Centre for Population Ageing Research (CEPAR)

Working Paper 2025/04

Understanding contemporary Australian fertility 2025[1]

Peter McDonald

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[1] I acknowledge the provision of unpublished data from the Australian Bureau of Statistics, unpublished joint work with Meimanat Hosseini-Chavoshi and unpublished data provided by Tom Wilson and Jeromey Temple. This paper was prepared in the context of the author's membership of the Centre of Excellence in Population Ageing Research (CEPAR), University of New South Wales.

Understanding contemporary Australian fertility 2025[1]

Peter McDonald

Emeritus Professor of Demography, Australian National University and Honorary Professor of Demography, University of Melbourne

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Introduction

In the recent past, there has been considerable coverage in the media in Australia of the level of the Australian fertility rate. This has been given impetus by the publication in December 2024 of a Total Fertility Rate (TFR) of 1.49 births per woman for the year 2023-24 (ABS 2024a), the lowest level of the TFR ever recorded. Media coverage of the low TFR has been marked by doom and gloom. For example. the prominent Australian Broadcasting Commission program, PM (Taylor 2024), reported that Australia's birth rate had 'hit rock bottom with severe consequences for its economic future'. The coverage stated that 'millions of young Australians have a deep-seated attitudinal problem in that they are saying that Australian conditions (climate change, housing affordability and gender equality) are inhospitable to having children'. No evidence was provided for either of these statements.

Birth trends in Australia are conventionally reported using the measure, the Total Fertility Rate (TFR), more precisely referred to as 'the period Total Fertility Rate'. It is reported as 'the number of births that Australian women are having'. Published by the Australian Bureau of Statistics (ABS) to two decimal places, this gives the TFR the impression of extreme accuracy on the number of births that Australian women are having but, in fact, the period TFR is a purely hypothetical measure. In 2023-24, it measured the average number of births that a group of Australian women would have if the fertility rate in 2023-24 at each single age from 15 to 49 remained constant for 35 years. In reality, in any 35-year period of Australian history, fertility rates at each age have changed significantly, not being even remotely constant.

In a 2010 paper, two award-winning European demographers, Tomas Sobotka and Wolfgang Lutz, argued that the TFR was so misleading that it was questionable whether it should be used at all. To quote them:

> There seems to be no policy-relevant question for which the period TFR would be the indicator of choice to be preferred over other existing measures.

The same point has been made in a very clearly argued online resource recently published by Dattani and Rodés-Guirao (2025).

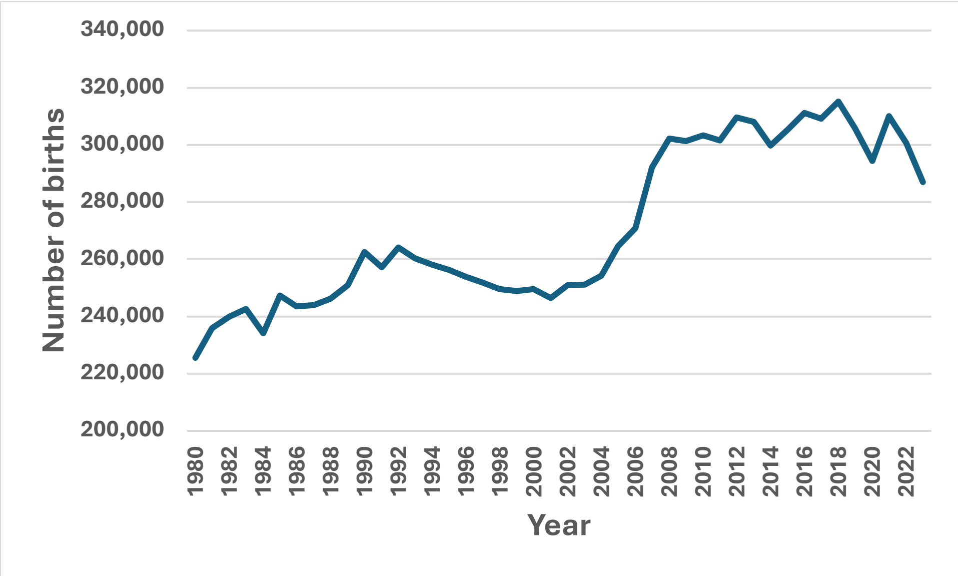
An alternative measure of changing fertility across time is Completed Cohort Fertility (CCF). It is the equivalent of the TFR except that the birth rates at each age are cumulated across the lifetimes of women all born in the same year. For Australian women born in 1980, the CCF had accumulated to an average of 1.94 births per women by age 41, that is, they have already had close to two children per woman.

The CCF is a real measure for a real group of women, not a hypothetical measure like the TFR and its most recent value is a long way above the reported 2023-24 TFR of 1.49. The Australian CCF has been falling very slowly since the end of the baby boom but, on current trends, at a rate that it will take many years to reach 1.49. The problem with the CCF measure is that it does not take account of the already-known experience of women at younger ages who were born in later years. However, this information is included if cumulated cohort fertility is calculated up to the present age of any birth cohort. The ABS does not publish any cohort fertility measures.

Cohort fertility can also be obtained from the standard census question on the number of babies that a woman has had which has been asked at the last four Australian censuses but, with unfortunately bad timing, the ABS has dropped this question from the 2026 Census.

In simpler terms, Figure 1 shows that since 2008, Australia has seen a flood of births rather than a drought as implied in recent media coverage.

Figure 1. Number of births registered, Australia, 1980-2023



Source. ABS 2024b, *Births Australia 2023*.

In this paper, I discuss why the TFR is a very misleading estimate of the number of births that Australian women are having and, in doing so, I present an alternative view of Australian fertility trends that is not doom and gloom. Indeed, Australian women have one of the highest fertility rates in the industrialised world. I discuss four reasons that the standard TFR is very misleading and then show how immigration contributes significantly to the number of Australian births.

Reason 1. Changes in the ages of childbearing (or the 'tempo effect')

The TFR shows misleading trends of the number of births that women have across their lifetime whenever the ages at which women have their births are changing. Figure 2 shows that the mean age of childbearing in Australia has been changing every year for over 100 years. From 1907 to 1975, the mean age of childbearing fell from 30.6 to 26.7.[2] The decline in the age at childbearing from the late 1940s to the early 1970s was the main cause of the postwar baby boom.

From 1975 onwards, the trend reversed with the mean age being progressively higher each year reaching 31.6 in 2022-23. This is equivalent to saying that, for over 100 years, the fertility rates at each age have never been constant thus rendering invalid the assumption of constant age-specific rates underlying the TFR.

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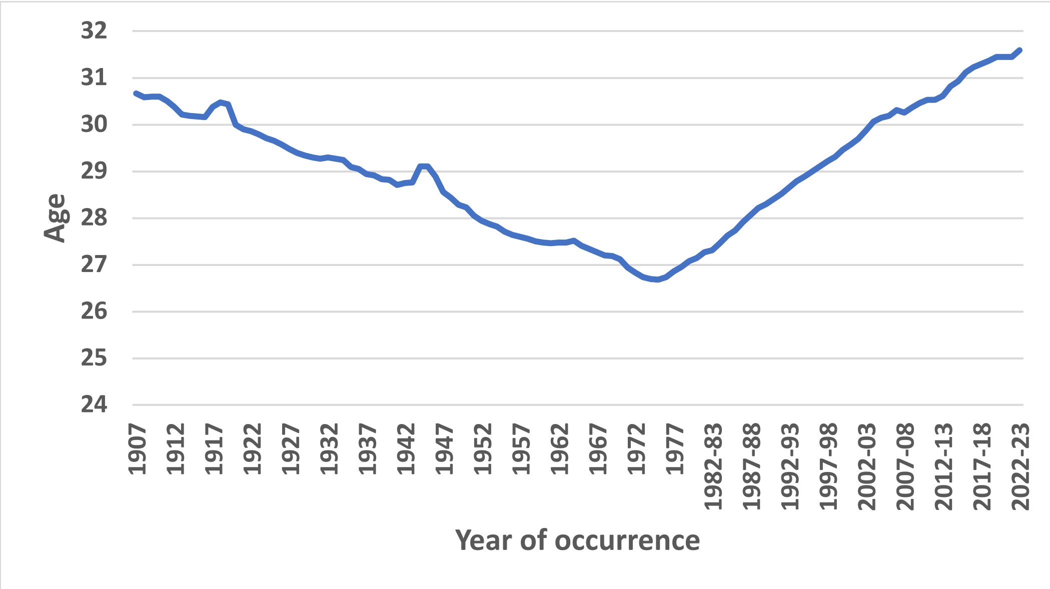
[2] There were a couple of upward blips in the two years following the two wars (1919 and 1946) reflecting births delayed by the absence of troops during the wars.

There was some slowing of the trend to older ages at birth in the years of higher fertility rates (2006-2012) but the long-term trend again applied from 2013 to 2019 although slowing again briefly from 2019-20 to 2021-22. The key question for future fertility is when will the long-term trend in later childbearing run its course?

Figure 2. Mean age of the fertility schedule, Australia 1907- 2022-23

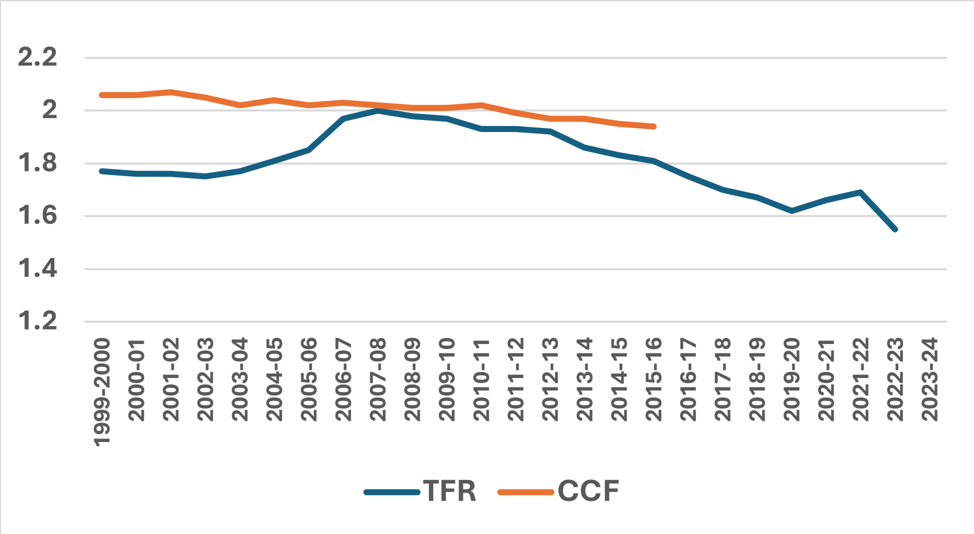


Source. Calculated from age-specific fertility rates by year of registration (1907-1981) and by year of occurrence (1982-83 to 2021-22). Author's database of Australian fertility.

When births are delayed by successive birth cohorts of women, as has been the case in Australia for the past 50 years, birth rates fall at younger ages in the present but rise at older ages in the future as women have the births that have been delayed. During this process, known as a tempo effect, for the TFR in any current year, the lower birth rates at younger ages are combined with rates at older ages that are lower than they will be when the younger women reach these ages. Consequently, the TFR will be lower than the 'underlying' level of lifetime fertility. An approximation of this understatement is provided by Figure 3 which shows the annual TFR compared with the CCF of the cohort born 31 years earlier. The CCF is always higher than the TFR. The same graph is shown in Dattani and Rodés-Guirao (2025) for Sweden, a classic example of the unreliability of the TFR. As described below, in Australia, the turning point from young ages to old ages has been consistently around the 31st birthday (McDonald 2020). It is as if childless women reaching age 30 begin to think more seriously about having a first birth.

Figure 3 shows that CCF is falling very gradually across time at a rate that will take many years to reach the most recent published value for TFR (1.49). In the demographic literature, this is the process of 'delay' followed by 'recuperation' developed by Ron Lesthaeghe (2001). For physiological, social and economic reasons, not all births delayed are recuperated and, consequently, the CCF for Australian women has been falling gradually overtime. Nevertheless, the level of recuperation in Australia has been relatively high leading to moderately high values of CCF. East Asian and Southern European countries that have very low fertility rates have similar patterns of delay to Australia but much lower levels of recuperation (Frejka et al. 2010, Frejka and Sobotka 2008).

Figure 3. Period TFR compared with the CCF for the cohort born 31 years earlier (including projection of CCF).

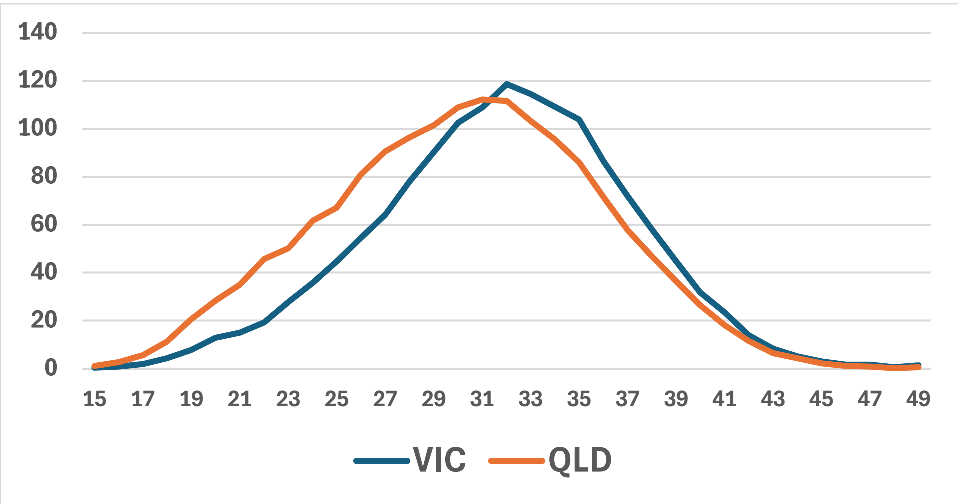


Note. The figure includes future estimates of CCF over 8 years by making assumptions about the future fertility of cohorts beyond age 41. As fertility is very low and relatively unchanging for women in their forties, the estimates are accurate (see below).

Source. Calculated from author's database of Australian fertility rates.

A simple example of the impact of the tempo effect is shown in the comparison of age-specific fertility rates in Queensland and Victoria in 2022-23 (Figure 4). Age at childbearing is later in Victoria than in Queensland leading to Queensland having higher rates below age 31 but lower rates from age 31 onwards.

Figure 4. Age specific fertility rates, Victoria and Queensland, 2022-23



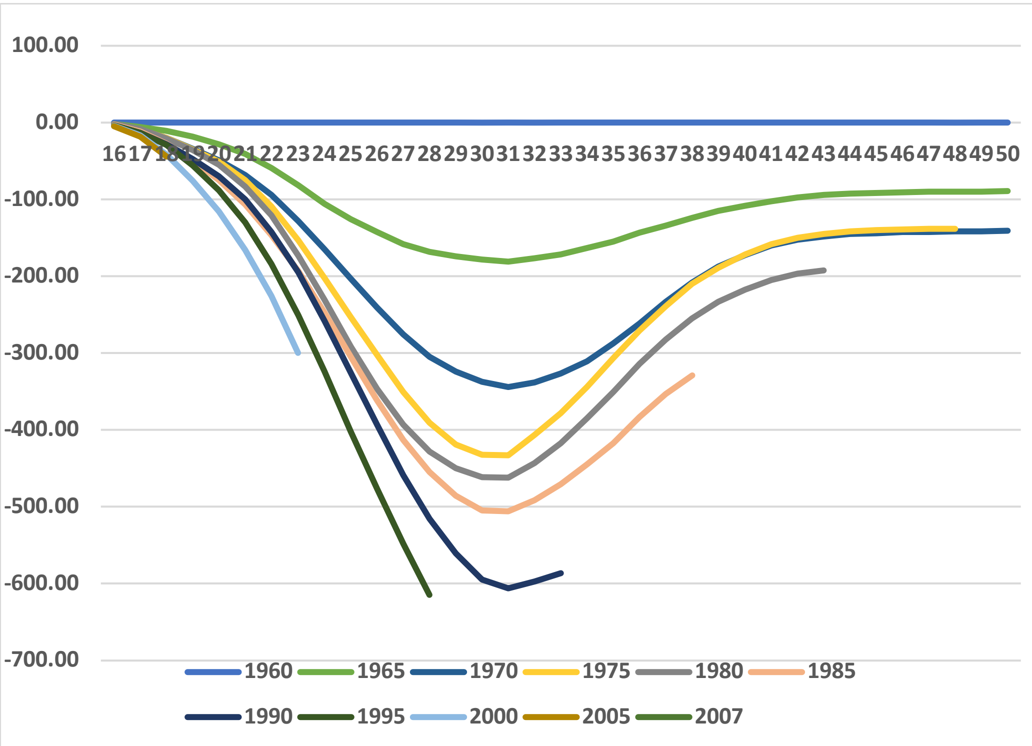
Source. Year of occurrence data provided upon request by the Australian Bureau of Statistics.

A process of delay and recuperation

The process of delay and recuperation for birth cohorts of Australian women is illustrated in Figure 5. In the figure, the blue line at 0.00 on the vertical axis represents the cumulated value of cohort fertility to the age shown on the horizontal axis for the cohort born in 1960. That is, cumulated cohort fertility at each age is standardised at zero for the 1960 birth cohort. The figure then shows the extent to which cumulated cohort fertility (per 1000 women) falls below that of the 1960 cohort at each age (exact age). For reference, CCF for the 1960 birth cohort was 2.16 births per woman or, in terms of the figure, 2156 births per 1000 women. CCF for the 1975 cohort (the end of the yellow line) falls 138 per 1000 below that of the 1960 cohort to 2018 per 1000 or 2.02 births per woman. In the 15 years between the two cohorts, CCF fell by only 0.14 births per woman.

Cumulated fertility for each successive cohort falls further and further below that of the 1960 cohort until exact age 31. For example, by age 31, cumulated fertility for the 1965 cohort fell below that of the 1960 cohort by 181 per 1000 women but by 606 per 1000 for the 1990 cohort. This shows the process of delay. However, after age 31, the gap between the cumulated fertility of each cohort from that of the 1960 cohort becomes smaller than it was as age 31. This is the process of recuperation. But no cohort recuperates to the 1960 level by age 50 and CCF tends to fall for each successive cohort. The other feature of Figure 5 is that almost all the recuperation occurs between age 31 and age 41. There is very little increase beyond age 41.

Figure 5. Cumulated cohort fertility by age for Australian birth cohorts of women relative to that of the 1960 birth cohort.



Note. See text for further explanation.
Source. Author's database of Australian fertility rates.

An equation for delay and recuperation

The features of Figure 5 suggest the use of three summary indicators for each cohort.

Where C(x, t) is Cumulated Cohort Fertility to the exact age x (xth birthday) of the cohort born in Year t:

Delay Ratio d(t): C(31, t)/C(31,1960)

> This ratio measures the extent to which cumulated fertility by the 31st birthday of a cohort born in Year t has fallen below the same measure for the cohort born in 1960 taken as a standard.

Recuperation Ratio r(t): C(41, t)/C(31,t)

> This ratio shows the extent to which cumulated cohort fertility increases for the cohort born in Year t between the 31st and 41st birthdays.

Completion Ratio c(50, t): C(50, t)/C(41, t)

> This ratio shows by how much fertility increases from the 41st birthday until the end of the childbearing years.

From the data used to construct Figure 5, Figure 6 shows the values of these ratios for Australia for birth cohorts from 1960 onwards. For cohorts born from 1960 to 1974, the Recuperation Ratio rises strongly as the Delay Ratio falls indicating strong recuperation. However, from the 1975 cohort to the 1981 cohort, the Recuperation Ratio rises only very slowly. The muted recuperation ratio for the cohorts born from 1975 to 1982 reflects the levelling off of the Delay Ratio for the same cohorts. In terms of chronological time, the levelling off of the Delay Ratio reflects the years from 2005 to 2012 when period fertility rates were high.

From the 1982 cohort onwards, the Delay Ratio falls more sharply. Results for the Recuperation Ratio are not yet available for birth cohorts from 1982 onwards, but it can be expected that the Recuperation Ratio will rise in the future echoing the decline in the Delay Ratio for these cohorts that has already occurred. The Completion Ratio remains very flat and close to 1 for the years for which it can be calculated. As stated above, there is almost no recuperation beyond age 41.

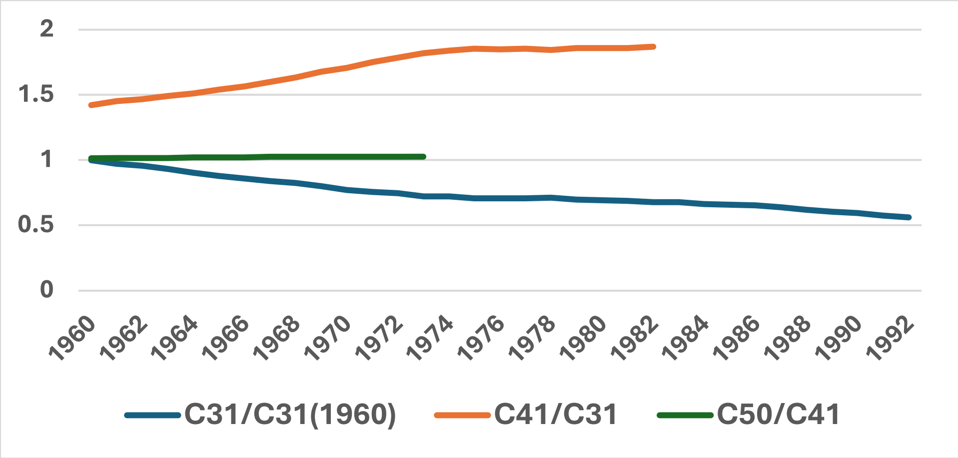
To conclude, the well-known tempo effect that led Sobotka and Lutz (2010) to question the publication of the TFR has produced levels of TFR in Australia that are well below the actual number of births that Australian women are having.

Future fertility is better estimated using cohort completion methods rather than by using the trend in the TFR. The ensuing cohort fertility rates at each age can then be translated back into annual or period measures (McDonald 2020).

Analysis of changes in cumulated cohort fertility by age segments

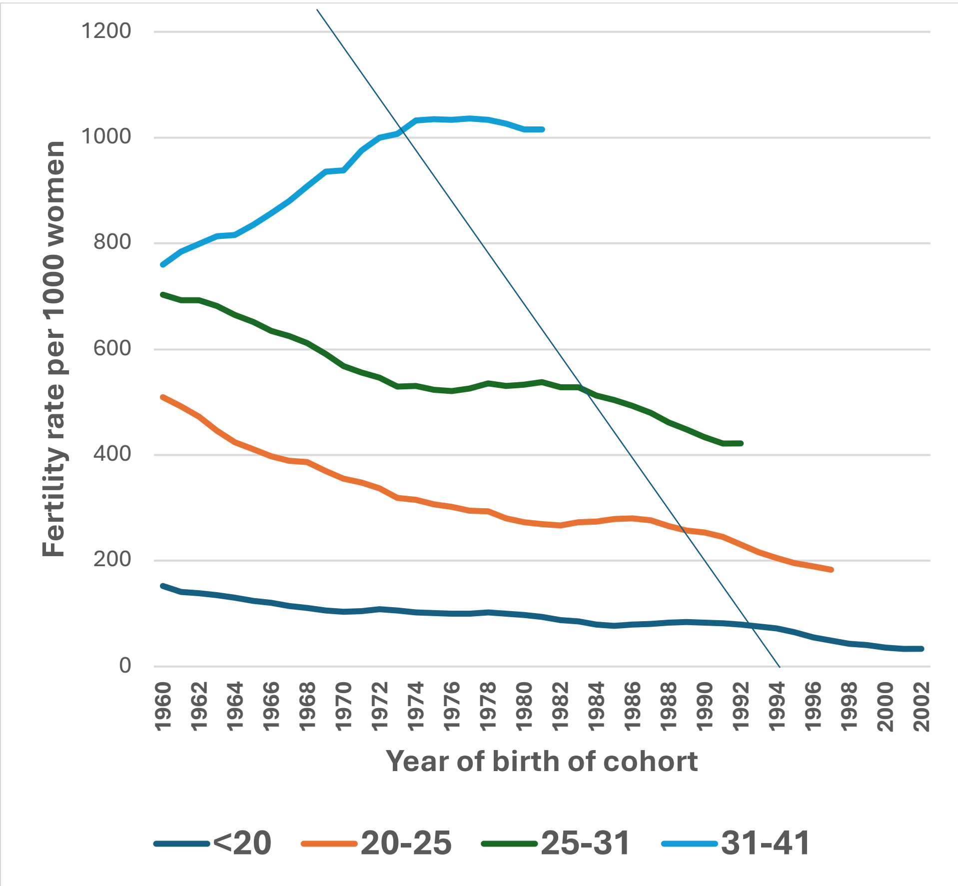
Despite the mathematical regularity of the trends in the delay, recuperation and completion ratios (Figure 6), these trends are determined by behaviour not by mathematics. Some of this behaviour is described in the following subsections which describe trends in cohort fertility within age ranges (Figure 7). The tempo effect is again clearly displayed in Figure 7. Cross-sectionally (calendar time), beyond the diagonal timeline, the flat level of fertility between ages 31 and 41 is combined with falling fertility in the younger age ranges leading to a lower period TFR.

Figure 6. Indicators of delay, recuperation and completion, Australian birth cohorts, 1960 to 1992



Source. Derived from author's database of Australian fertility.

Figure 7. Cohort fertility between exact ages, Australia, 1960 to 2002 birth cohorts of women, showing fertility before 2013-14 and from 2013-14 onwards.



Note. The diagonal straight line is a timeline representing the financial year, 2013-14

Source. Derived from author's database of Australian fertility.

Age Group Components of the Delay Ratio: Below age 20

In the recent past, much of the downward movement of fertility under the age of 31 has been due to falls in fertility under the age of 25. In a highly desirable trend, teenage fertility has fallen to a very low level (Figure 7, dark blue line). Huge falls in teenage fertility have taken place across all advanced countries. Evidently, on a global scale, teenage girls in advanced countries have taken the view that having a baby is not a wise choice and this has been facilitated by over-the-counter means of averting births. For the Australian cohort of women born in 1952 who had the highest level of teenage fertility, 26 per cent had had a baby by their 20th birthday. Today that percentage is just 3 per cent. This means that further falls in teenage fertility can have little impact on future fertility.

Age Group Components of the Delay Ratio: Ages 20-25

In recent years, the largest component of cohort fertility declines under the age of 31 has been in the age range from 20 to 25 (Figure 7, orange line).[3] This is the age group most affected by the behavioural change of delaying 'settling down'. Each successive cohort of young people in this age range has been more likely to be continuing in education, travelling, having fun and establishing themselves in their careers rather than settling down by having children. This is a trend that will not be reversed because it is due to women not wanting to have a baby, not by constraints that stop them from having a baby that they want. But the downward trend is likely to slow down as the fertility rate falls to a low level. At a low level, fertility in this age range becomes more selective of the minority who, for various reasons (religion, ethnicity, low education, etc.) are prone to have children at an earlier age.

Age Group Components of the Delay Ratio: Ages 25-31

Finally, between the ages of 25 and 31, fertility is at a relatively high level and the argument that fertility would be higher if constraining factors were reduced in strength becomes more relevant (Figure 7, green line). Constraining factors include family supports such as affordable childcare and economic factors such as housing, income and pursuit of career. Having a suitable partner also plays a part. In recent times, fertility has been falling in this age range but not as fast as at earlier ages. Data for the most recent years suggest that the fall in fertility might be slowing but there is still scope for further decline especially in the light of continuing high housing costs.

Recuperation and Completion: Ages 31-41 and 41 to 50

Figure 7 (light blue line) shows that, for the most recent cohorts reaching age 41, the birth rate for cohorts in the age range 31 to 41 has been flat at around 0.89 births per woman. But it should be noted that the most recent cohorts, born from 1975 to 1981, for which fertility between ages 31 and 41 has been constant were the cohorts for which cumulated fertility to age 31 levelled off during the baby boom years. The subsequent further decline in cumulated fertility by age 31 is likely to lead to a future increase in fertility between ages 31 and 41 as some delayed births are recuperated. The Centre for Population in the Department of the Treasury has supported this later proposition (Centre for Population 2024).

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[3] Fertility in this age range is affected by the inclusion in the population of a large number of temporary residents (international students and working holiday makers) whose fertility rate is close to zero.

Future levels of CCF

It can be shown that Completed Cohort Fertility (CCF) for the cohort born in Year t can be estimated as:

CCF(t) = C(50, t) = 1.493*d(t)*r(t)*c(t) where 1.493 is C(31, 1960).

The most recent known value of d(t) is for the 1992 birth cohort at 0.562. If we were to assume that r (t) and c(t) remained constant at their most recent recorded values, 1.871 and 1.027 respectively, CCF for the 1992 birth cohort can be estimated to be 1.61 births per woman. That is, the cohort turning 50 in 2042 will have had an average of 1.61 births per woman. Given the arguments above that r(t) may rise in the future, this is likely to be an underestimate. The Centre for Population, using similar methodology, has estimated a CCF of 1.7 births per woman for this birth cohort (Centre for Population 2024, p. 21). In summary, the number of births to women reaching 50 in **2042** will be well above the published TFR for **2023-24**.

Reason 2. Age is not a good predictor of whether a woman will give birth

The TFR (as the sum of age-specific fertility rates) uses the age of the woman as its only predictor of the possibility that she will give birth in a year. However, given strong preferences about the number of children (parity) and about intervals between births, parity and time since last birth are usually better predictors of the next birth than a woman's age. For example, a woman aged 27 who had her first birth 10 years ago is much less likely to give birth in the next year than a woman aged 37 who had her first birth two years ago.

When data are available, the annual fertility rate can be calculated based on both age and parity (PATFR, a two-parameter model) or age, parity and time since the most recent birth (PADTFR, a three-parameter model). These are alternative measures to the TFR to measure the annual incidence of births. Whelpton (1946) defined and calculated PATFR as long ago as 1946.

Using results for France, Rallu and Toulemon (1994) concluded that the PADTFR is a more satisfactory measure of the underlying fertility trend than is TFR because TFR is much more likely to be distorted by 'demographic upheaval'. The 'demographic upheaval' to which they referred is the tempo effect described in the previous section. Effectively, PADTFR corrects second and higher order birth rates for the disturbing effect of changes in the age of the first birth. It does not correct for the tempo effect on the first birth. Many demographers consider TFR to be sacrosanct, but PADTFR provides a more reliable (though still flawed) measure of the 'number of babies that women are having' than does TFR.

A comparison of PADTFR and TFR for Australia is shown in Figure 8. Notably, in a period when the age at first birth was increasing, PADTFR was almost always higher than TFR as also observed for France by Rallu and Toulemon (1994).

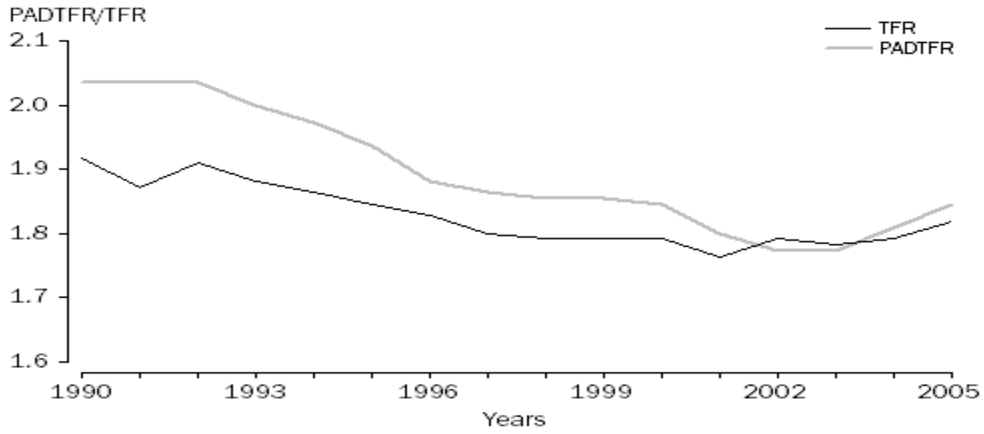
McDonald and Kippen (2011) applied the three-parameter model to the forecasting of births in Australia from 2001 to 2011 assuming constant three-parameter rates of birth. The model proved to be accurate even to the point of predicting a turning point in the Total Fertility Rate from 2004 (see Figure 8). This accuracy was the result of two circumstances:

. The long-term increase in age at first birth slowed down during the projection period meaning that first births were less likely to be further delayed, and

. for second and higher order births, reflecting strong preferences, the age-parity-duration specific birth rates had remained almost constant for over 20 years prior to the projection and, also, based on the results, appear to have done so during the projection period.

They concluded that the movement in the age-based TFR during the projection period was due not to changes in fertility rates but mainly to the structure of the population at risk according to the three parameters. This result accords with Raftery & Ševčíková (2023) who concluded that, in the short term, typically within a decade, forecasting errors related to birth rates can be attributed to methodological shortcomings rather than to unexpected social changes.

Figure 8. The Age-Based Total Fertility Rate (TFR) and the Parity-Age-Duration TFR (PADTFR), Australia **-** 1990 to 2005



Source: Copied from McDonald and Kippen, 2011.

McDonald and Hosseini-Chavoshi (2025) have recently forecast Australian births in the period from 2024 to 2030 using the three-parameter model. The resulting numbers of births were 16-23,000 higher (around 6 per cent) in a year than the most recent ABS projections (ABS 2024c and unpublished projections provided by ABS). From the same study, the differences between TFR and PADTFR for recent years are shown in Table 1. Evidently, the more accurate PADTFR was always higher than the TFR. The conclusion is that the Australian fertility rate and the projected number of births rise when the additional two parameters, parity and years since the most recent birth, are considered.

Table 1. The Age-Based Total Fertility Rate (TFR) and the Parity-Age-Duration TFR (PADTFR), Australia, 2016-17 to 2020-21

Year	TFR	PADTFR
2016-17	1.75	1.91
2017-18	1.70	1.87
2018-19	1.67	1.84
2019-20	1.62	1.79
2020-21	1.66	1.79

Source. McDonald and Hosseini-Chavoshi (2025), year of occurrence data.

Reason 3. Rates by year of registration or by year of occurrence

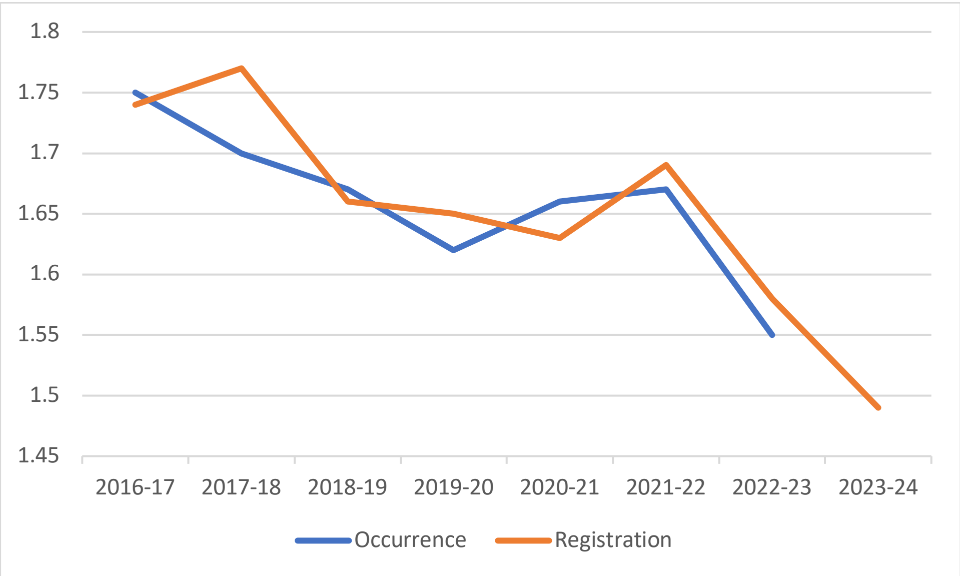
When measuring trends in annual birth rates, it is clearly preferable to use rates based on the year in which the births occurred rather than on the year they were registered.

The TFRs published on the ABS website and in the annual publication, *Births Australia*, show rates by the calendar year of registration of the births, not by the year in which the births occurred. The ABS quarterly publication, *National, State and Territory Population*, includes a table showing TFRs for the past six years where the first five of these TFRs are based on year of occurrence data while the sixth or most recent is based on year of registration data. The switch from year of occurrence data to year of registration data in this table is not made obvious. The note explaining the inconsistency in the column of rates is very obscure and would be missed by almost all readers. Age-specific fertility rates based on births by year of occurrence are not published at all by the ABS, being made available only upon request.

When *National, State and Territory Population* is published, it is the TFR for the most recent year (by year of registration) which first hits the media as reflecting 'the number of births that Australian women are having' and it is compared with the rates for previous years which are based on year of occurrence. For the reasons already described, the period TFR is not a good measure of the number of births that women are having, but, in addition, the appropriate TFR for time trends is the TFR based on births by year of occurrence, not births by year of occurrence.

Normally the differences between year of registration data and year of occurrence data are small but TFRs by year of occurrence and by year of birth have differed in recent years (Figure 9) primarily because state and territory registrars have been late in providing birth registration data to the ABS. Consequently, the trend data by year of registration can be misleading.

Figure 9. Total Fertility Rates by Year of Registration and Year of Occurrence, Australia, 2016-17 to 2023-24



Sources. Successive issues for the December quarter of the ABS publication: *National, State and Territory Population* (previously entitled *Australian Demographic Statistics*).

Reason 4. The impact of temporary migrants on Australian fertility

Temporary residents such as students and working holiday makers who stay more than one year are included in the denominators for the age-specific fertility rates, but their fertility is close to zero as shown in Table 2.

In this section, non-temporary residents of Australia are defined as the total of Australian citizens and permanent residents and New Zealand citizens who are resident in Australia. The remainder of the Estimated Resident Population are temporary residents. Table 3 shows the percentage that female temporary residents represent of the total Australian population in the fertility age groups.

Table 2. Mean number of children ever born, international students, working holiday makers and all Australian women, 2021 Census

Age Group	Mean Number of Children Ever Born		
	All Australian women	International students	Working Holiday Makers
20-24	0.11	0.02	0.00
25-29	0.46	0.10	0.00
30-34	1.03	0.30	0.01

Source. ABS Tablebuilder, 2021 Census.

Table 3. Temporary residents as a percentage of the total Australian population, females aged 15-49 years, 2026 (experimental estimates)

Age group of women	% of ERP
15-19	5.0
20-24	10.9
25-29	15.3
30-34	16.9
35-39	11.0
40-44	5.3
45-49	3.1

Source. Wilson and Temple (2025, unpublished).

As is evident from Table 3, female temporary residents are concentrated in the main childbearing ages and their numbers are sufficient to affect the TFR if their age-specific fertility rates are very different from those of the non-temporary population. Unfortunately, no data are available on births to temporary residents, so it is not possible to make exact estimates of their impact on the TFR.

Some of the largest groups of temporary residents in the main childbearing ages (international students, working holiday makers, graduates) are extremely unlikely to give birth. However, some other groups may have a birth (partners of Australian citizens and applicants for permanent residence on bridging visas and women whose partners hold a temporary visa.). The potential maximum impact of temporary residents on the TFR can be assessed by assuming that their TFR is zero. Assuming zero fertility for temporary residents. using the distribution shown in Table 3 and Australian age-specific fertility rates in 2024 (TFR = 1.51), we can estimate that the TFR of the non-temporary population would be 1.75 births per woman. At this level, excluding temporary residents, Australian women would have one of the highest fertility rates among OECD countries, a very different impression than is provided by commentators in the media. However, the fertility rate of temporary residents will be above zero to an unknown extent.

The best indicator of the fertility of the temporary population is given by the number of children ever born as recorded in Australian censuses. Here, results from the 2016 Census are used because the temporary population at the time of the 2021 Census was low and biased because of COVID (Table 4). For the main childbearing ages, 20-34, the table indicates that the fertility of temporary migrants is about one-quarter of the fertility of the non-temporary population[4]. On this basis, the TFR of the non-temporary population can be estimated to be about 1.69 births per woman in 2023-24.

Table 4. Average number of children ever born to temporary and non-temporary female residents of Australia, 2016

Age Group	Average number of children ever born	
	Non-temporary	Temporary
15-19	0.02	0.00
20-24	0.18	0.03
25-29	0.59	0.15
30-34	1.20	0.47

Source. Derived by the author from ABS Tablebuilder 2016 Census.

Finally, Table 5 indicates the potential impact of movements of temporary movements on the change in Australia fertility from 2020 to 2024. The table shows an indicator of the changing size of the temporary population relative to the ERP (Estimated Resident Population) in the ages 20-29 where these two groups of temporary residents are concentrated. The ratio is imperfect in that a small percentage of international students are aged under 20 or 30 and over. Also, a small percentage of international students and a larger percentage of Working Holiday Makers do not count into the ERP because they do not stay for the 12 out of 16 months required to count into the population. Given these limitations, the table shows that COVID had a very large impact on the size of the temporary population in these very low fertility visa categories.

Table 5 also shows in comparison, the TFRs for Australian-born and Overseas-Born women in the years from 2020 to 2023. The TFRs shown are three-year moving averages, the average for the year shown in the table and the preceding two years. It is notable that the TFR for Australian-born women, with no correction for the tempo effect or for the impact of parity or years since most recent birth, remains constant at around 1.7 births per woman. This is in keeping with the estimate of TFR for the non-temporary population already made above but both measures will be underestimates because of Reasons 1-3 discussed above.

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[4] Some births, particularly for the temporary population, may have been born outside Australia.

However, the important trend in Table 5 is that the TFR for Overseas-born women falls dramatically in 2023 (the average of 2021, 2022 and 2023) which can be associated with the substantial rise in International Students and Working Holiday Makers in 2023. As the ratio for these very low fertility groups rises again in 2024, we can expect that, when published in November 2025 in *Births Australia 2024*, the TFR will be even lower than in 2023. Yet, for the reasons given above, this rate will be very misleading and is likely to be associated with more doom and gloom in the media about low Australian fertility. In contrast, we already know that the number of births registered in the first nine months of 2024 is higher than the number for the same period in 2023 (ABS 2025).

Table 5. The ratio of the numbers of International Students and Working Holiday Makers in Australia to the Estimated Resident Population of Females aged 20-29 compared with the Total Fertility Rates for Australian-born and Overseas-born Australian women

	2020	2021	2022	2023	2024
Ratio (%) of Students and WHMs present in Australia to ERP Ages 20-29, females	19.2	12.2	11.7	20.1	21.2
TFR, Australian-born	1.68	1.67	1.70	1.69	
TFR, Overseas-born	1.55	1.59	1.51	1.34	

Notes. WHM = Working Holiday Makers; ERP = Estimated Resident Population. The TFRs in this table are three-year moving averages

Sources. The ratios in the first line are derived by the author from Department of Home Affairs tables on temporary residents in Australia and ABS ERP data. The TFRs are from ABS *Births Australia*, issues from 2020 to 2023.

Impact of migration upon future births

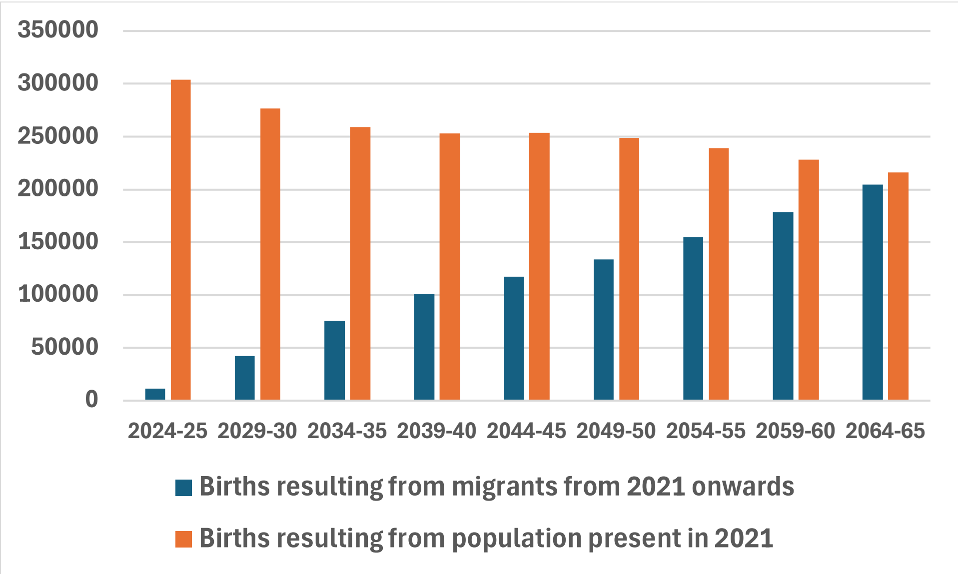
While the TFR for women born in Australia is much higher than for women born overseas, migration has a very significant effect on the number of births occurring. This is because migrants (essentially, permanent migrants) add to the population of childbearing age. Permanent migrant women are young and, in general, they have their children in Australia rather than overseas. Before migrants themselves grow old, they have had their children and their grandchildren.

The effect of migration on the number of births in Australia over the next 40 years is shown in Figure 10. In two projections supplied by Tom Wilson, net overseas migration is alternatively assumed to be 210,000 per annum and zero. Fertility (TFR = 1.65) is constant in both projections and the trend in mortality is the same in each projection. Births resulting from migrants arriving after 2021is the difference in the projected number of births in the two projections. The figure shows that, by 2064-65, the number of births to migrants arriving after 2021 and their descendants is almost the same as the number resulting from persons already in Australia in 2021.

The level of net overseas migration assumed in the Wilson projections, 210,000, is consistent with the long-term level of the government's permanent migration program. McDonald and Hosseini-Chavoshi (2022) have shown that the number of births would remain constant at its present level in Australia if the TFR (assumed at 1.65) remained constant and net overseas migration remained constant at 100,000 per annum. In this stable scenario, deaths would rise to match the number of births, and the population growth rate would be zero in the long-term. Any migration level above 100,000 per annum would lead to births exceeding deaths and a positive population growth rate in the long-term.

Media concern about low fertility focuses upon its impact on the ageing of the population. The extent of population ageing is strongly influenced by the level of net overseas migration (Table 6). The table shows that, so long as net overseas migration is above 100,000 and fertility is constant at 1.65 births per woman, population ageing should not be a major concern. If fertility falls below 1.65, a higher level of net overseas migration than 100,000 per annum would be required to sustain population growth at least at zero. This would not be a challenge as net overseas migration is already well above 100,000 per annum.

Figure 10. Births to migrants arriving from 2021 onwards and their descendants compared with births resulting from the population present in 2021 and their descendants, Australia 2024-25 to 2064-65



Source. Derived from unpublished projections prepared by Tom Wilson for the ARC Centre of Excellence in Population Ageing Research (CEPAR) (TFR constant at 1.65, NOM = 210,000).

Table 6. Percentage of population in 2064-65 aged 65 years and over, three projections with same fertility and mortality but varying net overseas migration

Level of Net Overseas Migration	% of Population Aged 65+ in 2064
0	33.5
100000	27.0
210000	23.6

Note. All projections assume TFR is constant at 1.65 and all assume the same level of mortality.

Sources. Unpublished projections prepared by Tom Wilson for the ARC Centre of Excellence in Population Ageing Research (CEPAR) and McDonald and Hosseini-Chavoshi (2022).

Concluding remarks

The paper has discussed four reasons that the initial estimate of the Total Fertility Rate published by the Australian Bureau of Statistics is a very unreliable measure of ‘the number of births that Australian women are having’. The first reason is the well-known ‘tempo effect’ that applies when the mean age at childbearing is increasing. The conclusion here is that cohort fertility estimates should be used. It is estimated that completed cohort fertility for the 1992 birth cohort (reaching age 50 in 2042) will be between 1.6 and 1.8 births per woman, well above the 2023 TFR of 1.5.

The second reason is that fertility can be predicted using parity and time since most recent birth in addition to age. Use of the additional parameters increases the number of projected births by about six per cent as it partially corrects for the tempo effect. The third reason is that the TFR published initially by the ABS is based on births by year of registration rather than by year of occurrence and the two can differ significantly. Finally, the published TFR includes temporary residents in the denominator of the age-specific rates and the fertility rate of temporary residents is very low, estimated to be about one quarter that of non-temporary residents. Excluding temporary residents from the denominators would increase the 2023 TFR from a published 1.5 to 1.7 births per woman, before making any additional correction for the tempo effect.

The paper also shows that migration (permanent) has a significant effect on the number of future births in Australia and that this is ignored by commentators who suggest the economy is in severe danger from population ageing.

It is also concluded that Completed Cohort Fertility is falling slowly across time. However, it remains possible that a new trend will emerge whereby higher percentages of women have no children in which case, fertility would fall faster. This is a trend that needs to be closely monitored. In this context, it is a mistake that the ABS, for the first time in five censuses, has removed the question on the number of babies that a woman has had from the 2026 Census.

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