



THE BIRTH DEARTH

FALLING FERTILITY RATES, FEWER BABIES

DALE KNAPP, DIRECTOR

Executive Summary

A Birth Dearth

During 2007-2018, the number of babies born in Wisconsin declined more than 12% to just over 64,000, the fewest since 1973. The general fertility rate, or the rate at which women ages 15 to 44 give birth, has declined to its lowest level since 2002. If this pattern were to continue, the number of deaths could exceed births sometime over the next decade. A natural decrease in population is unprecedented in Wisconsin.

While these patterns are troubling for a state with significant demographic challenges, a deeper dive into the numbers shows some positive trends. Much of the decline in both births and birth rates is due to a large drop in teen pregnancy. During 2007-2017, the number of babies born to teen mothers declined from 6,320 to under 2,600. The decline in teen fertility after 2007 accounted for more than 40% of the drop in births and three quarters of the fall in general fertility.

For decades, policy makers have focused on reducing teen pregnancy because teen mothers are often unprepared for parenthood and are more likely to be single parents. Children born to teen mothers are more likely to live in poverty, struggle to acquire basic literary skills, and underperform in school. They are also more likely to continue that cycle by becoming teen mothers themselves.

A second factor in Wisconsin's "birth dearth" appears to be a delay in childbirth. Since 2007, birth rates among women 20 to 24 years old have declined precipitously, while rates for women in their 30s have climbed. During 2007-2017, the median age of a mother having her first born child increased almost two years, from 24.3 to 26.2. While much of the increase was driven by reductions in teen births, the median age of first birth among women 20 or older also rose.

A third factor, the inability to retain millennials, portends long term challenges for the state. As the oldest millennials – those who were 15 to 19 years old in 2000 – aged into their late 20s and early 30s when fertility rates are highest, their numbers in Wisconsin declined nearly 8%. Among women five years younger, those who were 15 to 19 in 2005, declines were significantly larger. As the state loses these young women, and possibly those in Generation Z behind them, it can expect fewer babies in the future.

The decline in births and birth rates facing Wisconsin are also occurring across the country. Failure to reverse this decline could have significant consequences for economic growth and for the funding of major federal programs such as Social Security and Medicare.

There are no easy answers, but we only have to look to Japan to see some of the consequences of declining fertility and births, including a rapidly aging population and a shrinking workforce.

A Birth Dearth

Falling Fertility Rates, Fewer Babies

Dale Knapp, Director

In 2018, 64,008 babies were born in Wisconsin, the fewest since 1973. The state's fertility rate – the number of births per 1,000 women ages 15 to 44 – dipped under 60 for the first time since 2002. These are troubling trends for a state with major long term demographic challenges.

Wisconsin's natural population increase – births minus deaths – has dropped from nearly 27,000 in 2007 to just over 10,000 in 2018. Should births continue to fall at their current pace, the state's natural increase in population could turn to a natural decrease sometime over the next decade.

However, beneath these larger trends are some encouraging underlying patterns. A significant factor in the drop in births is fewer babies born to teenage mothers. Reducing teen pregnancy has long been a goal of public policy both in Wisconsin and nationally.

In addition, there are indications that part of the recent decline in births is due to young people delaying childbirth, rather than having fewer children. National surveys show that the "ideal" number of children has remained roughly unchanged for decades. If true, the number of births could reverse course soon as millennials move through their thirties and complete family formation.

WISCONSIN'S BABY CHALLENGE

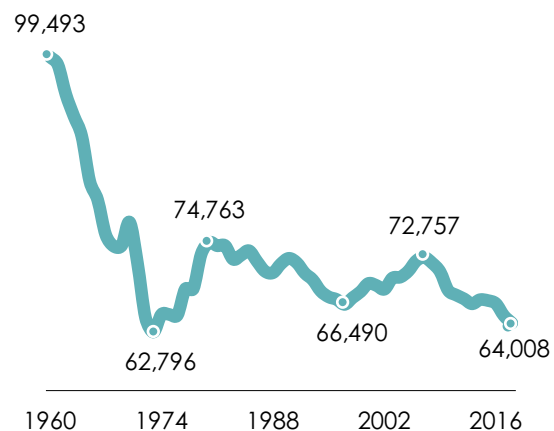
Since 1960, the number of babies born in Wisconsin has moved cyclically. From the end of the baby boom until 1973, births fell by more than a third, from nearly 100,000 to just under 63,000. Since then, births have alternated between periods of increase and decrease, each lasting seven to 17 years (see Figure 1). The most recent down-

turn began in 2008 and is now a decade long, with the number of births dropping 12% since the most recent peak in 2007.

The length of this latest retrenchment was somewhat unexpected. Analysts initially attributed the drop to the Great Recession as birth rates generally fall during economic hard times. They expected the number of births to reverse direction as the recent economic expansion took hold in 2012. In fact, in 2013 state demographers projected births to begin rising and to exceed 70,000 in 2014 and after. Instead, birth rates have continued to decrease.

This "birth dearth" is not unique to Wisconsin. During 2007-2018, only North Dakota and the District of Columbia experienced increases in the number of babies born. Wisconsin's 12% decline was about average; it was the 22nd largest drop among the states. The state's decline was smaller

FIGURE 1: Wisconsin Births Falling
Number of Births by Year*, 1960-2018



*Source: Wisconsin Department of Health Services, WISH

Since 2007, the number of Wisconsin births has declined 12%. If not reversed, the state could see more deaths than births within five or six years.

than drops in Illinois (-19.9% and 4th largest decline) and Michigan (-12.4% and 21st). Minnesota (-8.7%) and Iowa (-7.7%) also had fewer births in 2018 compared to 2007, but declines were smaller than in the Badger State.

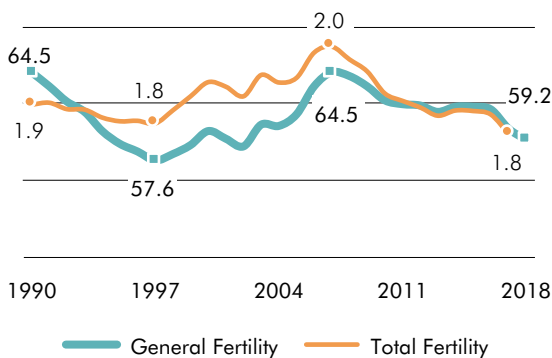
Within Wisconsin, the magnitude of the birth problem varies. In Calumet County, total births in 2015-2017 were 26% less than in 2005-2007.¹ In another six counties, declines topped 20%. By contrast, gains were seen in seven counties, led by a 21% jump in Trempealeau County.

DECLINING FERTILITY RATES?

At its most basic level, fewer births are the result of fewer women of childbearing age or a decline in the rate at which these women have children (or both). First, we examine the latter, fertility rates.

¹ Births by county are not yet available for 2018. Because the number of births are relatively small and volatile in less populous counties, three year totals are used to calculate change.

FIGURE 2: General & Total Fertility Falling
Two Measures of Fertility, 1990-2018*



*Total fertility rate not available for 2018

There are several ways to measure fertility. The *general fertility rate* is the number of births in a year for every 1,000 women ages 15 to 44; it probably is the most analyzed rate. Age-specific birth rates are calculated in the same way, but for narrower age groups. For example, the number of births in a year for every 1,000 women ages 25 to 29, or ages 30 to 34. The general fertility rate is simply a combination of all age-specific birth rates, with changes in these underlying rates driving changes in the general rate.

General and age-specific rates provide information about actual births in a year. By contrast, the *total fertility rate* is hypothetical and forward looking. It measures the number of children a young woman of 15 would be expected to give birth to over her lifetime given current age-specific birth rates. Like the general fertility rate, movement in age-specific rates drives changes in this rate.

General Fertility

Wisconsin's general fertility rate has fluctuated since 1990, moving mostly in sync with the number of births. Most recently, the rate has dropped from 64.5 births per 1,000 women in 2007 to 59.2 births per 1,000 in 2018 (see Figure 2, teal line). While worrisome, the drop was less than half the nine point national decline from 69.3 to 60.3 during this same period.

The recent shift down also is less severe than during the shorter 1990-1997 period. In 1990, Wisconsin's fertility rate stood at 64.5. Over the ensuing seven years, it fell almost seven points to 57.6 in 1997. It then reversed course, and by 2007 it was back to its 1990 level.

Fertility rates fluctuate for a variety of reasons. Economic uncertainty is thought to play an important role as rates generally drop during a recession. When unemployment rises, child bearing is often delayed until job prospects improve.

The 2007-2009 recession was likely a key factor behind the shift in general fertility after 2007. However, both the state and national economies have been strong over the past five to seven years and rates have not rebounded.

Some have attributed the decline to greater personal economic uncertainty among young women due in part to high student loan balances and the cost of childcare.

On a purely statistical basis, the general fertility rate also can shift because of changes in the age distribution of women. It will be higher when a relatively large cohort ages into their peak child-bearing years, and will fall as this group ages into their late thirties and early forties when birth rates are lower.

Total Fertility

Wisconsin's total fertility rate also has been on a steady decline, falling from 2.0 in 2007 to 1.8 in 2017 (see Figure 2, orange line). In other words, the age-specific birth rates in 2007 implied that 15 year old girls could have expected to have an average of two children over their lifetimes if rates remained unchanged. By 2017, these age-specific rates had shifted so that 15 year olds in that year might be expected to average just 1.8 births over their lifetime.

Like the decline in general fertility, the drop in this rate is concerning. A rate of 2.1 is generally considered to be the replacement rate, or the rate at which a population would just replace itself over a long period. Both Wisconsin and the U.S. (also 1.8) are significantly below that level.

Without question, both the current level and the 10-year decline are a concern, but the state has been in similar positions before. In 1997, total fertility was also at 1.8, and in 1985 it was even lower at 1.7. However, Wisconsin's natural increase in population (more births than deaths) continues to be positive, though the gap between the two is shrinking.

TUMBLING TEEN BIRTHS

The two rates discussed above provide a big picture view of Wisconsin's fertility landscape. However, underlying both rates are age-specific birth rates that shed light on what is driving the movement in general and total fertility over time.

The decline in the teen birth rate explains more than 40% of the drop in Wisconsin births during 2007-17.

Birth rates vary significantly by age. Teens and women over 40 years of age have children, but the rates at which they give birth are much lower than those for women ages 25 to 34. For example, the teen birth rate in 2017 was 13.8 per 1,000 young women ages 15 to 19 and the rate for women 40 to 44 years of age was even lower at 9.3 per 1,000 women (see Table 1). However, for women ages 25 to 34, rates were above 110 births per 1,000 women.

Not only do these rates differ by age, but rates for each age group change from year to year. It is these changes that help explain Wisconsin's birth dearth and its declining fertility rates.

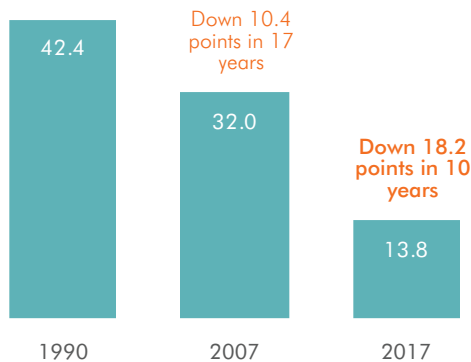
The most striking and influential shift has been the decline in teen births. For decades, policy makers have focused on reducing teen pregnancy. Teen mothers are more likely to be single parents and are often unprepared for parenthood. Children born to teen mothers are more likely to live in poverty, struggle to acquire basic literary skills, and underperform in school. They are also more likely to continue that cycle by becoming teen mothers themselves.

Table 1: Changing Cohort Sizes, Fertility, and Births, 2007 & 2017

Age	Number of Women			Fertility Rate			Births		
	2007	2017	Chg.	2007	2017	Chg.	2007	2017	Chg.
15-19	195,033	185,722	-9,311	32.0	13.8	-18.2	6,240	2,567	-3,673
20-24	193,414	197,167	3,753	87.7	58.8	-28.9	16,969	11,601	-5,368
25-29	180,969	176,068	-4,901	124.6	115.7	-8.9	22,557	20,366	-2,191
30-34	166,120	179,820	13,700	104.0	112.5	8.5	17,269	20,222	2,953
35-39	184,817	179,948	-4,869	43.1	47.9	4.8	7,958	8,620	662
40-44	208,105	161,978	-46,127	7.6	9.3	1.7	1,575	1,505	-70

Wisconsin has seen a significant decline in teen births over the past 27 years or more. In 1990, the state had 7,410 teen births, including 148 by girls under 15 years of age. By 2017, that number was down to 2,591, with only 24 by girls under 15.

FIGURE 3: Teen Fertility Plummets After 2007
Birth Rate for 15-19 Year Olds, 1990-2017



The teen birth rate has declined as well, with the drop accelerating after 2007. In 1990, the birth rate for young women 15 to 19 was 42.4 per 1,000 (see Figure 3). Over the next 17 years the rate dropped a little over 10 points to 32.0 in 2007. However, by 2017, the rate had fallen another 18.2 points to 13.8 births per 1,000 young women in this age group.

Declining teen fertility has been a major reason for fewer total births and falling general fertility rates since 2007. The rapid decline in teen fertility after 2007 accounted for more than 40% of the drop in births and three quarters of the decline in the general fertility rate.

Looked at another way, excluding teens, Wisconsin's birth rate changed little after 2007. In that year, the state's birth rate for women 20 to 44 was 71.1 babies born per 1,000 women that age. In 2017, the rate was 69.6, a decline of just half a point.

It should be reiterated that reducing teen births is a desirable outcome due to the many associated challenges for both mother and child. However, with the rate under 14 births per 1,000 young women, it is reasonable to ask how much further this rate can fall. When the teen birth rate ultimately stabilizes, the state might begin to see some stabilization or even an upturn in the general fertility rate.

DELAYING CHILDBIRTH

Another reason births and fertility rates are declining may be young women delaying childbirth. If a relatively large group of women have their first child in their early thirties rather than in their twenties, both the number of births and fertility rates will fall. However, that decline will be temporary until a “new normal” is reached.

Birth Rates Shifting

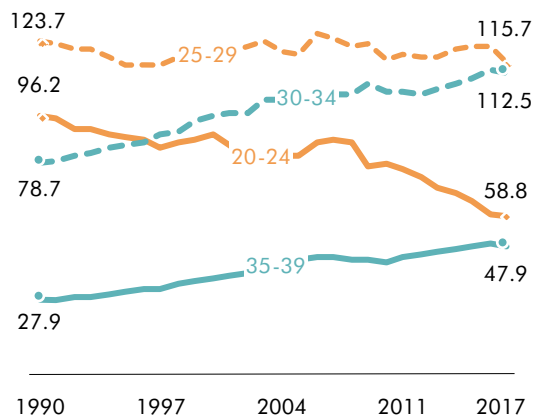
One way to shed light on the question of delay is to look at birth rates by age. If women are postponing childbirth, birth rates at younger ages will be falling while rates at older ages will be rising. For the most part, that is borne out by the data.

Among women 20 to 24 years of age, birth rates have been falling since at least 1990, but the decline accelerated after 2007. In 1990, the birth rate for this group was over 96 (see Figure 4). By 2002, it had dropped under 81. After climbing to 87.7 in 2007, it has resumed its decline. Over the 10 years from 2007 to 2017, the rate has dropped almost 30 points to 58.8 births per 1,000 women.

The long-term pattern for 25 to 29-year-old women shows fluctuations, but neither a downward or upward trend. However, for the two cohorts in their thirties (teal lines in Figure 4), fertility has been consistently rising since 1990. In fact, the rate for women 30 to 34 surpassed the rate for those in their early twenties in the late 1990s, and may soon exceed the birth rate for women 25 to 29 years of age.

What may be occurring is that some young women 20 to 24 years of age are delaying childbirth until their late twenties and some in their

FIGURE 4: Birth Rates Shifting
Birth Rates by Age Group, 1990-2017



late twenties are delaying until their thirties. That would help explain the small change in birth rates in the 25 to 29 age group.

Mother's Age at First Child

A second way to help answer the question of delay is to look at how old the mother is when she gives birth to her first child. The state reports many details about Wisconsin births, including whether the child was the mother's first.

Sorting all first-born children by mother's age allows us to estimate the median age at which women are first giving birth.

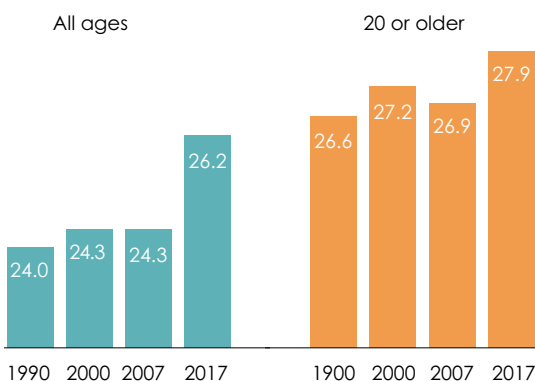
In 1990, the estimated median age of a mother having her first born was 24.0 years. By 2000, it had inched up to 24.3 and was the same in 2007 (see Figure 5, teal bars). In fact, during this entire 1990-2007 period, the median age ranged from 24.0 to 24.6 years of age. Since 2007 it has risen by nearly two years and was at 26.2 in 2017.

Part of this increase is due to the rapid decline in teen births since 2007. Mathematically, fewer births at the youngest end of the age scale will raise the median age at which women first give birth. To help filter out the impact of declining teen births, the same calculations are made for the 20 or older population (orange bars in Figure 5). After fluctuating between 26.6 and 27.4 years of age during 1990-2007, the median age of non-teens grew by a year during 2007-2017 from 26.9 to 27.9 years of age, indicating a delay in child-birth among this group.

FEWER WOMEN?

While changing birth rates from teens to women in their late thirties and early forties explains

FIGURE 5: Age of Mother of First Born Rising
Median Age of Mother For First Born, 1990-2017



Since 2007, the median age of a woman giving birth to her first child increased almost two years, from 24.3 to 26.2 years of age.

much of the decline in births, a drop in the number of women in these age groups is also contributing to Wisconsin's "birth dearth."

In 2018, Wisconsin had about 41,000 fewer women ages 15 to 44 than it did in 2007. Fortunately for the state, the 3.6% decline was primarily in the two age groups with the lowest fertility rates: 15 to 19 and 40 to 44. The decline in the latter cohort was the result of the last of the baby boomers exiting their fertile years between 2000 and 2007.

These declines were softened by a 7.4% gain among those 30 to 34 years of age. As mentioned, this age group has the second highest birth rate, behind those in their late twenties, so additional women in this age group means more children.

Following Cohorts As They Age

For Wisconsin, what is more troubling is the loss of young women as they age from high school through their twenties and into their thirties, when birth rates are highest.

In 1990, Wisconsin had 171,000 young women ages 15 to 19. Ten years later, this cohort was 25 to 29 years of age and totalled 163,900, a decline of 7,200 young women (4.2%). By 2005, when they were in their early thirties, this group's numbers had rebounded by 3,100 due to net migration into the state.

The behavior of millennials appears to be different from the GenXers. The 15 to 19 year old cohort in 2000 (millennials) saw their numbers decline over 10 years at about twice the rate of the GenXers (-15,400 or 7.8%). As they aged into their thirties, the cohort added only 800 women, compared to 3,100 in the older group.

The millennial challenge for Wisconsin is growing worse. The cohort of young women who were 15 to 19 in 2005 declined over 10 years at almost double the rate (-27,000) of their older millennials counterparts. As the state loses these young women, it can expect fewer babies in the future.

AROUND THE STATE

The focus of this study is primarily on Wisconsin's statewide challenges of births and birth rates. However, there are some interesting urban and rural components to these issues.

To simplify the analysis, the state is divided into three areas: the 20 rural counties north of state Highway 29; the 26 rural counties south of that highway; and the state's 26 urban counties.

Births and Birth Rates

The decline in births appears to have only a small urban/rural component. Statewide, the number of babies born dropped 10.7% during 2007-2017. The decline was 12.9% in the rural north, 11.3% in the rural south, and 10.4% in urban counties.

While declines were slightly larger in rural parts of the state compared to urban ones, much larger rural/urban differences show up in fertility rates.

In 1990, general fertility rates were similar in these three areas of the state: 65.5 births per 1,000 women in the rural north and 64.4 in both the rural south and urban area. By 2007, there had been little change in the rural south and urban areas. Rates rose marginally to 64.9 in urban areas and declined a bit to 64.1 in the rural south. However, fertility dropped much more in the rural north, from 65.5 to 61.1 births per 1,000 women.

Since 2007, the rural north and south have moved in dramatically different directions. During 2007-2017, general fertility in northern Wisconsin rose 4.8 points to 65.9, climbing above where it was in 1990. Fertility rates in urban counties moved the other way with rates dropping 5.7 points to 59.1 births per 1,000 women. Changes in the rural south were small in comparison (-1.3 points).

Fewer Women in the North?

It might seem contradictory that the birth rate in the north can climb almost five points and the number of babies born falls nearly 13%. The explanation is that region's significant loss of women in their childbearing years.

Since 2007, the number of females ages 15 to 44 in the 20 counties comprising Wisconsin's rural north declined 19.2%. Unlike the state decline, this drop was driven not by teens and those over 40 years of age, but by the age groups with the highest fertility rates. The two cohorts comprised of women ages 25 to 29 and 30 to 34 experienced a decline of 12.8% over 10 years. In other words, significantly fewer women in their most fertile years overwhelmed the rise in fertility rates.

LOOKING BACK, LOOKING AHEAD

Like the nation, Wisconsin is facing persistent declines in the number of babies born and in the rate at which young women have children. The good news is that much of this is explained by the rapid drop in teen pregnancy, which is generally considered positive.

However, should Wisconsin's "birth dearth" continue, the state could experience an unprecedented situation in which the number of deaths exceeds births; i.e., a natural decrease in population. That would hurt economic growth in the long run.

The current state of fertility here is also concerning because birth rates generally go up in a strong economy. If they are falling now when unemployment is around 3%, what happens during the next recession when economic uncertainty accelerates?

It is unclear how much pro-natalist public policy can impact fertility. Some suggest that reducing the cost of childcare or expanding paid family leave will help. However, while increased financial support for working mothers may increase fertility, these policies can also create increased attachment to the labor force, which may decrease fertility.

Another policy that has been tried is government payments for the birth of a child. Some studies show this to have a positive effect, though it is costly. Ideally, the program would pay only for children who would not be born without the payments. Since that is unknown, the government pays for all babies born and gets only a marginal increase in the number of births.

There are no easy answers, but we only have to look to Japan to see some of the consequences of declining fertility and births, including a rapidly aging population and a shrinking workforce.



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