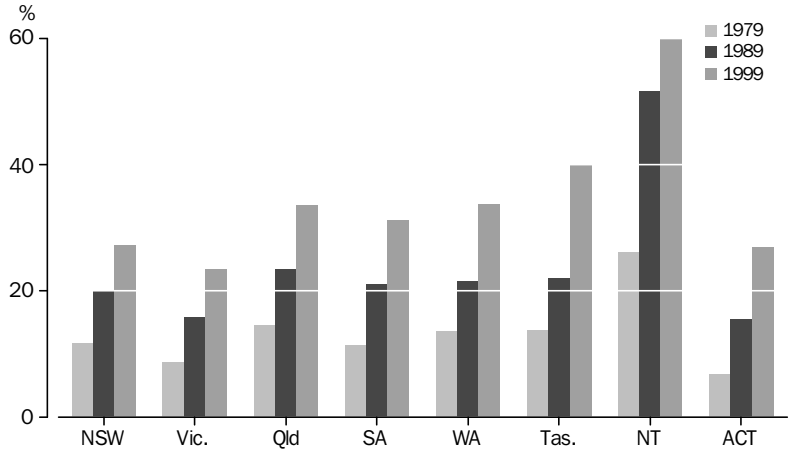
	MOTHERS			FATHERS		
State and Territory	*Nuptial*	*Ex-nuptial*	*Total*	*Nuptial*	*Ex-nuptial paternity-acknowledged*	*Total*
New South Wales	30.5	25.9	29.6	33.1	28.6	32.3
Victoria	31.0	27.0	30.4	33.2	29.4	32.6
Queensland	30.2	25.1	28.9	32.4	27.7	31.3
South Australia	30.9	26.2	29.9	33.3	28.9	32.3
Western Australia	30.6	25.8	29.4	33.0	28.2	31.8
Tasmania	30.2	24.9	28.6	32.6	27.7	31.1
Northern Territory	30.2	24.5	27.5	32.7	27.9	30.8
Australian Capital Territory	30.9	26.0	30.2	33.1	28.7	32.4
Australia	**30.6**	**25.9**	**29.7**	**33.0**	**28.5**	**32.1**

Ex-nuptial births

The proportion of ex-nuptial births differs across Australian States and Territories. New South Wales, Victoria and the Australian Capital Territory recorded proportions below the national average (29%) while the remaining States and Territory recorded proportions above. In 1999, more than half (60%) of the births registered in the Northern Territory were ex-nuptial largely associated with the Northern Territory's high Indigenous population. In comparison, 23% of births in Victoria and 40% of births in Tasmania were ex-nuptial.

The proportion of ex-nuptial births for each State and Territory has increased considerably in the last two decades. In 1979 the proportion of ex-nuptial births in the Northern Territory was 26%, while the proportions for the States and the other Territory ranged between 7% for the Australian Capital Territory and 15% for Queensland. These substantial increases in the proportion of ex-nuptial births are associated with the increase, over the same period, in de facto relationships.

6.11 EX-NUPTIAL BIRTHS, State and Territory



CONFINEMENTS RESULTING IN A MULTIPLE BIRTH

Mothers from Victoria and South Australia had the highest incidence of multiple births in 1999, while Queensland and the Northern Territory had the lowest. Until 1999 the Northern Territory was the only State or Territory to show a decline in the proportion of multiple births over the past few years, declining from 1.4% in 1995 to return to the 1988 level of 1.0% in 1998 before increasing in 1999 to 1.3%.

6.12 CONFINEMENTS RESULTING IN A MULTIPLE BIRTH, By State and Territory

Selected years	*NSW*	*Vic.*	*Qld*	*SA*	*WA*	*Tas.*	*NT*	*ACT*	*All mothers*
					NUMBER				
1979	812	579	288	189	198	68	19	41	2 194
1984	889	598	377	152	231	58	32	58	2 395
1989	1 095	797	508	252	338	85	34	62	3 171
1994	1 189	894	624	272	343	76	48	45	3 492
1995	1 151	902	579	284	344	87	52	60	3 459
1996	1 110	847	634	300	351	98	42	67	3 449
1997	1 178	916	676	261	367	74	35	48	3 557
1998	1 218	945	678	293	369	88	35	64	3 690
1999	1 288	979	617	288	355	99	46	65	3 738
					PERCENT				
1979	1.06	1.01	0.82	1.04	0.97	1.01	0.67	0.97	0.99
1984	1.15	1.02	0.94	0.76	1.08	0.82	1.01	1.43	1.03
1989	1.29	1.26	1.22	1.30	1.37	1.26	1.02	1.52	1.28
1994	1.37	1.42	1.36	1.42	1.38	1.12	1.34	1.02	1.37
1995	1.33	1.46	1.26	1.49	1.39	1.34	1.40	1.38	1.37
1996	1.30	1.40	1.35	1.60	1.44	1.54	1.19	1.55	1.38
1997	1.37	1.53	1.46	1.44	1.50	1.25	0.99	1.15	1.43
1998	1.45	1.59	1.46	1.63	1.52	1.49	0.97	1.63	1.50
1999	1.51	1.69	1.34	1.63	1.45	1.67	1.30	1.55	1.53

REGIONAL DIFFERENTIALS

Capital cities and State/Territory balances

The total fertility rate of capital cities is much lower than that of their respective State/Territory balances. Factors influencing the lower fertility rate of city women include their easier access to medical technology and information and their career. For most States and both Territories, the median age of mothers is slightly higher in the cities than in the rest of the State/Territory. In Queensland and South Australia, the median age of mothers in the capital city is slightly lower than the Statistical Divisions (SD) on the outskirts of the city.

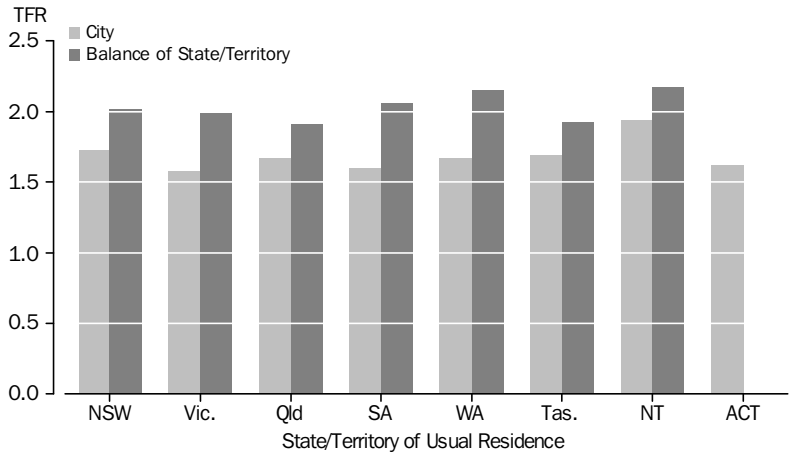
Of all the capital cities, Melbourne had the lowest fertility rate (averaged over 1997, 1998 and 1999) followed by Adelaide, Canberra, Perth and Brisbane. Previously, Canberra experienced the lowest fertility rate (averaged over 1996, 1997 and 1998) followed by Melbourne. However, Canberra's fertility rate increased by 1% (from 1.597 to 1.618), caused by an increase in the number of births registered in the Territory (increasing by 7%) and a decline in the estimated resident female population aged 15–49 years (declining by 0.8%).

Melbourne, Canberra and Adelaide had the highest median age of mother while Hobart and Darwin had the lowest. Of the balance of State/Territory regions, the Wimmera and Loddon-Campaspe regions of Victoria experienced the highest median age of mother (each at 29.9 years). All the Victorian balance of State regions also experienced high median age of mothers, with all regions above 29 years. The Northern Territory balance experienced the lowest median age of mother at 26.2 years.

The South West and North West regions in Queensland had the highest fertility rate, the Kimberley region in Western Australia had the highest proportion of ex-nuptial births, including the highest proportion of paternity-not-acknowledged births, and one of the lowest median age of mother (27.4 years). The Northern Territory balance had the highest proportion of ex-nuptial births (73%) and the lowest median age of mother (26.2 years).

Of all the capital cities, Darwin had the highest proportion of ex-nuptial births (42%) while Melbourne had the lowest (21%).

6.13 TOTAL FERTILITY RATE, City and Balance of State/Territory



6.14 REGIONAL PATTERNS OF FERTILITY

EX-NUPTIAL BIRTHS....

Statistical Division(c)	Births	Total fertility(a)	SEIFA–Disadvantage(b)	SEIFA–Education/Occupation(b)	Median age of mother	Nuptial births	Paternity-acknowledged	Paternity-not-acknowledged
	no.	rate	index	index	years	%	%	%
New South Wales								
Capital City								
Sydney	56 386	1.728	1 027	1 039	30.2	77.7	19.4	2.9
Balance of State								
Hunter	7 216	1.857	970	963	28.6	64.8	31.4	3.8
Illawarra	4 960	1.926	979	982	28.8	68.8	27.5	3.8
Richmond-Tweed	2 417	2.013	960	965	29.2	57.4	37.6	5.0
Mid-North Coast	2 988	2.111	947	949	28.5	58.4	36.6	5.0
Northern	2 337	2.125	978	975	28.0	62.7	33.8	3.5
North Western	1 723	2.288	952	954	28.4	57.6	36.6	5.7
Central West	2 328	2.136	982	967	28.2	64.5	31.4	4.1
South Eastern	2 252	2.091	1 004	988	28.9	62.8	33.4	3.8
Murrumbidgee	2 179	2.168	989	967	28.6	67.1	29.5	3.4
Murray	1 408	2.096	994	969	29.0	68.5	28.9	2.6
Far West	280	1.978	919	929	27.2	45.4	49.6	5.0
Total	*30 398*	*2.014*	*973*	*968*	*28.6*	*63.7*	*32.2*	*4.1*
Total(d)	*86 784*	*1.816*	*1 007*	*1 012*	*29.6*	*72.8*	*23.9*	*3.3*
Victoria								
Capital City								
Melbourne	42 979	1.578	1 025	1 028	30.7	78.9	19.5	1.6
Balance of State								
Barwon	2 911	1.819	995	983	30.0	72.2	26.7	1.1
Weston Districts	1 209	2.079	1 001	969	29.4	73.4	25.0	1.7
Central Highlands	1 676	1.886	989	985	29.4	69.1	29.3	1.6
Wimmera	593	2.014	1 006	971	29.9	75.5	22.8	1.7
Mallee	1 203	2.284	983	955	29.1	71.5	27.0	1.5
Loddon-Campaspe	1 973	1.931	998	988	29.9	69.2	28.8	1.9
Goulburn	2 488	2.191	992	963	29.2	71.2	27.5	1.3
Ovens-Murray	1 117	1.990	1 007	986	29.4	69.9	28.3	1.8
East Gippsland	860	2.033	985	972	29.1	63.6	34.0	2.4
Gippsland	1 854	1.982	983	969	29.0	68.0	30.5	1.5
Total	*15 896*	*1.988*	*993*	*975*	*29.5*	*70.4*	*28.0*	*1.6*
Total(d)	*58 875*	*1.665*	*1 016*	*1 013*	*30.4*	*76.6*	*21.8*	*1.6*
Queensland								
Capital City								
Brisbane	21 139	1.669	1 010	1 004	29.4	70.3	25.7	4.0
Balance of State								
Moreton	7 853	1.676	979	964	29.5	65.1	30.6	4.3
Wide Bay-Burnett	2 718	2.113	926	908	27.9	60.7	34.3	5.1
Darling Downs	2 875	2.102	982	955	28.2	69.6	26.5	3.9
South West	470	2.536	960	936	28.2	59.8	35.3	4.9
Fitzroy	2 653	2.059	972	944	28.2	64.5	30.5	5.0
Central West	185	2.160	969	935	28.8	64.9	30.8	4.3
Mackay	1 853	1.955	984	935	28.3	65.5	30.0	4.6
Northern	2 749	1.905	981	959	28.1	62.5	32.0	5.5
Far North	3 189	1.910	978	969	28.5	54.8	37.7	7.5
North West	708	2.467	940	929	27.8	52.5	37.1	10.3
Total	*25 364*	*1.906*	*971*	*951*	*28.6*	*63.1*	*31.7*	*5.1*
Total(d)	*46 503*	*1.789*	*988*	*975*	*28.9*	*66.4*	*29.0*	*4.6*

(a) Average total fertility rate over 1997, 1998 and 1999.

(b) Socioeconomic Indexes for Areas, 1996 Census of Population and Housing.

(c) Latest data on 1998 ASGC boundaries.

(d) The difference between the number of births for the State and the total over the Statistical sub divisions is mainly due to some events, registered in the State, occurring to overseas usual residents.

6.14 REGIONAL PATTERNS OF FERTILITY *continued*

EX-NUPTIAL BIRTHS....

Statistical Division(c)	Births	Total fertility(a)	SEIFA–Disadvantage(b)	SEIFA–Education/Occupation(b)	Median age of mother	Nuptial births	Paternity-acknowledged	Paternity-not-acknowledged
	no.	rate	index	index	years	%	%	%
South Australia								
Capital City								
Adelaide	12 767	1.603	991	999	30.3	69.9	26.8	3.3
Balance of State								
Outer Adelaide	1 304	1.887	1 002	967	30.4	71.9	25.5	2.5
Yorke and Lower North	466	2.179	958	926	29.7	73.6	24.5	1.9
Murray Lands	863	2.108	939	904	28.8	66.0	31.5	2.4
South East	905	2.057	977	926	28.9	68.1	29.3	2.7
Eyre	488	2.387	964	945	28.9	63.1	34.8	2.0
Northern	1 147	2.061	926	934	28.3	56.2	39.4	4.4
Total	*5 191*	*2.059*	*963*	*936*	*29.2*	*66.2*	*31.0*	*2.9*
Total(d)	*17 958*	*1.704*	*984*	*983*	*29.9*	*68.8*	*28.0*	*3.2*
Western Australia								
Capital City								
Perth	17 393	1.665	1 020	1 012	29.9	70.0	26.9	3.2
Balance of State								
South West	2 378	2.029	965	924	28.5	59.1	37.3	3.5
Lower Great Southern	749	2.309	982	948	28.8	63.2	34.7	2.1
Upper Great Southern	296	2.373	1 005	942	29.2	71.3	25.3	3.4
Midlands	742	2.302	980	932	29.0	68.3	29.5	2.2
South Eastern	1 072	2.233	981	945	28.4	58.4	38.3	3.3
Central	928	2.144	960	940	28.3	52.4	41.3	6.4
Pilbara	751	2.099	995	960	28.3	55.5	39.4	5.1
Kimberley	520	2.296	913	967	27.4	28.3	56.7	15.0
Total	*7 456*	*2.1*	*970*	*939*	*28.5*	*57.5*	*37.9*	*4.5*
Total(d)	*24 849*	*1.775*	*1 006*	*991*	*29.4*	*66.2*	*30.2*	*3.6*
Tasmania								
Capital City								
Greater Hobart	2 472	1.685	1 001	1 009	29.0	59.5	35.9	4.6
Balance of State								
Southern	465	2.217	942	914	29.1	54.8	42.4	2.8
Northern	1 717	1.824	966	954	28.5	61.4	34.2	4.4
Mersey-Lyell	1 345	1.989	945	926	28.0	60.8	34.4	4.8
Total	*3 560*	*1.925*	*955*	*938*	*28.4*	*60.3*	*35.3*	*4.5*
Total(d)	*6 032*	*1.823*	*974*	*967*	*28.6*	*59.9*	*35.5*	*4.5*
Northern Territory								
Capital City								
Darwin	1 476	1.941	1 027	1 046	29.1	58.3	34.8	6.9
Balance of State								
Northern Territory - Bal	2 085	2.358	909	969	26.2	27.2	44.1	28.7
Total(d)	*3 576*	*2.176*	*962*	*1 004*	*27.5*	*40.0*	*40.2*	*19.7*
Australian Capital Territory								
Capital City								
Canberra	4 242	1.618	1 091	1 121	30.2	73.1	23.0	3.9
Total(d)	*4 253*	*1.621*	*1 091*	*1 121*	*30.2*	*73.0*	*23.0*	*4.0*
Australia	**248 870**	**1.762**	**1 000**	**1 000**	**29.7**	**70.8**	**25.8**	**3.4**

(a) Average total fertility rate over 1997, 1998 and 1999.

(b) Socioeconomic Indexes for Areas, 1996 Census of Population and Housing.

(c) Latest data on 1998 ASGC boundaries.

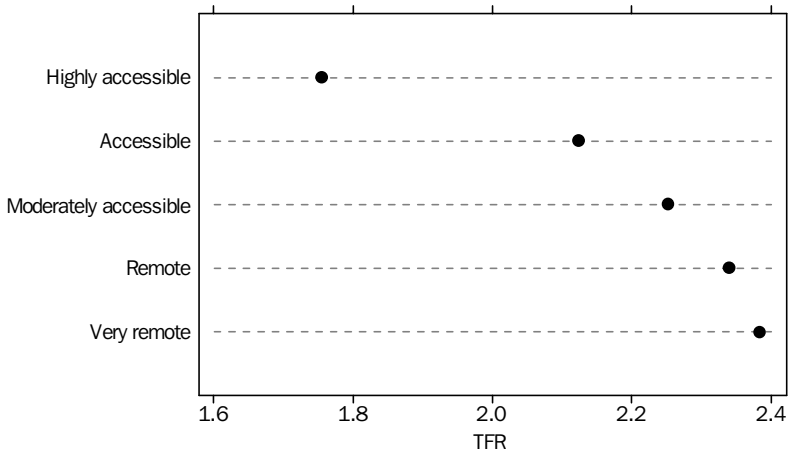
(d) The difference between the number of births for the State and the total over the Statistical Divisions is mainly due to some births, registered in the State, occurring to overseas usual residents.

Accessibility and remoteness of areas and fertility

Fertility levels differ according to Accessibility/Remoteness Index of Australia (ARIA) regions.[1] ARIA measures the remoteness of regions in terms of access to a range of goods and services and how far one has to travel to centres of various sizes.[2] There are five ARIA regions. (See Explanatory Notes on page 98).

Aggregated fertility rates for ARIA regions show that the accessibility and remoteness of areas have a substantial impact on the fertility of women. Women in highly accessible areas have substantially lower fertility rates (1.76) than women in remote areas (2.12 to 2.38), while women in very remote areas have fertility rates close to 2.4 babies per woman. This may be due to the difficult or limited access women living in these remote areas have in obtaining or receiving medical supplies, medical procedures and sexual education.

6.15 TOTAL FERTILITY RATE, ARIA Regions



Fertility levels at specific age groups in ARIA regions

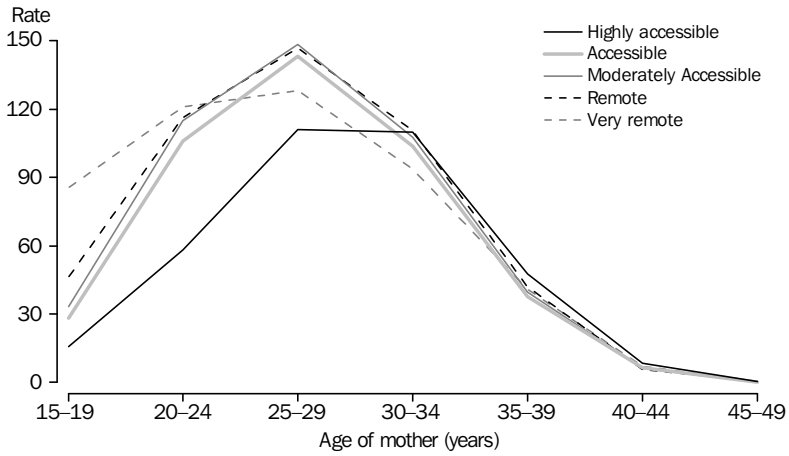
The age-specific fertility rates of women also vary depending on the remoteness of where women live. In the very remote areas of Australia, many areas have a large Indigenous population where women experience much higher fertility rates at younger ages than those in the highly accessible areas. In very remote areas women aged 15–19 years had an estimated 85.4 babies per 1,000 women compared to 15.6 babies per 1,000 women in the highly accessible areas. Women in the four ARIA regions of accessible, moderately accessible, remote and very remote, have the highest rate in the 25–29 year age group. The age-specific fertility rates of women in the highly accessible region show the trend towards older mothers. Women in this region have the highest rate in the 35–39 years age groups.

---

[1] ARIA regions were developed by the National Key Centre for Social Applications of Geographical Information Systems, funded by the Department of Health and Aged Care.

[2] Occasional Papers Series No. 6, *Accessibility/Remoteness Index of Australia (ARIA),* The University of Adelaide.

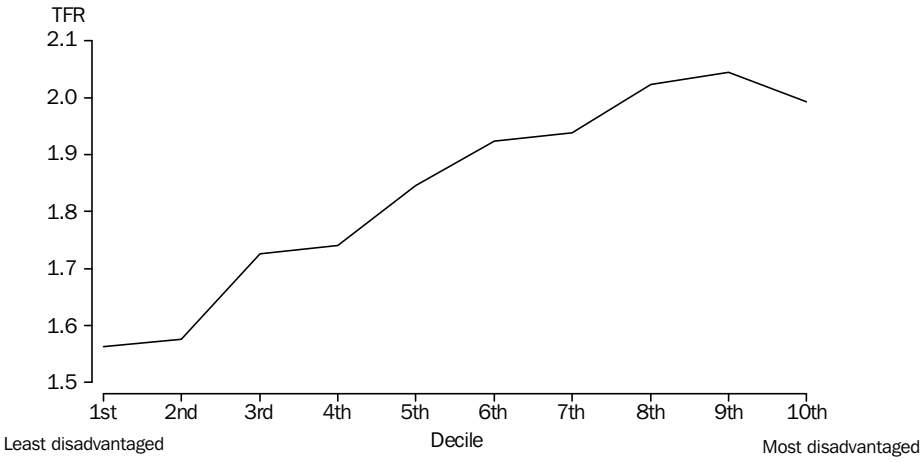
6.16 AGE–SPECIFIC FERTILITY RATES, ARIA Regions



Socioeconomic conditions and fertility

A comparison of the total fertility rate for each SLA in Australia to the Socioeconomic Indexes For Areas (SEIFA)[1] level of disadvantage for that region, and the grouping of these regions into ten equal groups (deciles), shows that disadvantaged regions tend to have higher fertility rates than less disadvantaged regions. The more disadvantaged deciles also have the highest proportion of very remote regions. For example the SLAs in the tenth decile of disadvantage, that is, the most disadvantaged regions, have the highest proportion of very remote regions (21%) and the lowest proportion of regions specified as highly accessible (41%). Whereas the SLAs in the least disadvantaged decile (first decile) have no regions classified as very remote and 94% classified as highly accessible.

6.17 TOTAL FERTILITY RATE, Deciles of Disadvantage



[1] For more information see *Information Paper: Census of Population and Housing—Socioeconomic Indexes for Areas*, 1996 (Cat. no. 2039.0).

COUNTRY OF BIRTH OF PARENTS

Australian-born women

An estimated 83% of Australia-born women, who registered a birth in 1999, partnered with Australian-born men. Of the other 17%, the most popular country of birth of the father were the United Kingdom (5%), New Zealand (2%), Lebanon (1%) and Italy (1%).

The total fertility rate (TFR) of Australian-born women was 1.74 babies per woman, marginally lower than the rate for all women (1.75). In 1999, the median age of Australian-born mothers was 29.2 years, again marginally lower than for all mothers (29.7 years). The median age at childbearing of overseas-born mothers was much higher (31.2 years).

Overseas-born women

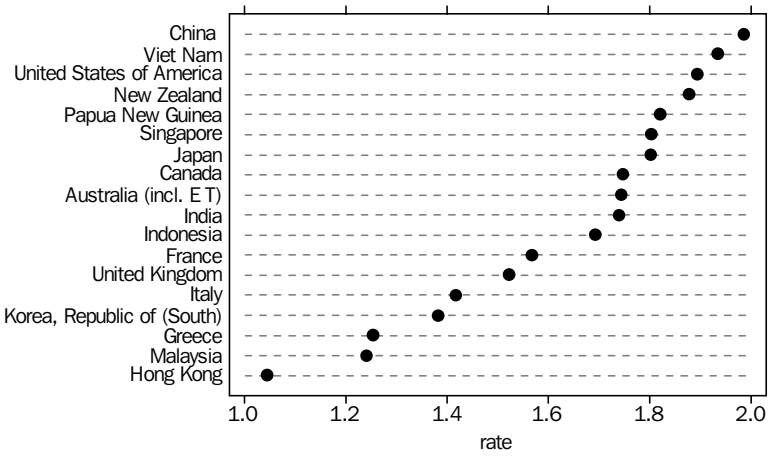
In 1999, overseas-born women had a total fertility rate (TFR) of 1.74 babies per woman, much the same as Australian-born women. However, this masks considerable variation between birthplace groups. For example, Lebanon-born women in Australia had a TFR of 3.45, while Malaysia-born women in Australia had a TFR of only 1.24.

No other major birthplace group in Australia had a TFR as high as the Lebanon-born. However, there were relatively high rates among the Egypt-born (2.63), the Turkey-born (2.52), the Cambodia-born (2.29) and the Fiji-born (1.99) women.

Like Malaysia, many of the birthplace groups with very low TFRs were from Southeast and Northeast Asia: for example, women born in the Republic of South Korea (1.38) or Thailand (1.58). One factor keeping the fertility low for some of these groups was the high proportion of students among their populations. Overseas students on temporary visas could be expected to have very low fertility, and therefore to bring the TFR for the whole birthplace group down considerably. For example, the Malaysia-born women experienced a TFR 29% lower than the TFR for all women. While the age-specific fertility rates for Malaysian women aged 30 years and over were relatively similar to that of all women, rates for 20–24 year olds (4.9) were only 8% of the national average (58.7). Similar patterns were seen among women born in Singapore, Korea (and Japan.

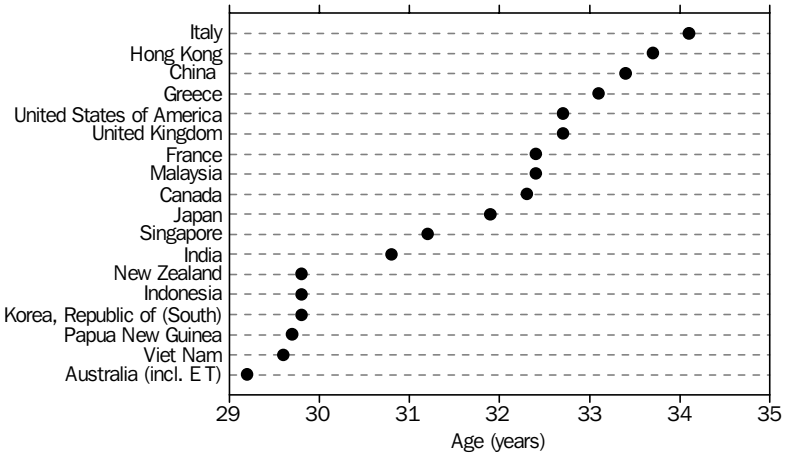
Hong Kong-born (1.05), Poland-born (1.24) and Greek-born (1.26) women all had low TFRs, except for the Poland-born, they also had the highest median age at childbearing of any birthplace group in Australia of 33.7 years for Hong Kong-born and 33.1 years for Greek-born. Australian-born mothers were some of the youngest (29.2 years).

6.18 TOTAL FERTILITY RATE, Selected Countries of Birth of Mother



Women born in Central America and Cambodia were the youngest mothers with a median age of 28.1 years and 28.3 years respectively. Followed by Laos-born mothers with a median age of 28.4 years, Pakistan-born mothers with a median age of 28.6 years and Romania-born, Lebanon-born and Turkey-born mothers all with a median age of 28.7 years.

6.19 MEDIAN AGE OF MOTHER, Selected Countries of Birth



Australian-born men

An estimated 88% of Australian-born men, who fathered a baby registered in 1999, partnered with Australian-born women. Of the other 12%, the most popular country of birth of the mother were the United Kingdom (4%), New Zealand (2%) and the Philippines (1%).

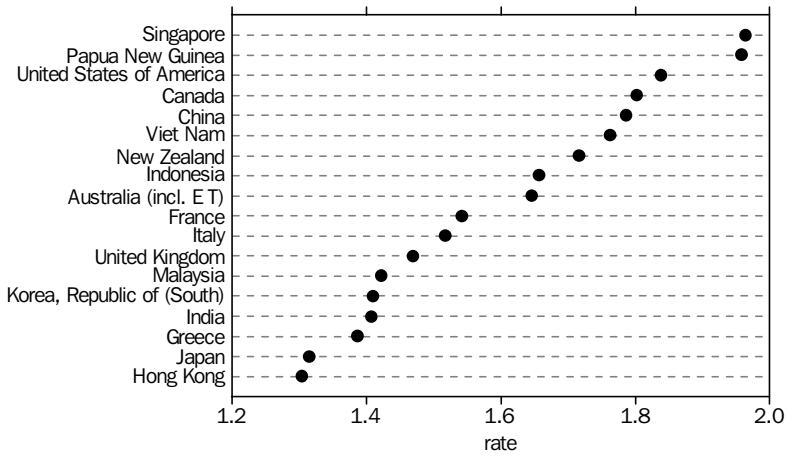
The paternity acknowledged TFR of the Australian-born men was estimated at 1.65 babies per man, marginally lower than the rate for all men (1.67). In 1999, the median age of Australian-born fathers was 31.4 years, again marginally lower than for all fathers (32.1 years). The median age of overseas-born fathers was much higher (34.1 years).

Overseas-born men

In 1999, overseas-born men had a paternity acknowledged TFR of 1.67 babies per man, slightly higher than Australian-born men. However, this masks considerable variation between birthplace groups. For example, Lebanon-born men in Australia had a paternity acknowledged TFR of 3.72, while Thailand-born men in Australia had a rate of only 1.17.

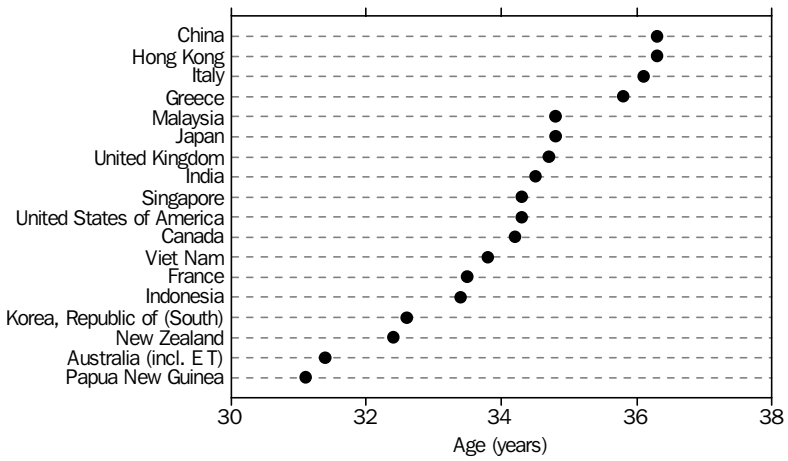
No other major birthplace group in Australia had a paternity acknowledged TFR as high as the Lebanon-born. However, there were relatively high rates among the Turkey-born (2.52) and the Egypt-born (2.51) fathers.

6.20 PATERNITY ACKNOWLEDGED TFR, Selected Countries of Birth of Father



The median age of fathers was slightly higher than that of mothers (32.1 years for men compared to 29.7 years for women). Men born in Hungary, Egypt and Malta were the oldest fathers with a median age of 37.3 years, 36.9 years and 36.5 years respectively. The youngest fathers were those born in Central America (30.1 years), Papua New Guinea (31.1 years) and Australia (31.4 years).

6.21 MEDIAN AGE OF FATHERS, Selected Countries of Birth



6.22 BIRTHPLACE OF MOTHER, Summary

		FATHER BORN IN(a).....							
	Total confinements	*Australia*	*Same country as mother*	*Other country*	*Married mothers*	*Unmarried mothers—paternity-acknowledged*	*Unmarried mothers—paternity-not-acknowledged*	*Total fertility*	*Median age of mothers*
Birthplace of mother	no.	%	%	%	%	%	%	rate	years
Oceania and Antarctica									
Australia (incl. E T)	187 165	83.1	—	16.9	67.7	28.6	3.6	1.744	29.2
Fiji	932	17.3	64.7	18.0	85.0	12.8	2.3	1.990	28.9
New Zealand	6 569	51.6	28.2	20.2	58.4	36.6	5.1	1.877	29.8
Papua New Guinea	738	67.1	10.7	22.2	72.1	24.9	3.0	1.822	29.7
Other	1 378	9.9	68.6	21.5	71.2	23.1	5.7	3.086	30.5
Total	*196 782*	*81.2*	*1.8*	*17.1*	*67.6*	*28.8*	*3.7*	*1.754*	*29.2*
North-West Europe									
Austria	102	53.9	10.8	35.3	78.4	15.7	5.9	1.539	31.7
Denmark	131	63.4	14.5	22.1	77.9	19.8	2.3	1.902	31.7
France	272	50.0	17.6	32.4	79.4	20.2	0.4	1.567	32.4
Germany	762	60.8	11.9	27.3	76.2	22.6	1.2	1.662	32.4
Ireland	606	47.2	28.5	24.3	88.3	11.1	0.7	1.409	33.7
Netherlands	387	67.7	10.9	21.4	78.8	20.2	1.0	1.589	32.5
Switzerland	162	55.6	25.9	18.5	82.7	16.0	1.2	1.975	32.7
United Kingdom	10 731	64.0	22.5	13.5	75.6	22.6	1.8	1.523	32.7
Other	330	62.7	11.5	25.8	75.5	21.8	2.7	n.a.	32.4
Total	*13 483*	*62.7*	*21.3*	*16.0*	*76.5*	*21.8*	*1.7*	*n.a.*	*32.7*
Southern and Eastern Europe									
Bosnia and Herzegovina	404	8.4	86.4	5.2	91.1	8.4	0.5	n.a.	30.6
Croatia	418	37.3	50.5	12.2	90.0	9.3	0.7	n.a.	32.0
Cyprus	202	38.1	41.1	20.8	96.0	4.0	0.0	1.562	31.5
Former Yugoslav Republic of Macedonia (FYROM)	522	25.9	63.4	10.7	92.1	7.5	0.4	n.a.	28.9
Greece	412	58.7	25.2	16.0	91.7	7.5	0.7	1.255	33.1
Hungary	89	34.8	43.8	21.3	78.7	21.3	0.0	1.305	31.1
Italy	647	63.4	17.8	18.9	89.6	9.4	0.9	1.416	34.1
Malta	169	58.0	16.6	25.4	82.8	15.4	1.8	1.496	32.9
Poland	363	33.6	52.9	13.5	84.8	14.3	0.8	1.235	30.6
Portugal	204	31.4	47.1	21.6	86.3	12.7	1.0	1.663	30.7
Romania	166	16.9	64.5	18.7	81.3	15.7	3.0	1.462	28.7
Russian Federation	182	27.5	41.8	30.8	90.1	8.2	1.6	n.a.	30.1
Spain	147	59.9	5.4	34.7	78.2	20.4	1.4	1.848	31.8
Yugoslavia, Federal Republic of	445	28.3	58.7	13.0	87.2	10.6	2.2	n.a.	31.0
Other	364	32.7	37.6	29.7	83.5	14.3	2.2	n.a.	30.0
Total	*4 734*	*37.6*	*45.1*	*17.3*	*88.2*	*10.7*	*1.1*	*n.a.*	*31.3*
North Africa and the Middle East									
Egypt	378	13.8	76.2	10.1	96.0	3.7	0.3	2.629	31.6
Iran	237	9.3	78.1	12.7	94.1	5.1	0.8	1.393	31.3
Israel	111	40.5	34.2	25.2	93.7	6.3	0.0	1.832	30.3
Lebanon	2 415	15.3	75.2	9.5	94.9	4.6	0.5	3.454	28.7
Syria	253	7.9	49.8	42.3	95.7	4.3	0.0	n.a.	29.7
Turkey	791	12.5	80.0	7.5	94.6	4.9	0.5	2.521	28.7
Other	1 132	5.5	77.1	17.4	94.1	4.9	1.0	2.626	29.0
Total	*5 317*	*12.6*	*74.5*	*12.9*	*94.7*	*4.7*	*0.5*	*2.858*	*29.1*

(a) Paternity-acknowledged births only.

6.22 BIRTHPLACE OF MOTHER, Summary *continued*

		FATHER BORN IN(a).....							
Birthplace of mother	*Total confinements* no.	*Australia* %	*Same country as mother* %	*Other country* %	*Married mothers* %	*Unmarried mothers—paternity-acknowledged* %	*Unmarried mothers—paternity-not-acknowledged* %	*Total fertility* rate	*Median age of mothers* years
South-East Asia									
Cambodia	682	4.0	69.1	27.0	71.3	22.6	6.2	2.294	28.3
Indonesia	1 057	21.9	55.5	22.6	90.7	8.0	1.2	1.693	29.8
Laos	257	10.5	54.1	35.4	68.5	23.7	7.8	1.877	28.4
Malaysia	1 034	37.0	33.1	29.9	91.3	7.9	0.8	1.240	32.4
Philippines	2 640	36.0	42.8	21.1	81.0	16.6	2.4	1.893	31.4
Singapore	407	44.0	17.7	38.3	88.0	11.5	0.5	1.804	31.2
Thailand	501	46.3	14.8	38.9	67.5	27.1	5.4	1.579	31.2
Viet Nam	4 339	3.1	80.0	16.9	73.5	17.2	9.3	1.934	29.6
Other	155	27.1	51.0	21.9	95.5	3.2	1.3	1.416	32.4
Total	*11 072*	*19.9*	*57.5*	*22.6*	*78.9*	*15.9*	*5.2*	*1.683*	*30.3*
North-East Asia									
China (excl. SARs & Taiwan Province)	3 351	6.5	78.6	14.9	88.2	10.4	1.5	1.985	33.4
Hong Kong (SAR of China)	492	15.9	47.4	36.8	92.3	7.5	0.2	1.045	33.7
Japan	575	44.2	27.3	28.5	91.8	7.7	0.5	1.801	31.9
Korea, Republic of (South)	616	8.0	83.3	8.8	94.2	5.2	0.6	1.382	29.8
Other	231	13.9	45.9	40.3	93.5	6.1	0.4	1.770	31.3
Total	*5 265*	*12.0*	*69.2*	*18.8*	*89.9*	*9.0*	*1.1*	*1.637*	*32.6*
Southern and Central Asia									
India	1 435	14.1	72.6	13.3	95.6	3.8	0.6	1.739	30.8
Pakistan	306	4.6	84.6	10.8	96.4	2.9	0.7	n.a.	28.6
Sri Lanka	878	10.9	81.0	8.1	96.7	3.0	0.3	1.838	32.3
Other	512	4.7	87.9	7.4	93.9	5.7	0.4	n.a.	28.8
Total	*3 131*	*10.7*	*78.6*	*10.6*	*95.7*	*3.8*	*0.5*	*1.957*	*30.8*
Americas									
Argentina	166	43.4	21.7	34.9	81.3	17.5	1.2	1.519	29.3
Canada	536	68.1	9.0	22.9	87.1	11.8	1.1	1.747	32.3
Caribbean	51	64.7	11.8	23.5	82.4	13.7	3.9	1.748	32.6
Central America	226	22.1	52.7	25.2	73.9	19.9	6.2	1.713	28.1
Chile	403	31.5	36.5	32.0	77.4	20.6	2.0	1.625	30.1
United States of America	956	63.6	18.2	18.2	88.1	10.3	1.7	1.894	32.7
Uruguay	150	42.7	24.7	32.7	80.0	18.0	2.0	1.669	30.9
Other	331	31.4	32.3	36.3	79.8	17.5	2.7	1.767	32.3
Total	*2 819*	*50.5*	*23.9*	*25.6*	*83.3*	*14.5*	*2.1*	*1.579*	*31.7*
Sub-Saharan Africa									
Kenya	89	50.6	11.2	38.2	83.1	14.6	2.2	n.a.	33.3
Mauritius	207	44.0	29.5	26.6	85.5	13.0	1.4	1.361	33.2
South Africa	1 032	42.2	35.5	22.3	85.7	12.4	1.9	1.611	30.7
Zimbabwe	183	52.5	13.7	33.9	84.7	13.1	2.2	n.a.	31.5
Other	720	21.5	54.3	24.2	80.8	16.5	2.6	n.a.	29.9
Total	*2 231*	*36.9*	*38.2*	*24.9*	*83.9*	*13.9*	*2.2*	*1.748*	*30.9*
Other and not stated	**274**	**17.5**	**15.7**	**66.8**	**40.1**	**9.1**	**50.7**	**—**	**33.5**
Total Overseas-born	57 943	35.5	45.7	18.8	80.2	16.9	2.9	1.736	31.2
Total	**245 108**	**71.8**	**10.8**	**17.3**	**70.7**	**25.9**	**3.4**	**1.745**	**29.7**

(a) Paternity-acknowledged births only.

6.23 BIRTHPLACE OF FATHER(a), Summary

Birthplace of father	Total confinements	MOTHER BORN IN..... Australia	Same country as father	Other country	Married fathers	Unmarried fathers—paternity-acknowledged	Total paternity(b)	Median age of fathers
	no.	%	%	%	%	%	rate	years
Oceania and Antarctica								
Australia (incl. E T)	176 099	88.3	—	11.7	70.3	29.7	1.646	31.4
Fiji	937	24.2	64.4	11.4	82.3	17.7	2.409	32.5
New Zealand	6 523	57.1	28.4	14.5	62.6	37.4	1.717	32.4
Papua New Guinea	683	72.9	11.6	15.5	72.3	27.7	1.958	31.1
Other	1 664	22.7	56.8	20.5	67.5	32.5	3.951	32.2
Total	*185 906*	*86.3*	*1.9*	*11.9*	*70.1*	*29.9*	1.659	*31.4*
North-West Europe								
Austria	133	66.2	8.3	25.6	76.7	23.3	1.697	35.4
Denmark	122	60.7	15.6	23.8	81.1	18.9	1.551	34.7
France	316	58.5	15.2	26.3	77.8	22.2	1.543	33.5
Germany	784	59.6	11.6	28.8	78.2	21.8	1.417	35.3
Ireland	705	50.9	24.5	24.5	78.6	21.4	1.536	34.6
Netherlands	496	69.8	8.5	21.8	81.0	19.0	1.504	35.3
Switzerland	177	50.8	23.7	25.4	84.2	15.8	1.706	35.4
United Kingdom	12 742	68.1	18.9	13.0	78.8	21.2	1.470	34.7
Other	250	62.0	15.2	22.8	77.6	22.4	n.a.	34.1
Total	*15 725*	*66.4*	*18.3*	*15.4*	*78.8*	*21.2*	n.a.	*34.7*
Southern and Eastern Europe								
Bosnia and Herzegovina	486	16.9	75.7	7.4	90.3	9.7	n.a.!	33.3
Croatia	567	52.7	34.7	12.5	88.0	12.0	n.a.!	34.2
Cyprus	264	52.3	31.4	16.3	90.5	9.5	1.535	33.6
Former Yugoslav Republic of Macedonia (FYROM)	710	44.6	46.6	8.7	93.4	6.6	n.a.	32.2
Greece	752	74.3	13.8	11.8	90.3	9.7	1.388	35.8
Hungary	107	37.4	36.4	26.2	84.1	15.9	1.257	37.3
Italy	1 171	75.3	9.8	14.9	87.2	12.8	1.518	36.1
Malta	247	70.4	11.3	18.2	86.2	13.8	1.383	36.5
Poland	348	31.3	55.2	13.5	85.9	14.1	1.166	35.2
Portugal	268	47.0	35.8	17.2	81.3	18.7	1.938	32.5
Romania	152	16.4	70.4	13.2	86.2	13.8	1.313	34.5
Russian Federation	121	21.5	62.8	15.7	89.3	10.7	n.a.	33.0
Spain	157	58.0	5.1	36.9	80.9	19.1	1.592	34.4
Yugoslavia, Federal Republic of	552	40.2	46.9	12.9	84.6	15.4	n.a.	33.4
Other	338	34.3	39.6	26.0	86.4	13.6	n.a.	33.5
Total	*6 240*	*51.4*	*34.2*	*14.4*	*87.9*	*12.1*	n.a.	*34.4*
North Africa and the Middle East								
Egypt	556	29.7	51.8	18.5	95.1	4.9	2.510	36.9
Iran	325	17.5	56.9	25.5	90.8	9.2	1.382	36.0
Israel	162	46.9	23.5	29.6	85.2	14.8	1.950	35.1
Lebanon	3 153	34.9	57.6	7.5	92.9	7.1	3.715	32.6
Syria	282	22.3	44.7	33.0	92.9	7.1	n.a.	34.3
Turkey	936	23.5	67.6	8.9	91.6	8.4	2.515	31.9
Other	1 324	13.5	65.9	20.5	92.1	7.9	2.420	34.3
Total	*6 738*	*27.6*	*58.8*	*13.7*	*92.4*	*7.6*	2.930	*33.6*

(a) Paternity-acknowledged births and confinements only.

(b) Total paternity rate is calculated in the same way as the total fertility rate, although summed over five-year age groups 15–19 to 85 and over. Because paternity was not acknowledged in 5% of births, the actual paternity rate is, on average, 5% higher than the figures given in this table.

6.23 BIRTHPLACE OF FATHER(a), Summary *continued*

		MOTHER BORN IN.....						
	Total confinements	*Australia*	*Same country as father*	*Other country*	*Married fathers*	*Unmarried fathers—paternity-acknowledged*	*Total paternity(b)*	*Median age of fathers*
Birthplace of father	no.	%	%	%	%	%	rate	years
South-East Asia								
Cambodia	607	3.6	77.6	18.8	75.0	25.0	2.124	32.3
Indonesia	843	17.6	69.6	12.8	90.5	9.5	1.657	33.4
Laos	221	10.4	62.9	26.7	69.2	30.8	1.578	31.8
Malaysia	965	32.4	35.4	32.1	90.3	9.7	1.422	34.8
Philippines	1 362	12.7	83.0	4.3	82.7	17.3	1.605	32.5
Singapore	310	41.3	23.2	35.5	88.1	11.9	1.964	34.3
Thailand	153	25.5	48.4	26.1	60.8	39.2	1.172	32.3
Viet Nam	3 928	2.3	88.3	9.3	80.4	19.6	1.763	33.8
Other	188	29.3	42.0	28.7	90.4	9.6	1.447	35.7
Total	*8 577*	*11.6*	*74.2*	*14.2*	*82.3*	*17.7*	1.610	*33.6*
North-East Asia								
China (excl. SARs & Taiwan Province)	3 027	2.3	87.0	10.7	89.6	10.4	1.786	36.3
Hong Kong (SAR of China)	476	12.2	48.9	38.9	93.3	6.7	1.304	36.3
Japan	257	24.1	61.1	14.8	93.0	7.0	1.316	34.8
Korea, Republic of (South)	560	2.7	91.6	5.7	96.8	3.2	1.410	32.6
Other	169	4.1	62.7	33.1	94.7	5.3	2.626	33.0
Total	*4 489*	*4.7*	*81.1*	*14.2*	*91.3*	*8.7*	1.619	*35.9*
Southern and Central Asia								
India	1 539	20.5	67.7	11.8	93.6	6.4	1.408	34.5
Pakistan	390	17.2	66.4	16.4	94.6	5.4	n.a.	34.0
Sri Lanka	930	14.6	76.5	8.9	95.3	4.7	1.703	36.0
Other	545	7.2	82.6	10.3	93.0	7.0	n.a.	35.3
Total	*3 404*	*16.4*	*72.3*	*11.3*	*94.1*	5.9	1.642	*35.0*
Americas								
Argentina	193	52.8	18.7	28.5	80.3	19.7	1.667	32.3
Canada	516	74.0	9.3	16.7	86.2	13.8	1.802	34.2
Caribbean	63	65.1	9.5	25.4	74.6	25.4	1.646	34.5
Central America	242	28.1	49.2	22.7	68.6	31.4	2.003	30.1
Chile	428	46.5	34.3	19.2	70.3	29.7	1.732	31.5
United States of America	1 079	62.5	16.1	21.4	85.0	15.0	1.838	34.3
Uruguay	178	44.9	20.8	34.3	78.1	21.9	1.887	32.4
Other	302	37.7	35.4	26.8	75.5	24.5	1.646	33.6
Total	*3 001*	*55.3*	*22.5*	*22.2*	*79.9*	*20.1*	1.624	*33.3*
Sub-Saharan Africa								
Kenya	110	50.9	9.1	40.0	77.3	22.7	n.a.	34.8
Mauritius	240	51.3	25.4	23.3	83.8	16.3	1.558	35.5
South Africa	996	42.6	36.7	20.7	86.3	13.7	1.564	33.4
Zimbabwe	203	55.7	12.3	32.0	88.7	11.3	n.a.	34.5
Other	841	31.9	46.5	21.6	78.2	21.8	n.a.	34.1
Total	*2 390*	*41.2*	*35.7*	*23.1*	*83.0*	*17.0*	1.771	*34.0*
Other and not stated	**8 638**	**79.7**	**0.5**	**19.8**	**60.5**	**39.5**	**—**	**31.6**
Total Overseas-born	69 009	45.8	38.4	15.8	81.6	18.4	1.691	34.1
Total paternity acknowledged	**236 665**	**76.2**	**11.2**	**12.6**	**73.2**	**26.8**	**1.671**	**32.1**

(a) Paternity-acknowledged births and confinements only.

(b) Total paternity rate is calculated in the same way as the total fertility rate, although summed over five-year age groups 15–19 to 85 and over. Because paternity was not acknowledged in 5% of births, the actual paternity rate is, on average, 5% higher than the figures given in this table.

CHAPTER 7 ABORIGINAL AND TORRES STRAIT ISLANDER BIRTHS

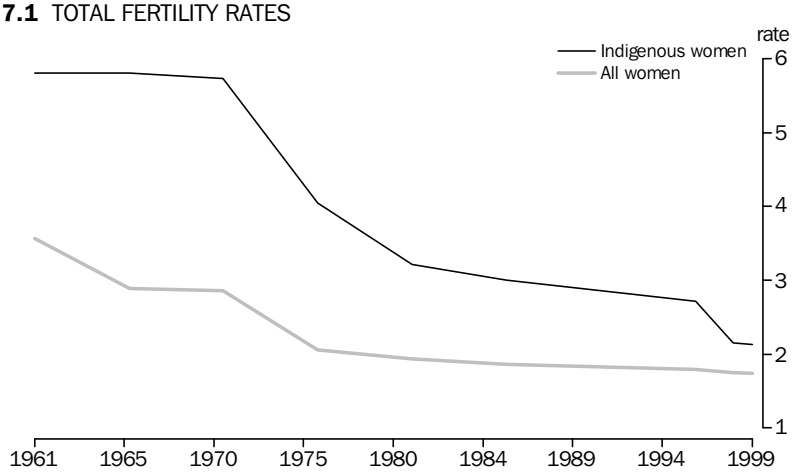
This chapter includes the number of births registered in each State and Territory. A breakdown of the characteristics of these births is published where the number registered is regarded as being reasonable.

INDIGENOUS FERTILITY

In the 1960s, the fertility of Aboriginal or Torres Strait Islander (Indigenous) women, at about 5.8 babies per woman, was close to twice the rate for all women in Australia (3.6). Over the last 35 years, fertility levels for both Indigenous and non-Indigenous women have declined substantially, with the largest decreases recorded during the 1970s. While the fertility decline for non-Indigenous women commenced in the 1960s, the fertility levels of Indigenous women remained relatively stable during the 1960s, followed by a sharp decline during the 1970s. In the fifteen years to 1996, the rate of decline of fertility of Indigenous women had slowed. Since then the fertility rate of Indigenous women appears to have declined further. In 1999, on current rates, it is estimated that Indigenous women will have at least 2.1 babies each, compared to 1.7 babies for all women.

Due to the poor quality of historical birth registration data, the most reliable source of information on historical fertility of the Indigenous population is the Census (from the question on total issue and/or derived from the number of children in each enumerated family).

7.1 TOTAL FERTILITY RATES

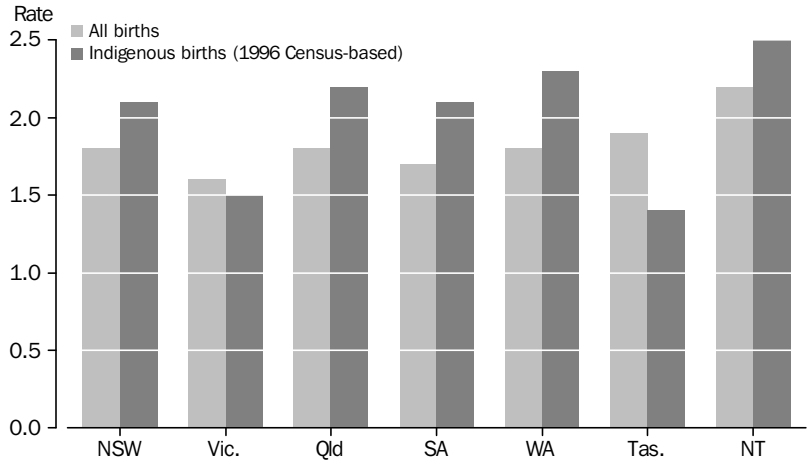


Source: A. Gray, *The explosion of Aboriginality: components of indigenous population growth 1991–96*, CAEPR Discussion Paper no. 142/1997, Centre for Aboriginal Economic Policy Research, Australian National University, Canberra, 1997; *Australian Demographic Trends, 1997* (Cat. no 3102.0); *Births, Australia, 1999* (Cat. no 3301.0).

INDIGENOUS FERTILITY *continued*

The total fertility rate for Indigenous women is derived using the number of births registered to Indigenous mothers in 1999 and the 1999 population from the 1996 Census-based population projections (low series). Indigenous births may be underestimated due to the lower propensity to identify as Indigenous on birth notification forms than Census forms. In 1999 it was estimated that the coverage of Indigenous births had decreased from 1998 levels in Victoria, Queensland and South Australia.

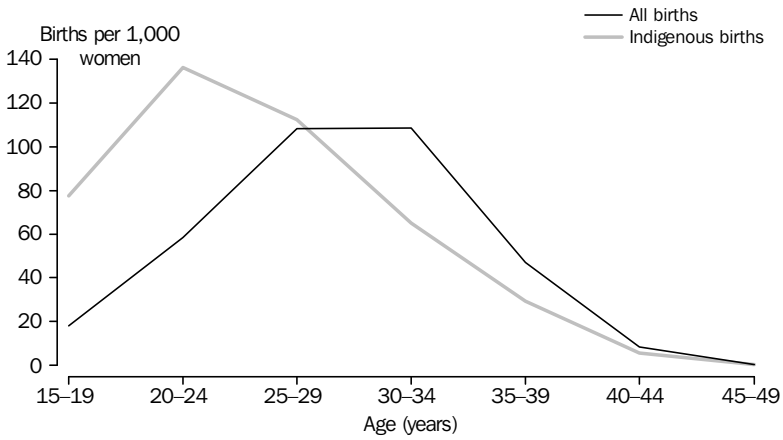
7.2 TOTAL FERTILITY RATE, Indigenous Births and All Births(a)



(a) The Australian Capital Territory is not included due to small numbers.

Indigenous women in the Northern Territory had the highest fertility rate of any State or Territory, at 2.5 babies per woman on average on 1999 rates. For all women in the Northern Territory the total fertility rate was 2.2. Indigenous women in Tasmania and Victoria had the lowest fertility at 1.4 and 1.5 births respectively per woman on current rates. This may reflect poor coverage of Indigenous births in these two States.

7.3 AGE-SPECIFIC FERTILITY RATES, Indigenous Births and all Births



INDIGENOUS FERTILITY *continued*

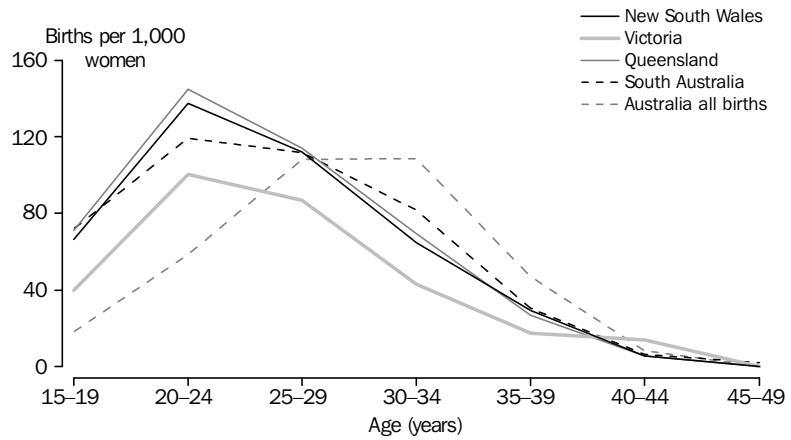
Indigenous women have their babies at younger ages than all women. In 1999, the median age of Indigenous mothers was 24.4 years, compared to 29.7 years for all women. Indigenous mothers living in the Northern Territory had the lowest median age at 23.3 years. Overall for Australia, fathers of Indigenous babies also tend to be younger (median age of 27.5 years) than fathers of all births (median age of 32.1 years). The youngest fathers of Indigenous babies were in the Northern Territory (26.8 years).

Among Indigenous teenage women, those living in the Northern Territory and Western Australia experienced the highest fertility in 1999 with rates seven and five times higher, respectively than all teenage women.

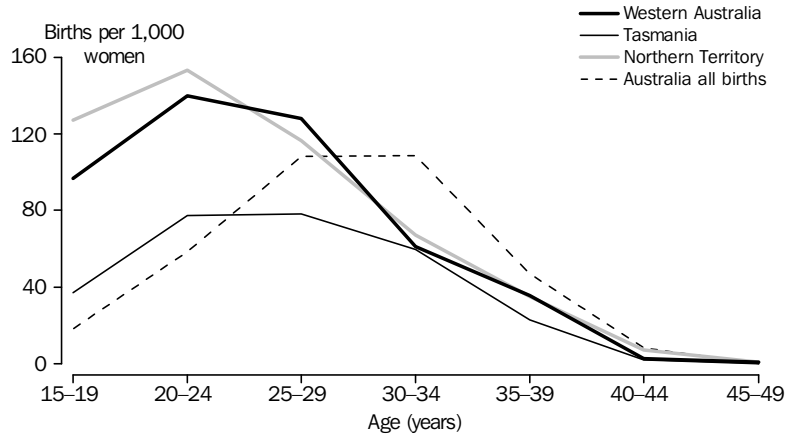
The age group experiencing the highest level of Indigenous fertility was 20–24 years, whereas fertility for all women peaked in the 30–34 age group. Indigenous women aged 15–19 and 20–24 years have much higher fertility than all women but after the age of 30, the fertility of Indigenous women declines rapidly and falls below that of all women. Nevertheless the very high rates of fertility at younger ages ensures that the total fertility of Indigenous women is relatively high. In the Northern Territory, Queensland, Western Australia and New South Wales the fertility of Indigenous women aged 20–24 years was more than double that of all women in this age group.

In 1999, more than three-quarters of the total fertility of Indigenous women (76%) was accounted for by women under 30 years of age, compared to 53% for all women. Indigenous women in Western Australia and the Northern Territory experienced the highest fertility for women aged under 30 years, accounting for 78% of total fertility, followed by Queensland and New South Wales (each 76%).

7.4 AGE-SPECIFIC FERTILITY RATES, Indigenous Births and all Births—Selected States



7.5 AGE-SPECIFIC FERTILITY RATES, Indigenous Births and all Births—Selected States and Territories



INDIGENOUS BIRTHS

There were 10,600 births registered in Australia during 1999 with one or both parents identified as being of Indigenous origin. However, this does not represent the true number of such births. The total number of Indigenous births registered in 1999 is around 106% the number expected from the 1991 Census-based experimental projections, and 90% of the number of births expected from the 1996 Census-based experimental projections (see table 7.6).

Australia's most populous State, New South Wales, had the largest number of Indigenous births in 1999 (3,100) followed by Queensland (3,000), Western Australia (1,600) and the Northern Territory (1,400).

Overall, 4% of births registered in Australia during 1999 were identified as Indigenous. For just under one-third of these births (31%), both parents were identified as Indigenous, for 42% only the mother was Indigenous (including births where paternity was not acknowledged and those where the father's origin was unknown), and for 27% only the father was Indigenous (including births where the mother's origin was not stated). Western Australia (46%) and the Northern Territory (43%) had the highest proportions of Indigenous births were both parents were Indigenous.

INDIGENOUS BIRTHS *continued*

In 1999, eight out of every ten Indigenous births registered in Australia were ex-nuptial (81%). At the State and Territory level the highest proportions of ex-nuptial Indigenous births occurred in the Northern Territory (94%) and Western Australia (86%). Australia wide, paternity-acknowledged ex-nuptial births accounted for almost two-thirds (66%) of all Indigenous births while one-sixth of all Indigenous births (15%) were paternity-not-acknowledged.

Birthweight

Birth weight is a useful indicator of the health status of babies. A comparison of the average birth weight of Indigenous babies with all babies shows that Indigenous babies are generally smaller. According to the Midwives' collection, the average birth weight of Indigenous babies in 1997 was 3,146g, 210g lower than the average for all babies (3,356g). The pattern of birth weight varied between States and Territories, ranging from an average of 3,049g in the Northern Territory to 3,286g in the Australian Capital Territory. A higher proportion (13%) of Indigenous babies were of low birth weight (less than 2,500g), compared to all births (7%).

COVERAGE OF BIRTH REGISTRATION

There are several data collection forms on which people are asked to state whether they are of Indigenous origin. Due to a number of factors the results are not always consistent. The likelihood that a person will identify, or be identified, as Indigenous on a specific form is known as their propensity to identify as Indigenous. Propensity to identify as Indigenous can be thought of as the proportion of the total, unknown, number of Indigenous people who identify as such on a specific form.

Propensity to identify is determined by a range of factors, including the perception of how the information will be used, education programs about identifying as Indigenous, and emotional reaction to identifying as Indigenous.

There are four estimates of the number of Indigenous births each year. Each is based on a different collection, with a different propensity to identify as Indigenous:

- 1991 Census-based population projections: The number of Indigenous children in the 1991 Census was used to estimate the fertility rate for 1991. Assuming this fertility rate to continue, and making other assumptions about mortality and interstate migration, the number of births in subsequent years was projected.
- 1996 Census-based population projections: There are two series of projections; a low series and a high series. The low series uses a very similar method to the 1991 Census-based population projections, the number of births each year is estimated, using the propensity to identify found in the 1996 Census. The high series uses an alternative assumption of an increasing propensity to identify based on the change between 1991 and 1996.
- Birth Registrations: This publication is based on the registration of births with the Registrar of Births, Deaths and Marriages in each State and Territory.
- Midwives' Collection: This data, also known as the Perinatal Statistics Collection, is primarily about babies born in hospitals and their mothers.

7.6 INDIGENOUS BIRTHS, Summary

	NSW	Vic.	Qld	SA	WA	Tas.	NT	ACT	Aust.(a)
BIRTHS REGISTERED AS INDIGENOUS									
1989	42	419	4	467	25	—	1 277	—	2 238
1990	47	499	7	588	30	3	1 289	35	2 498
1991	50	508	9	593	33	190	1 257	58	2 698
1992	42	503	4	561	1 215	218	1 354	14	3 911
1993	1 278	493	31	519	1 535	264	1 359	43	5 523
1994	2 011	520	25	531	1 578	247	1 338	59	6 310
1995	2 345	542	29	554	1 492	267	1 354	52	6 640
1996	2 444	474	2 534	557	1 538	244	1 343	66	9 204
1997	2 813	457	3 038	591	1 474	310	1 259	53	9 999
1998	3 014	590	3 085	661	1 468	300	1 284	42	10 445
1999	3 052	521	2 974	640	1 558	339	1 419	75	10 580
EXPECTED INDIGENOUS BIRTHS (1991 Census-based experimental projections)(b)									
1994	2 414	601	2 441	535	1 582	293	1 375	55	9 296
1995	2 446	612	2 485	543	1 607	302	1 387	57	9 439
1996	2 473	622	2 520	551	1 629	310	1 401	59	9 565
1997	2 499	631	2 553	559	1 653	319	1 416	61	9 691
1998	2 525	639	2 594	569	1 680	326	1 435	62	9 830
1999	2 551	647	2 637	580	1 710	334	1 459	64	9 989
EXPECTED INDIGENOUS BIRTHS (1996 Census-based experimental estimates and projections)									
1994(c)	3 311	647	3 123	608	1 519	409	1 385	84	11 088
1995(c)	3 355	659	3 179	617	1 543	421	1 397	87	11 258
1996(c)	3 392	669	3 224	626	1 564	432	1 411	90	11 409
1997(d)	3 428	679	3 266	635	1 587	445	1 426	93	11 559
1998(d)	3 448	680	3 312	639	1 597	450	1 436	96	11 162
1999(d)	3 471	680	3 357	644	1 609	458	1 442	98	11 763
ESTIMATED COVERAGE OF INDIGENOUS BIRTHS (1991 Census-based expectancies) (%)									
1994	83	87	1	99	100	84	97	107	68
1995	96	89	1	102	93	88	98	91	70
1996	99	76	101	101	94	79	96	112	96
1997	113	72	119	106	89	97	89	87	103
1998	119	92	119	116	87	92	89	68	106
1999	120	81	113	110	91	101	97	117	106
ESTIMATED COVERAGE OF INDIGENOUS BIRTHS (1996 Census-based expectancies) (%)									
1994	61	80	1	87	104	60	97	70	57
1995	70	82	1	90	97	63	97	60	59
1996	72	71	79	89	98	56	95	73	81
1997	82	67	93	93	93	70	88	57	87
1998	87	87	93	103	92	67	89	44	94
1999	88	77	89	99	97	74	98	77	90

(a) Includes 'Other Territories' from 1993.

(b) *Source*: *Experimental Projections of the Aboriginal and Torres Strait Islander Population, 1991–2001* (Cat. no 3231.0). Medium series.

(c) Derived using the ratio for 1997 from the 1991 Census-based projected population to the 1996 Census-based projected population. *Experimental Projections of the Aboriginal and Torres Strait Islander Population* (Cat. no 3231.0), using low series, 1996–2006 edition and the medium series of the 1991–2001 edition.

(d) *Source*: *Experimental Projections of the Aboriginal and Torres Strait Islander Population, 1996–2006* (Cat. no 3231.0). Low series.

7.7 INDIGENOUS REGISTERED BIRTHS—Australia(a)

	All Indigenous births	*Births to Indigenous mothers*	*All births*
Total births (no.)	*10 580*	*7 735*	*248 870*
Nuptial births (%)	19.2	15.0	70.8
Ex-nuptial births (%)	80.8	85.0	29.2
Paternity-acknowledged (%)	65.6	64.2	25.8
Paternity-not-acknowledged (%)	15.1	20.7	3.4
Both parents Indigenous (%)	31.3	. .	. .
Mother only(b) (%)	41.6	. .	. .
Father only(c) (%)	27.0	. .	. .
Age of mother			
19 and under (no.)	2 156	1 649	11 751
20–24 (no.)	3 321	2 458	38 943
25–29 (no.)	2 878	2 073	79 553
30–34 (no.)	1 487	1 057	76 774
35–39 (no.)	614	419	35 462
40–44 (no.)	108	66	6 060
45 and over (no.)	5	3	228
Not stated (no.)	11	10	99
Age-specific fertility rates(d)			
15–19	. .	77.6	18.1
20–24	. .	136.1	58.5
25–29	. .	112.3	108.1
30–34	. .	65.1	108.5
35–39	. .	29.4	47.0
40–44	. .	5.8	8.5
45–49	. .	0.3	0.3
Total fertility rate	. .	*2.133*	*1.745*
Total confinements (no.)	*10 463*	*7 655*	*245 108*
Median age of mother (years)	24.6	24.4	29.7
Median age of father (years)	27.4	27.4	32.1

(a) 1999 coverage of Indigenous births in Australia has been estimated at 106% on 1991 Census-based projections and 90% on 1996 Census-based projections. Table 7.6.

(b) Includes paternity-not-acknowledged and origin of father not stated.

(c) Includes origin of mother not stated (9.6%).

(d) Indigenous rates based on the 1996 Census-based projected population for 1999, low series.

7.8 INDIGENOUS REGISTERED BIRTHS—New South Wales(a)

	All Indigenous births	*Births to Indigenous mothers(a)*	*All births*
Total births (no.)	*3 052*	*2 060*	*86 784*
Nuptial births (%)	22.8	19.0	72.8
Ex-nuptial births (%)	77.2	82.1	27.2
Paternity-acknowledged (%)	68.0	67.3	23.9
Paternity-not-acknowledged (%)	9.2	13.7	3.3
Both parents Indigenous (%)	24.0	. .	. .
Mother only(b) (%)	43.5	. .	. .
Father only (c) (%)	32.3	. .	. .
Age of mother			
19 and under (no.)	578	395	3 988
20–24 (no.)	951	664	13 674
25–29 (no.)	865	574	27 944
30–34 (no.)	436	288	26 198
35–39 (no.)	184	120	12 644
40–44 (no.)	36	18	2 240
45 and over (no.)	—	—	92
Not stated (no.)	—	—	4
Age-specific fertility rates(c)			
15–19	. .	66.3	18.6
20–24	. .	137.5	62.2
25–29	. .	112.2	111.8
30–34	. .	64.7	110.3
35–39	. .	29.5	49.5
40–44	. .	5.5	9.4
45–49	. .	—	0.4
Total fertility rate	. .	*2.078*	*1.811*
Total confinements (no.)	*3 019*	*2 040*	*85 494*
Median age of mother (years)	24.9	24.7	29.6
Median age of father (years)	27.6	27.6	32.3

(a) 1999 coverage of Indigenous births in New South Wales has been estimated at 120% on 1991 Census-based projections and 88% on 1996 Census-based projections. Table 7.6.

(b) Includes paternity-not-acknowledged and origin of father not stated.

(c) Includes origin of mother no stated (31.4%).

(d) Indigenous rates based on the 1996 Census-based projected population for 1999, low series.

7.9 INDIGENOUS REGISTERED BIRTHS—Victoria(a)

	All Indigenous births	*Births to Indigenous mothers(a)*	*All births*
Total births (no.)	*521*	*298*	*58 875*
Nuptial births (%)	25.3	27.5	76.6
Ex-nuptial births (%)	74.7	72.5	23.4
Paternity-acknowledged (%)	72.0	67.8	21.8
Paternity-not-acknowledged (%)	2.7	4.7	1.6
Both parents Indigenous (%)	14.4	. .	. .
Mother only(b) (%)	42.8	. .	. .
Father only(c) (%)	42.8	. .	. .
Age of mother			
19 and under (no.)	77	45	1 713
20–24 (no.)	175	97	7 294
25–29 (no.)	144	87	18 530
30–34 (no.)	73	44	20 338
35–39 (no.)	34	15	9 375
40–44 (no.)	17	10	1 567
45 and over (no.)	—	—	54
Not stated (no.)	—	—	4
Age-specific fertility rates(d)			
15–19	. .	39.8	10.8
20–24	. .	100.3	43.4
25–29	. .	87.0	99.3
30–34	. .	43.2	111.9
35–39	. .	17.4	50.0
40–44	. .	14.0	8.9
45–49	. .	—	0.3
Total fertility rate	. .	*1.509*	*1.623*
Total confinements (no.)	*512*	*293*	*57 891*
Median age of mother (years)	25.2	25.4	30.4
Median age of father (years)	28.0	28.4	32.6

(a) 1999 coverage of Indigenous births in Victoria has been estimated at 81% on 1991 Census-based projections and 77% on 1996 Census-based projections. Table 7.6.

(b) Includes paternity-not-acknowledged and origin of father not stated.

(c) Includes origin of mother not stated (0.8%).

(d) Indigenous rates based on the 1996 Census-based projected population for 1999, low series.

7.10 INDIGENOUS REGISTERED BIRTHS—Queensland(a)

	All Indigenous births	*Births to Indigenous mothers(a)*	*All births*
Total births (no.)	*2 974*	*2 156*	*46 503*
Nuptial births (%)	21.5	17.2	66.4
Ex-nuptial births (%)	78.5	82.8	33.6
Paternity-acknowledged (%)	64.1	62.9	29.0
Paternity-not-acknowledged (%)	14.4	19.9	4.6
Both parents Indigenous (%)	30.9	. .	. .
Mother only(b) (%)	41.6	. .	. .
Father only(c) (%)	27.5	. .	. .
Age of mother			
19 and under (no.)	549	416	2 818
20–24 (no.)	980	724	8 689
25–29 (no.)	826	588	15 214
30–34 (no.)	430	307	13 071
35–39 (no.)	159	104	5 751
40–44 (no.)	29	17	932
45 and over (no.)	—	—	27
Not stated (no.)	—	—	—
Age-specific fertility rates(d)			
15–19	. .	71.2	22.4
20–24	. .	144.8	69.2
25–29	. .	114.3	111.2
30–34	. .	69.5	101.5
35–39	. .	27.1	41.2
40–44	. .	5.7	7.1
45–49	. .	—	0.2
Total fertility rate	. .	*2.162*	*1.764*
Total confinements (no.)	*2 950*	*2 139*	*45 874*
Median age of mother (years)	24.7	24.5	28.9
Median age of father (years)	27.4	27.3	31.3

(a) 1999 coverage of Indigenous births in Queensland has been estimated at 113% on 1991 Census-based projections and 89% on 1996 Census-based projections. Table 7.6.

(b) Includes paternity-not-acknowledged and origin of father not stated.

(c) Includes origin of mother not stated (1.3%).

(d) Indigenous rates based on the 1996 Census-based projected population for 1999, low series.

7.11 INDIGENOUS REGISTERED BIRTHS—South Australia(a)

	All Indigenous births	*Births to Indigenous mothers(a)*	*All births*
Total births (no.)	*640*	*453*	*17 958*
Nuptial births (%)	20.9	14.1	68.8
Ex-nuptial births (%)	79.1	85.9	31.2
Paternity-acknowledged (%)	69.2	72.0	28.0
Paternity-not-acknowledged (%)	9.8	13.9	3.2
Both parents Indigenous (%)	33.1	. .	. .
Mother only(b) (%)	37.7	. .	. .
Father only(c) (%)	29.2	. .	. .
Age of mother			
19 and under (no.)	114	90	763
20–24 (no.)	182	123	2 577
25–29 (no.)	174	123	5 679
30–34 (no.)	118	82	5 825
35–39 (no.)	42	26	2 574
40–44 (no.)	5	4	508
45 and over (no.)	—	—	25
Not stated (no.)	4	4	7
Age-specific fertility rates(d)			
15–19	. .	71.9	15.5
20–24	. .	119.4	53.1
25–29	. .	111.7	108.5
30–34	. .	82.0	109.8
35–39	. .	30.8	44.0
40–44	. .	6.5	9.1
45–49	. .	2.1	0.5
Total fertility rate	. .	*2.122*	*1.702*
Total confinements (no.)	*632*	*448*	*17 675*
Median age of mother (years)	25.5	25.4	29.9
Median age of father (years)	28.1	27.8	32.3

(a) 1999 coverage of Indigenous births in South Australia has been estimated at 110% on 1991 Census-based projections and 99% on 1996 Census-based projections. Table 7.6.

(b) Includes paternity-not-acknowledged and origin of father not stated.

(c) Includes origin of mother not stated (1.1%).

(d) Indigenous rates based on the 1996 Census-based projected population for 1999, low series.

7.12 INDIGENOUS REGISTERED BIRTHS—Western Australia(a)

	All Indigenous births	*Births to Indigenous mothers(a)*	*All births*
Total births (no.)	*1 558*	*1 232*	*24 849*
Nuptial births (%)	14.2	11.4	66.2
Ex-nuptial births (%)	85.8	88.6	33.8
Paternity-acknowledged (%)	71.4	70.1	30.2
Paternity-not-acknowledged (%)	14.4	18.4	3.6
Both parents Indigenous (%)	45.8	. .	. .
Mother only(b) (%)	32.0	. .	. .
Father only(c) (%)	22.1	. .	. .
Age of mother			
19 and under (no.)	382	294	1 401
20–24 (no.)	464	367	4 123
25–29 (no.)	414	337	7 871
30–34 (no.)	194	150	7 559
35–39 (no.)	93	75	3 348
40–44 (no.)	7	5	520
45 and over (no.)	—	—	24
Not stated (no.)	3	3	3
Age-specific fertility rates(d)			
15–19	. .	96.8	21.2
20–24	. .	139.8	60.3
25–29	. .	128.1	109.7
30–34	. .	61.4	108.6
35–39	. .	35.7	44.8
40–44	. .	3.0	7.2
45–49	. .	0.8	0.4
Total fertility rate	. .	*2.327*	*1.761*
Total confinements (no.)	*1 536*	*1 217*	*24 485*
Median age of mother (years)	24.3	24.4	29.4
Median age of father (years)	27.0	27.0	31.8

(a) 1999 coverage of Indigenous births in Western Australia has been estimated at 91% on 1991 Census-based projections and 97% on 1996 Census-based projections. Table 7.6.

(b) Includes paternity-not-acknowledged and origin of father not stated.

(c) Includes origin of mother not stated.

(d) Indigenous rates based on the 1996 Census-based projected population for 1999, low series.

7.13 INDIGENOUS REGISTERED BIRTHS—Tasmania(a)

	All Indigenous births	*Births to Indigenous mothers(a)*	*All births*
Total births (no.)	*339*	*193*	*6 032*
Nuptial births (%)	32.2	27.5	59.9
Ex-nuptial births (%)	67.8	72.5	40.1
Paternity-acknowledged (%)	63.4	64.8	35.5
Paternity-not-acknowledged (%)	4.4	7.8	4.5
Both parents Indigenous (%)	9.7	. .	. .
Mother only(b) (%)	47.2	. .	. .
Father only(c) (%)	43.1	. .	. .
Age of mother			
19 and under (no.)	56	35	459
20–24 (no.)	106	60	1 161
25–29 (no.)	98	51	1 969
30–34 (no.)	53	33	1 628
35–39 (no.)	25	13	700
40–44 (no.)	1	1	109
45 and over (no.)	—	—	3
Not stated (no.)	—	—	3
Age-specific fertility rates(d)			
15–19	. .	37.4	27.1
20–24	. .	77.5	78.8
25–29	. .	78.1	123.4
30–34	. .	59.6	101.2
35–39	. .	22.8	37.6
40–44	. .	2.0	6.1
45–49	. .	—	0.2
Total fertility rate	. .	*1.387*	*1.872*
Total confinements (no.)	*335*	*191*	*5 931*
Median age of mother (years)	25.2	25.0	28.6
Median age of father (years)	28.8	29.5	31.1

(a) 1999 coverage of Indigenous births in the Tasmania has been estimated at 101% on 1991 Census-based projections and 74% on 1996 Census-based projections. Table 7.6.

(b) Includes paternity-not-acknowledged and origin of father not stated.

(c) Includes origin of mother not stated.

(d) Indigenous rates based on the 1996 Census-based projected population for 1999, low series.

7.14 INDIGENOUS REGISTERED BIRTHS—Northern Territory(a)

	All Indigenous births	*Births to Indigenous mothers(a)*	*All births*
Total births (no.)	*1 419*	*1 306*	*3 576*
Nuptial births (%)	5.6	4.1	40.0
Ex-nuptial births (%)	94.4	95.9	60.0
Paternity-acknowledged (%)	54.1	52.1	40.2
Paternity-not-acknowledged (%)	40.3	43.8	19.7
Both parents Indigenous (%)	43.1	. .	. .
Mother only(b) (%)	48.9	. .	. .
Father only(c) (%)	8.0	. .	. .
Age of mother			
19 and under (no.)	391	369	474
20–24 (no.)	437	408	817
25–29 (no.)	341	305	1 067
30–34 (no.)	163	147	775
35–39 (no.)	71	63	367
40–44 (no.)	13	11	69
45 and over (no.)	—	—	—
Not stated (no.)	—	—	6
Age-specific fertility rates(d)			
15–19	. .	127.3	67.6
20–24	. .	153.3	104.3
25–29	. .	116.4	112.6
30–34	. .	67.2	90.2
35–39	. .	35.2	45.7
40–44	. .	7.3	9.9
45–49	. .	0.9	0
Total fertility rate	. .	*2.539*	*2.153*
Total confinements (no.)	*1 402*	*1 290*	*3 531*
Median age of mother (years)	23.4	23.3	27.5
Median age of father (years)	26.8	26.8	30.8

(a) 1999 coverage of Indigenous births in the Northern Territory has been estimated at 97% on 1991 Census-based projections and 98% on 1996 Census-based projections. Table 7.6.

(b) Includes paternity-not-acknowledged and origin of father not stated.

(c) Includes origin of mother not stated (0.2%).

(d) Indigenous rates based on the 1996 Census-based projected population for 1999, low series.

CHAPTER 8 PROJECTED FERTILITY

The ABS published *Population Projections, Australia 1999 to 2101* (Cat. no. 3222.0) in August 2000. For Australia the projections span the period 1999–2101 and for the States and Territories and capital cities/balances of State cover the period 1999–2051. The 1999 data in this chapter is assumed and not observed.

A combination of assumptions of future levels of births, deaths and migration are used to illustrate the possible size, structure and distribution of Australia's population into the next century. Three main series are published. This chapter describes the fertility assumptions and how these were developed for the States and Territories, the capital cities and balances of State.

8.1 PROJECTION SERIES, Assumptions used(a)—Australia

	Total fertility rate(b)	*Net overseas migration*
Series I	1.75	110 000
Series II	1.60	90 000
Series III	1.60	70 000

(a) One mortality assumption is used for all series.

(b) Babies per woman.

AUSTRALIA

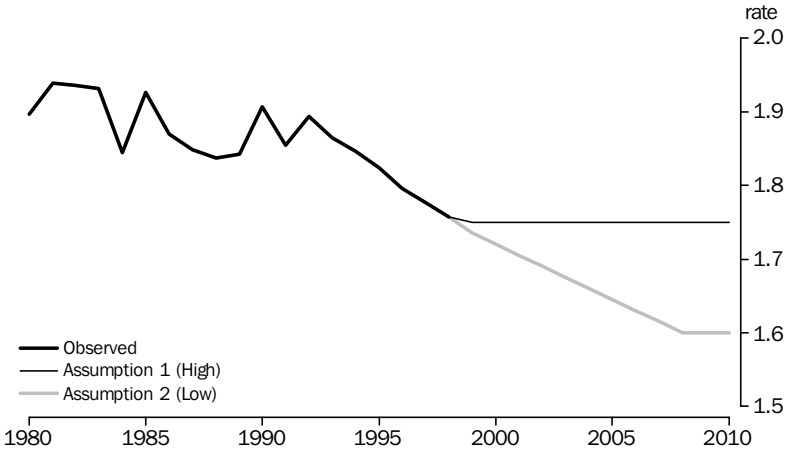
Assumed Total Fertility

There are two long-term fertility assumptions. They are based on a cross-sectional or annual measure of fertility, the total fertility rate (TFR). One assumption maintains a total fertility rate (TFR) of 1.75 babies per woman throughout the projection period (high assumption) and the other assumes a scenario of fertility decline to 1.6 babies per woman by 2008 (low assumption) remaining constant thereafter.

Since the late 1970s, Australia's TFR has fluctuated between 1.7 and 1.9 babies per woman. Despite the small falls in the 1990s, it is reasonable to assume that the TFR could stabilise in the 1.7 to 1.8 range, say 1.75. This would still leave Australia above the current level of fertility experienced by Canada and the United Kingdom. This is taken as the high fertility assumption.

The low fertility assumption assumes that the declines in the TFR over the 1993–98 period will continue to around 1.60 babies per woman in 2008. It is assumed to remain constant to the end of the projection period. This assumption is consistent with factors that are considered associated with the lowering of fertility, such as the increased participation of women in education and in the labour force. These higher participation rates may result in smaller families and increasing childlessness, both of which would lower the TFR.

8.2 TOTAL FERTILITY RATE, Australia: Observed and Projected



Assumed age-specific fertility

While there has been a decline in overall fertility there has also been a marked change in the ages at which women are having babies. Age-specific fertility rates (ASFRs) show that throughout the twentieth century women under 30 years of age have had consistently higher fertility than women aged 30 years and over. Yet in the last 20 years the trend has been toward declining rates in the age groups below age 30, and an increase in the rates above this age. In 1980, women aged under 30 years contributed 72.8% to total fertility, but in 1999 this share reduced to 52.7%. Continuation of this deferment of fertility to higher ages is assumed to prevail in the projections. In the year 2008 and beyond, less than half (42%) of the total fertility is assumed to be contributed by 15–29 year old women.

The ASFRs consistent with pre-determined TFRs were obtained as follows. The ASFRs by single year of age were calculated for the years 1993–1998. Annual rates of change in the ASFRs were obtained. Adjustments were made to smooth the annual rates of change which were then used to calculate ASFRs for 2008. Further adjustments were made to ensure that the projected proportionate distribution of the ASFRs added to 1.0. The distributions for 1999–2007 were then calculated using linear interpolation between the 1998 and 2008 values. The age distribution of fertility was then multiplied by the projected TFR in each projection year to produce ASFRs by single year of age for both the high and low assumptions.

8.3 AGE-SPECIFIC FERTILITY RATES(a), Australia: Projected

Year	AGE GROUP (YEARS) 15–19	20–24	25–29	30–34	35–39	40–44	45–49	Aged under 30 years	Aged 30 years and over	Total fertility rate(b)
ASSUMPTION 1 (High)										
1999	18.25	58.05	108.64	108.48	47.67	8.58	0.34	924.7	825.4	1 750
2000	17.95	56.49	106.25	109.72	49.98	9.26	0.35	903.5	846.6	1 750
2001	17.65	54.92	103.86	110.97	52.29	9.95	0.37	882.2	867.9	1 750
2002	17.34	53.36	101.48	112.21	54.59	10.64	0.38	860.9	889.1	1 750
2003	17.04	51.80	99.09	113.45	56.90	11.32	0.39	839.7	910.3	1 750
2004	16.74	50.23	96.71	114.70	59.21	12.01	0.41	818.4	931.7	1 750
2005	16.44	48.67	94.32	115.94	61.52	12.69	0.42	797.2	952.9	1 750
2006	16.14	47.11	91.93	117.18	63.83	13.38	0.44	775.9	974.2	1 750
2007	15.83	45.55	89.55	118.43	66.14	14.07	0.45	754.7	995.5	1 750
2008–2101	15.53	43.98	87.16	119.67	68.44	14.75	0.46	733.4	1 016.6	1 750
ASSUMPTION 2 (Low)										
1999	17.99	57.22	107.09	106.93	46.99	8.45	0.33	911.5	813.5	1 725
2000	17.55	55.23	103.88	107.28	48.86	9.06	0.34	883.3	827.7	1 711
2001	17.11	53.26	100.72	107.61	50.70	9.65	0.35	855.5	841.6	1 697
2002	16.68	51.32	97.59	107.91	52.50	10.23	0.37	828.0	855.1	1 683
2003	16.25	49.40	94.51	108.20	54.27	10.80	0.38	800.8	868.3	1 669
2004	15.84	47.54	91.51	108.54	56.03	11.36	0.39	774.5	881.6	1 656
2005	15.42	45.67	88.50	108.79	57.72	11.91	0.40	748.0	894.1	1 642
2006	15.01	43.82	85.52	109.01	59.38	12.45	0.41	721.8	906.3	1 628
2007	14.60	42.01	82.59	109.22	61.00	12.97	0.41	696.0	918.0	1 614
2008–2101	14.20	40.21	79.69	109.41	62.58	13.49	0.42	670.5	929.5	1 600

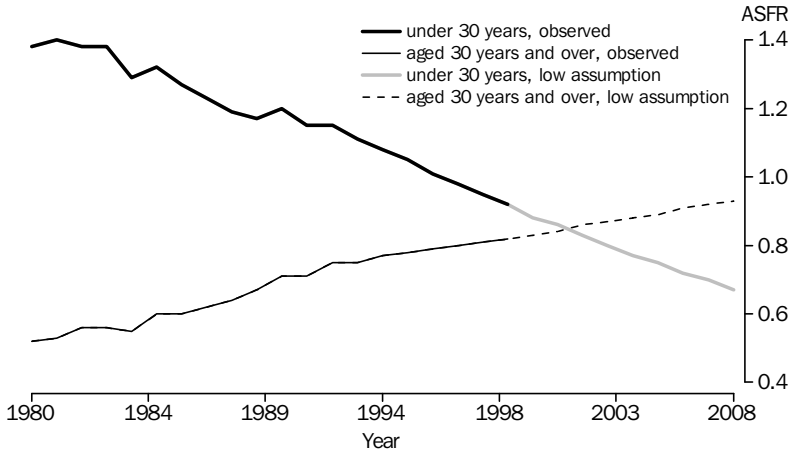
Source: *Population Projections, Australia 1999–2101* (Cat no. 3222.0).

(a) Rates per 1000 women.

(b) Babies per woman

The assumptions indicate that women aged 30 years and over could soon experience higher fertility than younger women. In both the high and low assumptions, the fertility of women aged 30 years and over meets, and then overtakes, the fertility of younger women in 2002.

8.4 AGE-SPECIFIC FERTILITY RATES, Women aged under 30 and 30 years and over: Observed and Projected

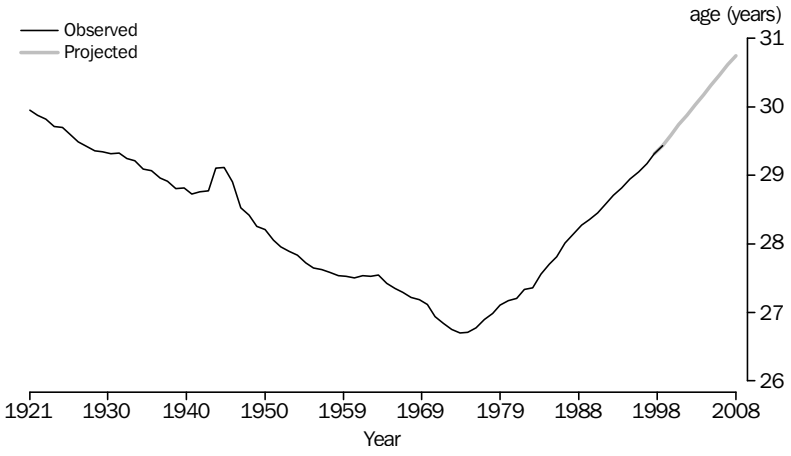


Assumed age-specific fertility *continued*

Under the high assumption, the declining fertility of women under 30 years of age (which is assumed to fall by 0.19 children per woman between 1999 and 2008) is compensated by the fertility of older women increasing by the same amount. In contrast, the low assumption produces a greater decline in the fertility of younger women (0.25 children per woman by 2008) and a relatively small increase in that of women aged 30 years and over (0.11 children per woman).

The mean age at childbearing provides a summary measure of the age pattern of women who have babies each year. The mean age of childbearing was relatively high in the 1920s (at 30 years in 1921) but declined over the next fifty years to its lowest level— 26.7 years in 1974. Since that time the average age of mothers has increased rapidly. In 1999, the mean age was 29.4 years but by 2008 this could increase to 30.8 years.

8.5 MEAN AGE AT CHILDBEARING



THE STATES AND TERRITORIES, CAPITAL CITIES AND BALANCES OF STATE

In recent years, total fertility rates for Victoria, South Australia and the Australian Capital Territory have been consistently lower than the rates for Australia as a whole, while total fertility rates in other States have been higher than the national average. The Northern Territory has by far the highest fertility rate, averaging 23% above the rate for Australia, with considerably younger mothers than the rest of the country. This reflects the large proportion of Indigenous women in the population whose fertility is higher than that of non-Indigenous women.

In all States, the TFR in the capital city is lower than the rate for the respective State or Territory while the rate for the State balance is higher. While in 1996–98 the total fertility rate for Darwin was 11% below the Territory level, those of Melbourne and Sydney were only 5% below their respective State levels. The balance of Western Australia had a fertility rate 21% above the State level, compared to Tasmania's balance of State which was only 7% above the State level.

Assumed total fertility

The fertility assumptions for the States and Territories are based on the national assumptions and the average differentials between the State or Territory and Australia. The differentials were calculated for the period 1996–1998 and were assumed to remain constant from 2008, after an initial phasing-in period. The differentials were multiplied by Australia's projected TFR to produce the projected TFR for the States and Territories in each projection year.

8.6 TOTAL FERTILITY RATES AND FERTILITY DIFFERENTIALS(a)

	TOTAL FERTILITY RATE(b)								
	1998			*1996–1998*			*Assumed differential from 2008*		
	Capital city	*Balance of State*	*Total*	*Capital city*	*Balance of State*	*Total*	*Capital city*	*Balance of State*	*State*
	rate	rate	rate	rate	rate	rate	%	%	%
New South Wales	1.71	2.01	1.80	1.73	2.03	1.82	97.2	114.4	102.4
Victoria	1.59	2.03	1.68	1.60	2.02	1.69	90.2	113.5	95.2
Queensland	1.67	1.93	1.79	1.69	1.95	1.82	95.1	109.6	102.2
South Australia	1.62	2.02	1.70	1.62	2.06	1.72	91.3	114.9	96.9
Western Australia	1.66	2.14	1.77	1.67	2.16	1.79	94.3	121.6	100.7
Tasmania	1.67	1.93	1.81	1.65	1.96	1.83	92.8	110.0	102.9
Northern Territory	2.01	2.34	2.20	1.96	2.37	2.19	110.2	133.4	123.2
Australian Capital Territory	1.54	. .	1.54	1.58	. .	1.58	88.0	. .	88.0
Australia	**. .**	**. .**	**1.76**	**. .**	**. .**	**1.76**	**. .**	**. .**	**100.0**

Source: *Population Projections, Australia 1999–2101* (Cat no. 3222.0).

(a) Differentials show the relationship of the TFR for 1996–1998 for each State, capital city and balance of State to the Australian level.

(b) Babies per woman.

Similarly, fertility assumptions for the capital cities and State balances are based on the projected TFRs for their respective State or Territory and the average differential between the region and its respective State or Territory. It is assumed that the average 1996–1998 differential between the capital city and balance within each State or Territory will remain constant from 2008, after an initial phasing-in period. These differentials were adjusted slightly when six months of data for 1999 became available.

Under both the high and low assumptions the Northern Territory has the highest levels of fertility of all the States and Territories at 1.97 (low assumption) and 2.16 babies per woman (high assumption). In contrast, the Australian Capital Territory has by far the lowest assumed fertility at just 1.41 (low assumption) and 1.54 births per woman (high assumption). Victoria's assumed fertility is also low (1.52 and 1.67 babies per woman) compared with that of New South Wales and Queensland (1.64 and 1.79 births per woman).

Assumed total fertility *continued*

Under both assumptions the State balances are projected to continue with higher fertility than their respective capital cities. The Northern Territory balance is set to have the highest TFR at 2.13 (low assumption) and 2.33 births per woman (high assumption) in 2008, higher than replacement level fertility. Similarly, under the high assumption the balance of Western Australia may also have above replacement level fertility at 2.13 births per woman in 2008, remaining constant thereafter.

8.7 ASSUMED TOTAL FERTILITY RATES(a) from 2008

	ASSUMPTION 1 (HIGH).....			ASSUMPTION 2 (LOW)....		
	Capital city	*Balance of State*	*Total*	*Capital city*	*Balance of State*	*Total*
New South Wales	1.70	2.00	1.79	1.56	1.83	1.64
Victoria	1.58	1.99	1.67	1.44	1.82	1.52
Queensland	1.66	1.92	1.79	1.52	1.75	1.64
South Australia	1.60	2.01	1.70	1.46	1.84	1.55
Western Australia	1.65	2.13	1.76	1.51	1.95	1.61
Tasmania	1.62	1.92	1.80	1.48	1.76	1.65
Northern Territory	1.93	2.33	2.16	1.76	2.13	1.97
Australian Capital Territory	. .	. .	1.54	. .	. .	1.41
Australia	**. .**	**. .**	**1.75**	**. .**	**. .**	**1.60**

Source: ABS, *Population Projections, Australia 1999–2101* (Cat no. 3222.0).

(a) Babies per woman.

Assumed age specific fertility

For the States and Territories, average ASFRs were calculated for the period 1996–1998. Differentials were then calculated between each State and Territory and Australia. The ASFRs for 2008 were calculated by multiplying the differentials by Australia's assumed 2008 ASFRs. The resulting ASFRs for 2008 were adjusted to ensure that they added to the assumed TFR for that State or Territory in 2008. A similar procedure was followed for the capital cities and State balances.

In 1999, it was assumed that younger women (below the age of 30) would contribute to just over half of Australia's total fertility (53%). By 2008 this could fall to 42% as women continue to have babies at older ages and therefore increase their contribution to total fertility. Victoria and the Australian Capital Territory were the only two States and Territories where older women (aged 30 years and over) were assumed to account for more than half of total fertility (52% each) in 1999. In contrast, women *below* the age of 30 were assumed to achieve almost two-thirds (65%) of the total fertility of the Northern Territory.

By 2008, older women could contribute to more than half of total fertility in each State and Territory, with the exception of Tasmania and the Northern Territory. Their contribution could be highest in Victoria and the Australian Capital Territory with 62% of total fertility accounted for by women aged 30 years and over in 2008.

8.8 ASSUMED FERTILITY OF WOMEN AGED UNDER 30 YEARS AND MEAN AGE AT CHILDBEARING

	UNDER 30 YEARS.....			MEAN AGE AT CHILDBEARING.....		
	Capital city	*Balance of State*	*Total*	*Capital city*	*Balance of State*	*Total*
	%	%	%	years	years	years
New South Wales						
1999	48.1	62.3	53.2	30.1	28.3	28.9
2003	43.1	57.5	48.1	30.7	28.9	29.6
2008	36.7	51.5	41.8	31.5	29.6	30.3
Victoria						
1999	44.3	57.8	47.7	30.6	28.9	29.6
2003	40.1	53.7	43.0	31.1	29.4	30.2
2008	34.9	48.5	37.2	31.7	30.0	30.9
Queensland						
1999	52.4	61.0	57.0	29.4	28.4	28.4
2003	47.3	56.3	52.2	30.0	28.9	28.9
2008	41.1	50.5	46.1	30.8	29.6	29.6
South Australia						
1999	48.4	60.7	51.5	30.1	28.6	29.2
2003	43.7	56.5	46.8	30.6	29.1	29.7
2008	37.8	51.2	40.9	31.3	29.7	30.4
Western Australia						
1999	50.0	65.0	54.2	29.8	27.9	28.8
2003	45.4	60.1	49.5	30.3	28.4	29.3
2008	39.8	54.1	43.7	31.0	29.1	30.0
Tasmania						
1999	52.9	64.8	60.0	29.3	28.0	28.0
2003	49.3	60.0	55.7	29.7	28.5	28.5
2008	44.7	54.0	50.3	30.3	29.1	29.1
Northern Territory						
1999	58.9	69.8	65.4	28.5	26.4	26.7
2003	53.9	64.3	60.0	29.1	27.1	27.4
2008	47.6	57.3	53.3	29.9	28.0	28.3
Australian Capital Territory						
1999	..	..	47.9	..	..	29.7
2003	..	..	43.4	..	..	30.2
2008	..	..	37.8	..	..	30.9
Australia						
1999	**..**	**..**	**52.8**	**..**	**..**	**29.0**
2003	**..**	**..**	**48.0**	**..**	**..**	**29.5**
2008	**..**	**..**	**41.9**	**..**	**..**	**30.3**

Assumed age specific fertility *continued*

In the capital cities, older women (aged 30 years and over) are assumed to increase their contribution to total fertility. In 1999, women aged 30 years and over were assumed to account for more than half of total fertility in Sydney, Melbourne, and Adelaide. In Perth, total fertility was split equally between younger an older women. While in Brisbane, Hobart and Darwin younger women accounted for most fertility. By 2008 the assumptions indicate that women aged 30 years and over may account for more than half of the total fertility in every State and Territory capital, from a low of 52% in Darwin to 65% in Melbourne.

Overall, women in the State balances have their babies at a younger age than women in the capital cities. This pattern is assumed to continue in the projections. In 1999, women below 30 years of age were assumed to contribute to well over half of total fertility in each State and Territory, from 58% in the balance of Victoria to 70% in the balance of the Northern Territory. By 2008, it is assumed that younger women (under 30 years of age) could still contribute most to total fertility in all State and Territory balances with the exception of the balance of Victoria.

Under the assumptions the mean age at childbearing is likely to be highest in Victoria and the Australian Capital Territory (30.9 years in 2008 compared to 29.6 and 29.7 years, respectively, in 1999) and lowest in the Northern Territory (28.3 years in 2008 compared to 26.7 years in 1999). In all the State and Territory balances, women living in Melbourne are assumed to have the highest mean age at childbearing in 2008 at 31.7 years, while women in the balance of the Northern Territory are assumed to have the lowest mean age at 28.0 years.

EXPLANATORY NOTES

INTRODUCTION

1 Registration of births is the responsibility of individual State and Territory Registrars and is based on the data provided on an information form completed by the parents. This information form is the basis of the data provided to the Australian Bureau of Statistics (ABS), by individual Registrars, for compilation into the aggregate statistics in this publication. Most data items are collected in all States and Territories and therefore statistics at the national level are available for most characteristics. Some States, however, collect additional information, and some of this is produced in this publication.

2 In the main, statistics in this publication refer to births registered by the State and Territory Registrars during the calendar year shown. There is usually an interval between the occurrence and registration of a birth and, as a result of delay in registration, some births occurring in one year are not registered until the following year or even later. This delay can be caused by either a delay by the parents in registering the birth, or a delay by the Registrar in registering the birth.

YEAR OF OCCURRENCE OF BIRTHS REGISTERED IN 1999

	YEAR IN WHICH BIRTH OCCURRED						
	1993 and earlier	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
State or Territory of usual residence	%	%	%	%	%	%	%
New South Wales	1.1	0.4	0.4	0.5	0.9	10.8	85.8
Victoria	—	—	—	—	—	8.2	91.7
Queensland	0.4	0.3	0.3	0.3	0.6	10.3	87.7
South Australia	0.7	—	0.1	0.1	0.3	8.1	90.7
Western Australia	0.3	0.1	0.2	0.2	1.0	9.2	89.0
Tasmania	0.5	0.4	0.7	0.7	1.3	9.7	86.7
Northern Territory	0.2	—	0.1	—	—	8.2	91.5
Australian Capital Territory	0.1	0.1	—	0.1	0.1	11.7	88.0
Australia	**0.6**	**0.2**	**0.3**	**0.3**	**0.6**	**9.7**	**88.4**

3 For births data, cell values less than three have been suppressed to assist in the preservation of confidentiality of information.

STATES AND TERRITORIES

4 In the main, statistics for States and Territories have been compiled and presented in respect of the State or Territory of usual residence of the mother. However, in the following table data have been presented on a State or Territory of registration basis. Births which took place outside Australia are excluded from the statistics.

BIRTHS, State or Territory of Usual Residence of Mother and State or Territory of Registration

	STATE OR TERRITORY OF REGISTRATION								
State or Territory of usual residence	*NSW*	*Vic.*	*Qld*	*SA*	*WA*	*Tas.*	*NT*	*ACT*	*Aust.*
New South Wales	84 769	1 005	364	45	15	6	5	575	86 784
Victoria	127	58 619	37	62	11	12	3	5	58 875
Queensland	629	35	45 801	9	20	4	4	—	46 503
South Australia	26	27	9	17 849	14	3	32	—	17 958
Western Australia	41	13	17	13	24 736	4	23	—	24 849
Tasmania	4	27	3	—	4	5 995	—	—	6 032
Northern Territory	23	13	29	28	9	3	3 471	—	3 576
Australian Capital Territory	72	3	4	3	—	—	—	4 173	4 253
Other Territories	11	—	—	—	26	—	—	—	40
Australia	85 702	59 742	46 263	18 007	24 835	6 026	3 537	4 758	248 870

5 In 1999 there were 408 births to women who usually lived overseas. These have been included in this publication and classified according to the State or Territory in which the birth was registered.

BIRTHS, Babies Born to Overseas Mothers

State or Territory of registration	*1994*	*1995*	*1996*	*1997*	*1998*	*1999*
New South Wales	33	26	34	50	54	231
Victoria	17	16	22	23	13	8
Queensland	35	43	59	114	89	111
South Australia	13	9	10	19	11	15
Western Australia	4	5	9	12	8	16
Tasmania	—	3	12	—	4	13
Northern Territory	6	—	4	—	—	9
Australian Capital Territory	—	11	7	4	4	5
Australia	**109**	**112**	**157**	**223**	**184**	**408**

6 As a result of an amendment made in 1992 to section 17(a) of the *Acts Interpretation Act 1901–1973* (Cwlth) the Indian Ocean Territories of Christmas Island and Cocos (Keeling) Islands have been included as part of geographic Australia, hence another category of the State and Territory classification has been created. This category is known as 'Other Territories' and includes Christmas Island, the Cocos (Keeling) Islands and Jervis Bay Territory.

STATES AND TERRITORIES *continued*

7 Prior to 1993 usual residence data for Christmas Island and Cocos (Keeling) Islands were included with offshore areas and migratory in Western Australia while usual residence data for Jervis Bay Territory were included with the Australian Capital Territory. In 1999 there were 40 births to mothers usually resident in Jervis Bay Territory, Christmas Island or the Cocos (Keeling) Islands.

ACCESSIBILITY/REMOTENESS INDEX OF AUSTRALIA (ARIA)

8 In the analysis, an average total fertility rate over 1997, 1998 and 1999 has been calculated for each Statistical Local Area (SLA). Each SLA has then been matched with an ARIA/SLA concordance and aggregated to be representative of the five ARIA regions.

1. Highly Accessible — relatively unrestricted accessibility to a wide range of goods and services and opportunities for social interaction.

2. Accessible — some restrictions to accessibility of some goods, services and opportunities for social interaction.

3. Moderately Accessible — significantly restricted accessibility of goods, services and opportunities for social interaction.

4. Remote — very restricted accessibility of goods, services and opportunities for social interaction.

5. Very Remote — locationally disadvantaged, very little accessibility of goods and services and opportunities for social interaction.

When using the ARIA regions for analysis, note should be taken of the substantial differences in the proportion of the Australian population in each ARIA region. The 'Highly Accessible' regions account for 81% of the estimated resident population while the 'Accessible' regions account for 11%, 'Moderately Accessible' regions account for 4% and the 'Remote' and 'Very Remote' regions both account for 1% each. Further, the 'Remote' and 'Very Remote' regions also have a large Indigenous population which impacts on the fertility rate for these regions.

INDIGENOUS BIRTHS

9 This publication includes a section on the number of Indigenous births for New South Wales, Victoria, Queensland, South Australia, Western Australia, Tasmania, and the Northern Territory. The data are regarded as being of sufficient quality to publish.

10 The population used to calculate Indigenous fertility rates for 1999 is based on *Experimental Projections of the Aboriginal and Torres Strait Islander Population, 30 June 1991 to 30 June 2001* (Cat. no 3231.0) and the *Experimental Projections of the Aboriginal and Torres Strait Islander Population, 30 June 1996 to 30 June 2006* (Cat. no 3231.0). These projections are, in turn, based on the 1991 and 1996 Censuses of Population and Housing.

RELATED PUBLICATIONS

11 Other ABS publications which may be of interest to users include:
Australian Demographic Statistics (Cat. no. 3101.0) — issued quarterly
Australian Demographic Trends (Cat. no. 3102.0) — issued irregularly
Causes of Death, Australia (Cat. no. 3303.0) — issued annually
Deaths, Australia (Cat. no. 3302.0) — issued annually
Experimental Projections of the Aboriginal and Torres Strait Islander Population (Cat no. 3231.0) — issued irregularly

12 A compendium of all demographic data for each State and Territory has been released in State or Territory specific publications, *Demography* (Cat. nos 3311.1–8). These publications are released each year for each State or Territory and contain a variety of demographic data.

13 Current publications produced by the ABS are listed in the *Catalogue of Publications and Products* (Cat. no. 1101.0). The ABS also issues, on Tuesdays and Fridays, a *Release Advice* (Cat. no. 1105.0) which lists publications to be released in the next few days. Both are available from any ABS office.

14 As well as the statistics included in this and related publications, additional information is available from the ABS Website at http://www.abs.gov.au and accessing Themes/Demography.

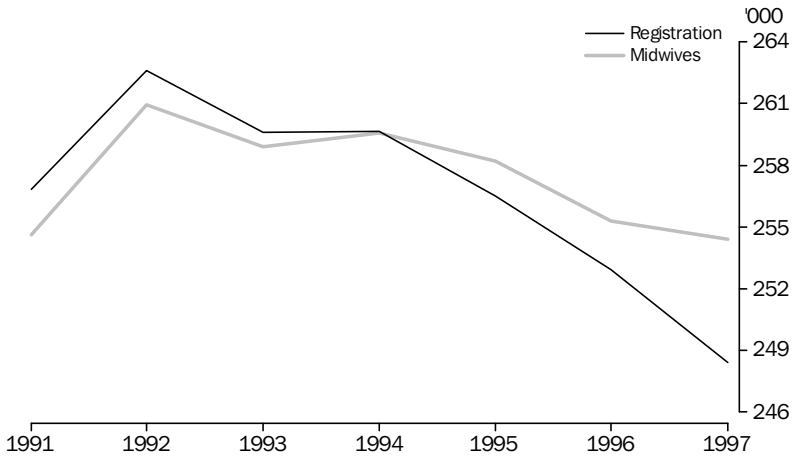
APPENDIX DIFFERENCES BETWEEN COLLECTIONS .....

BIRTH REGISTRATIONS COMPARED TO THE MIDWIVES' COLLECTION

As there are differing methods of collection, the Birth Registrations and Midwives' Collection (compiled by the Australian Institute of Health and Welfare's National Perinatal Statistics Unit), provide varying results. For example, according to the Birth Registrations, 248,400 live births occurred during 1997 and were registered up to 1999, while according to the Midwives' Collection 254,400 live births occurred during 1997, the highest discrepancy (5,690) since the Midwives' Collection commenced in 1991. One reason for this discrepancy is late registrations, which can be quite large for the first two years after the birth occurred. Other differences between the two collections could be the under-coverage of some home births in the Midwives' Collection. Adding further to the discrepancy in 1997, is the exclusion of some 800 confinements in Tasmania from Midwives' Collection that had not been available at time of their publication.

The most unusual difference between the two collections, and the most difficult to explain, is that Birth Registration occurrence statistics show estimates above that of the Midwives' Collection up until 1993 and below that since, decreasing further below each year. This change may be attributed to quality improvements made over the years to the perinatal minimum data set, on which the Midwives' Collection is based, and to the delay in birth registrations.

A1 DIFFERENT MEASURES OF BIRTHS, Year of Occurrence



Note: Data from 1998 are not yet available from Midwives' Collection.

Not every birth that occurs in Australia is registered or has a birth notification form filled out. However, the extent of this under-coverage is difficult to measure. In 1991 the number of registered births that occurred in that year was 2,000 more than for the Midwives' Collection, in 1993 it was only 100 less, in 1996 it was 3,100 less than the Midwives' Collection while in 1997 it was 5,960 less.

Indigenous Confinements

There are major differences between the Birth Registration Indigenous data and the Midwives' Indigenous data. From the 1996 Census-based projections, the coverage of Indigenous births from the 1997 Birth Registrations was estimated at 87%. Despite the high coverage there are still clear differences between Birth Registration and Midwives' data.

One explanation for the differences in the Indigenous data between the two datasets could arise from the midwife or medical practitioner filling in the Midwives' form on behalf of the parents and the parents filling in the registration form themselves: the midwife or medical practitioner may perceive the mother as non-Indigenous when the mother identifies herself as Indigenous.

GLOSSARY

Age-specific fertility rate Age-specific fertility rates are the number of live births (occurred or registered) during the calendar year, according to the age of the mother, per 1,000 of the female resident population of the same age at 30 June. For calculating these rates, births to mothers under 15 are included in the 15–19 age group, and births to mothers aged 50 and over are included in the 45–49 age group. Pro rata adjustment is made for births for which the age of the mother is not given.

Balance of State or Territory The aggregation of all Statistical Divisions (SD) within a State or Territory other than its Capital City SD. (Further details are included in *Australian Standard Geographical Classification (ASGC)* (Cat. no. 1216.0).)

Birth The delivery of a child, irrespective of the duration of pregnancy, who, after being born, breathes or shows any evidence of life such as heartbeat.

Birth interval Birth interval refers to the interval between two live births. It is usually estimated by subtracting a later birth date from the immediately preceding birth date. The interval between marriage and the first birth is known as the first birth interval, that between the first birth and the second as the second birth interval, that between the second birth and third birth as the third birth interval and so on. A birth interval can be open or closed. An open birth interval is that period following the birth of the last child before the interval is closed by the birth of another child.

Birth order Birth order refers to the numerical ordering of the total number of children born alive to a woman, including the present child. The first birth order refers to the first birth, the second birth order to the second birth, the third birth order to the third birth and so on.

Birth order-specific fertility rates Birth order-specific fertility rates are the number of live births of a specific order registered (or occurred) during the calendar year, according to age of mother, per 1,000 of the female estimated resident population of the same age at 30 June. The rates are calculated for each order of birth. The rates at each age (or age group) and birth order are added to provide total fertility rates by birth order, which makes it possible to examine the level of fertility at each birth order and the relative contribution of fertility at each birth order to the total fertility rate.

Capital city Capital city refers to the '05' Statistical Division of States and Territories as defined in *Statistical Geography: Volume 1—Australian Standard Geographical Classification (ASGC)* (Cat. no. 1216.0).

Completed fertility The completed fertility rate represents the average number of births a cohort of women have borne. It is obtained by summing the age-specific birth rates experienced by that cohort of women over their reproductive lives.

Confinements A pregnancy which results in at least one live birth.

Country of birth The classification of countries is the Standard Australian Classification for Countries (SACC). For more detailed information refer to *Standard Australian Classification for Countries (SACC)* (Cat. no. 1269.0).

Crude birth rate The crude birth rate is the number of live births registered during the calendar year per 1,000 estimated resident population at 30 June of that year. For years prior to 1992, the crude birth rate was based on the mean estimated resident population for the calendar year.

Estimated resident population Estimated resident population (ERP) are estimates of the Australian population obtained by adding to the estimated population at the beginning of each period the components of natural increase (on a usual residence basis) and net overseas migration. For the States and Territories, account is also taken of estimated interstate movements involving a change of usual residence.

Estimates of the resident population are based on adjusted (for underenumeration) census counts by place of usual residence, to which are added the number of Australian residents estimated to have been temporarily overseas at the time of the Census. Overseas visitors in Australia are excluded from this calculation.

After each census, estimates for the preceding intercensal period are revised by incorporating an additional adjustment (intercensal discrepancy) to ensure that the total intercensal increase agrees with the difference between the ERPs at the two respective census dates.

The concept of ERP links people to a place of usual residence within Australia. Usual residence is that place where each person has lived or intends to live for six months or more from the reference date for data collection.

Fetal death For fetal deaths a birthweight and period of gestation criterion apply:

The delivery of a child weighing at least 500 grams at delivery (or of at least 22 weeks gestation, if birthweight is unavailable) who did not, at any time after delivery, breathe or show any other evidence of life such as heartbeat.

The delivery of a child weighing at least 400 grams at delivery (or of at least 20 weeks gestation, if birthweight is unavailable) who did not, at any time after delivery, breathe or show any other evidence of life such as heartbeat.

Indigenous Persons who identify as being of Aboriginal or Torres Strait Islander origin.

Indigenous birth The birth of a live-born child where either the mother or the father was identified as being of Aboriginal or Torres Strait Islander origin on the birth registration form. Indigenous births in Indigenous population estimates/projections are those which result by applying assumed age-specific fertility rates to Aboriginal and Torres Strait Islander mothers in reproductive ages.

Intercensal discrepancy Intercensal discrepancy is the difference between two estimates of a census year population, the first based on the latest census and the second arrived at by updating the previous census date estimate with intercensal components of population change which take account of information available from the latest census. It is caused by errors in the start and/or finish population estimates and/or in estimates of births, deaths or migration in the intervening period which cannot be attributed to a particular source.

Macronutrients According to the 'National Nutrition Survey: Nutrient Intakes and Physical Measurements' publication (1995) p165, macronutrients are: '...protein, fat (total, saturated, monounsaturated and polyunsaturated), cholesterol, carbohydrate (total, starch and sugars), dietary fibre and alcohol'.

Marital status Two separate concepts are measured by the Australian Bureau of Statistics. These are registered marital status and social marital status. They have different personal characteristics and are independent variables with separate classifications. Marital status relates to registered marital status which refers to formally registered marriages or divorces for which the partners hold a certificate. Four categories of marital status are identified: never married, married, widowed and divorced.

Median age at childbearing The term refers to the age when approximately one-half of the women in a population have their children, either for a birth of particular birth order or for all births. It measures the age at childbearing within the female population, as distinct from the median age of mother at confinement which measures the median age of the women who gave birth in a particular year.

Median value For any distribution the median value (age, duration, interval) is that value which divides the relevant population into two equal parts, half falling below the value, and half exceeding it. Where the value for a particular record has not been stated, that record is excluded from the calculation.

Micronutrients According to the 'National Nutrition Survey: Nutrient Intakes and Physical Measurements' publication (1995) p164, micronutrients are: '...vitamins and minerals'.

Multiple birth A multiple birth is a confinement which results in two or more issue, at least one of which is live-born.

Neonatal death For neonatal deaths a birthweight and period of gestation criterion apply:

A neonatal death is the death within 28 days of birth of a child weighing at least 500 grams at delivery (or of at least 22 weeks gestation, if birthweight was unavailable) who after delivery, breathes or shows any evidence of life such as a heartbeat.

A neonatal death is the death within 28 days of birth of a child weighing at least 400 grams at delivery (or of at least 20 weeks gestation, if birthweight was unavailable) who after delivery, breathes or shows any evidence of life such as a heartbeat.

Wherever used, the definition adopted is indicated.

Net reproduction rate The net reproduction rate represents the average number of daughters that would be born to a group of women if they are subject to the fertility and mortality rates of a given year during their future life. It indicates the extent to which the population would reproduce itself. The net reproduction rate is obtained by multiplying the age-specific birth rates (for female births only) by the proportion of survivors at corresponding ages in a life table and adding the products.

Nuptial first confinement A nuptial first confinement is the first confinement in the current marriage and therefore does not necessarily represent the woman's first ever confinement resulting in a live birth.

Nuptiality Nuptiality relates to the marital status of persons and the events such as marriages, divorces and widowhood. Confinements and births are identified as being nuptial where the father registered was married to the mother at the time of birth, or where the husband died during pregnancy. Confinements and children of Indigenous mothers considered to be tribally married are classified as nuptial. Other confinements, and the children resulting from them, are classified as ex-nuptial whether or not both parents were living together at the time of birth.

Paternity-acknowledged birth A paternity-acknowledged birth refers to an ex-nuptial birth where paternity was acknowledged.

Perinatal death A perinatal death is a fetal or a neonatal death.

Previous births Previous births refer to children born alive (who may or may not be living) to a mother prior to the registration of the current birth in the processing period. In some States, legitimised and legally adopted children may also be included.

Due to variation in data collection and processing methods across States and Territories, different definitions of the concept of previous births have been applied.

All previous births of the mother includes all births prior to the current confinement, regardless of nuptiality and paternity.

Previous births of the current relationship where paternity was acknowledged includes all births prior to the current confinement where the current confinement relates to a nuptial birth, or an ex-nuptial birth where paternity was acknowledged.

Recommended Dietary Intakes (RDI) The levels of essential nutrients considered adequate to meet the daily nutritional needs of most healthy individuals. Larger amounts are generally recommended for pregnant or lactating women.

Registered marital status Registered marital status refers to formally registered marriages for which the partners hold a marriage certificate. In this publication the distinction is between married parents (nuptial births) and unmarried parents (ex-nuptial births).

Replacement fertility Replacement level fertility is the number of babies a woman would need to have over her reproductive life span to replace herself and her partner. Given the current mortality of women up to age 49, replacement fertility is estimated at 2.1 babies per woman.

Sex ratio The sex ratio relates to the number of males per 100 females. The sex ratio is defined for total population, at birth, at death and among age groups by appropriately selecting the numerator and denominator of the ratio.

Social marital status Social marital status is the consensual union status of a person with reference to another person in the household. In this publication data are only available from midwives' collection. The categories are married/de facto; single; and separated/divorced/widowed.

State or Territory of registration State or Territory of registration refers to the State or Territory in which the birth was registered.

State or Territory and Statistical Local Area (SLA) of usual residence

State or Territory of Statistical Local Area (SLA) of usual residence refers to the State or Territory and SLA of usual residence of:

the population (estimated resident population)

the mother (birth collection); or

the deceased (death collection).

In the case of overseas movements, State or Territory of usual residence refers to the State or Territory regarded by the traveller as the one in which he/she lives or has lived. State or Territory of intended residence is derived from the intended address given by settlers, and by Australian residents returning after a journey abroad. Particularly in the case of the former, this information does not necessarily relate to the State or Territory in which the traveller will eventually establish a permanent residence.

Total fertility rate

The sum of age-specific fertility rates (live births at each age of mother per female population of that age). It represents the number of children a woman would bear during her lifetime if she experienced current age-specific fertility rates at each age of her reproductive life.

Year of occurrence

Data presented on year of occurrence basis relate to the date the event occurred.

Year of registration

Data presented on year of registration basis relate to the date the event was registered.

LIST OF REFERENCES

Australian Bureau of Statistics 1999, *Australian Social Trends*, Cat no. 4102.0. ABS, Canberra.

Australian Bureau of Statistics 1999, *Estimated resident population by age and sex, States and Territories in Australia,* Cat no. 3201.0. ABS, Canberra.

Australian Bureau of Statistics 1998, *National Nutrition Survey: Nutrient Intakes and Physical Measurements—Australia 1995*, ABS, Canberra.

Australian Bureau of Statistics 1997, *National Nutrition Survey: Selected Highlights Australia 1995*, ABS, Canberra.

Australian Bureau of Statistics 1997, *Standard Australian Classification of Countries 1998,* Cat no. 1269.0, ABS, Canberra.

Abraham, B. & Webb, K. 2000, *Interim Evaluation of Voluntary Folate Fortification Policy*, AFNMU, draft paper.

Australian Institute of Health and Welfare 2000, *Australia's health 2000: the seventh biannual health report of the Australian Institute of Health and Welfare*, AIHW, Canberra.

Baum, F. 1994, *Choosing not to have children*, Vol.2, No. 3, 22–25.

Beets et al (eds) 1994. *Population and Family in the Low Countries 1993: Late Fertility and Other Current Issues*, Swets & Seitlinger, Netherlands.

Birrell, R. and T. Birrell 1987. *An Issue of People: Population and Australian Society*, Longman Cheshire, Sydney.

Callan, V. 1985, *Choices about children*, Longman Cheshire, Melbourne.

Carmichael, G. 1998, *Things Ain't What They Used To Be! Demography, Mental Cohorts, Morality and Values in Post-war Australia,* Presidential Address, Journal of the Australian Population Association, Vol. 15, No. 2, November 1998.

Daly, A. 1990, *Women in the workforce and family structure in Australia*, Journal of the Australian Population Association 7(1), 27-39.

Day P., E. A. Sullivan and others 1999, *Australia's Mothers and Babies 1997*. AIHW National Perinatal Statistics Unit: Perinatal Statistics Series No. 3, Sydney.

Department of Economic and Social Affairs 1999, *1997 Demographic Yearbook*, United Nations, New York.

Department of Economic and Social Affairs 1998, *1996 Demographic Yearbook*, United Nations, New York.

Department of Economic and Social Affairs 1997, *1995 Demographic Yearbook*, United Nations, New York.

McIntosh, A. 1998, *European population policy in the Twentieth Century Is it relevant to Australia?*, People and Place, Vol. 6, No. 3, 1–16.

McDonald, P. 1998, *Contemporary fertility patterns in Australia: First data from the 1996 Census*, People and Place, Vol. 6, No. 1, 1–12.

McDonald, P. 2000, *Low fertility in Australia: Evidence, causes and policy responses*, People and Place, Vol. 8, No. 2, 6–21.

National Health and Medical Research Council 1991, *Dietary Guidelines for Australians*, AGPS, Canberra.

National Health and Medical Research Council 1995, *Folate Fortification*, AGPS, Canberra.

Preston, S. 1986, *Changing values and falling birth rates*, Population and Development Review Supplement 12, 176-295.

Ram, B. and A. Rahim 1993, *Enduring effects of women's early employment experiences on child-spacing: the Canadian evidence*, Population Studies, 47, 307–317.

Rowland, D. 1998, *Cross-national Trends in Childlessness*, Working Papers in Demography, No. 73, Australian National University Research School of Social Sciences.

Rowland, D. 1997. *Approaches to Population Policy in Australia,* Working Papers in Demography no. 70, Research School of Social Sciences, Australian National University, Canberra.

Rowland, D. 1989, *Who's producing the next generation? The parentage of Australian children*, Journal of the Australian Population Association, 6(1):1–17.

South Australian Health Commission, Pregnancy Outcome Unit, Annual Reports 1997 and 1998.

Statistics Canada website, Age-specific fertility rate.

Statistics New Zealand 2000, *Demographic Trends 1999 (Cat. no. 03.009.0099)*, Statistics New Zealand, Wellington.

Stephen, E. 1999, *Assisted Reproductive Technologies: Is the Price Too High?*, Population Today, Vol. 27, No. 5, 1–8.

Shryock, H.S. and J.S Siegel and associates 1973, *The methods and materials of Demography*, U.S. Department of Commerce, Bureau of Census, Washington D.C., U.S.A.

United Nations, *World Population Prospects*, United Nations, 1996.

Ventura, S.J., J.A Martin, S.C. Curtin, T.J. Mathews T.J. and M.M. Park 2000, Births: Final data for 1998, National vital statistics reports, Vol. 48, No. 3, National Center for Health Statistics.

Webb, S. and D. Holman 1992, *A survey of infertility, surgical sterility and associated reproductive disability in Perth, Western Australia*, Australian Journal of Public Health, Vol. 16, No. 4, 376–382.

Whitney, E.N. & S.R. Rolfes 1999, *Understanding Nutrition (8th ed.)*, West and Wadsworth, Belmont, CA.

Yusuf, F. and I. Rockett 1981, *Immigrant Fertility Patterns and Differentials in Australia, 1971–1976*, Population Studies, Vol. 35, 413–424.

FOR MORE INFORMATION...

INTERNET	**www.abs.gov.au** the ABS web site is the best place to start for access to summary data from our latest publications, information about the ABS, advice about upcoming releases, our catalogue, and Australia Now—a statistical profile.
LIBRARY	A range of ABS publications is available from public and tertiary libraries Australia-wide. Contact your nearest library to determine whether it has the ABS statistics you require, or visit our web site for a list of libraries.
CPI INFOLINE	For current and historical Consumer Price Index data, call 1902 981 074 (call cost 77c per minute).
DIAL-A-STATISTIC	For the latest figures for National Accounts, Balance of Payments, Labour Force, Average Weekly Earnings, Estimated Resident Population and the Consumer Price Index call 1900 986 400 (call cost 77c per minute).

INFORMATION SERVICE

Data which have been published and can be provided within five minutes are free of charge. Our information consultants can also help you to access the full range of ABS information—ABS user-pays services can be tailored to your needs, time frame and budget. Publications may be purchased. Specialists are on hand to help you with analytical or methodological advice.

PHONE	**1300 135 070**
EMAIL	**client.services@abs.gov.au**
FAX	1300 135 211
POST	Client Services, ABS, GPO Box 796, Sydney 1041

WHY NOT SUBSCRIBE?

ABS subscription services provide regular, convenient and prompt deliveries of ABS publications and products as they are released. Email delivery of monthly and quarterly publications is available.

PHONE	1300 366 323
EMAIL	subscriptions@abs.gov.au
FAX	03 9615 7848
POST	Subscription Services, ABS, GPO Box 2796Y, Melbourne 3001

2330100001996
ISSN 1030-0150

RRP $26.00

Produced by the Australian Bureau of Statistics