Michigan Statewide Population Projections through 2050

April 2024

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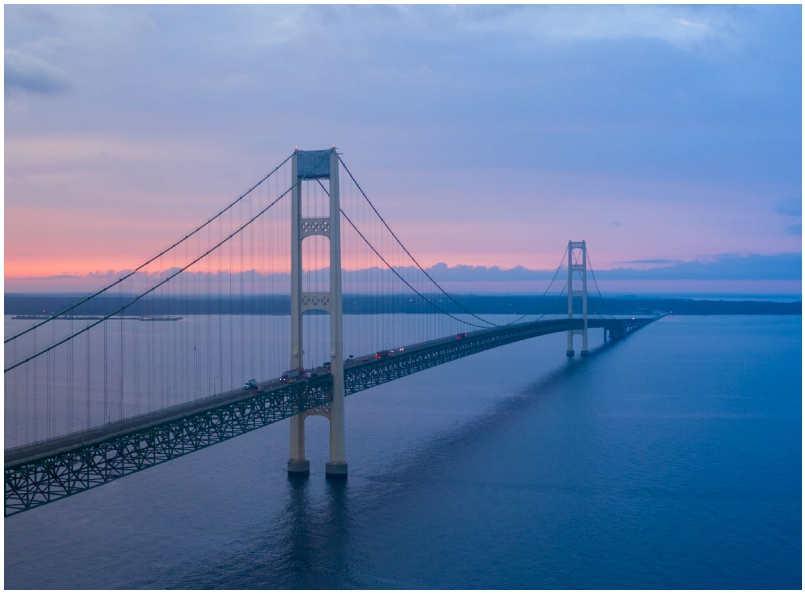

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Acknowledgments

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Executive Summary

This report from the Michigan Center for Data and Analytics (MCDA) contains new statewide projections for Michigan's population through 2050. These estimates include projections for each of the components of change: births, deaths, and migration.

Michigan's population is expected to experience slow growth and then decline, even with projected net positive migration to the state. Michigan's population is projected to increase by approximately 231,000 people (2.3 percent) from 2022 through 2034, and then decline to 9,906,000 people by 2050. This represents an overall decline of approximately 128,000 people from 2022 to 2050 (-1.3 percent).

Michigan has shifted from a young, higher fertility population to an older, low fertility population. This is a challenging age structure for sustained population growth. Decreasing births and increasing deaths are substantial contributors to the state's projected slow growth and population decline. These birth and death trends are projected even if the state has net positive migration of working- and family-age migrants.

As the baby boomers age into high mortality years, Michigan is projected to transition to sustained and steepening natural decrease (more deaths than births) through 2050. This is a notable shift since most of Michigan's growth from the 1970s onward was from natural increase (more births than deaths).

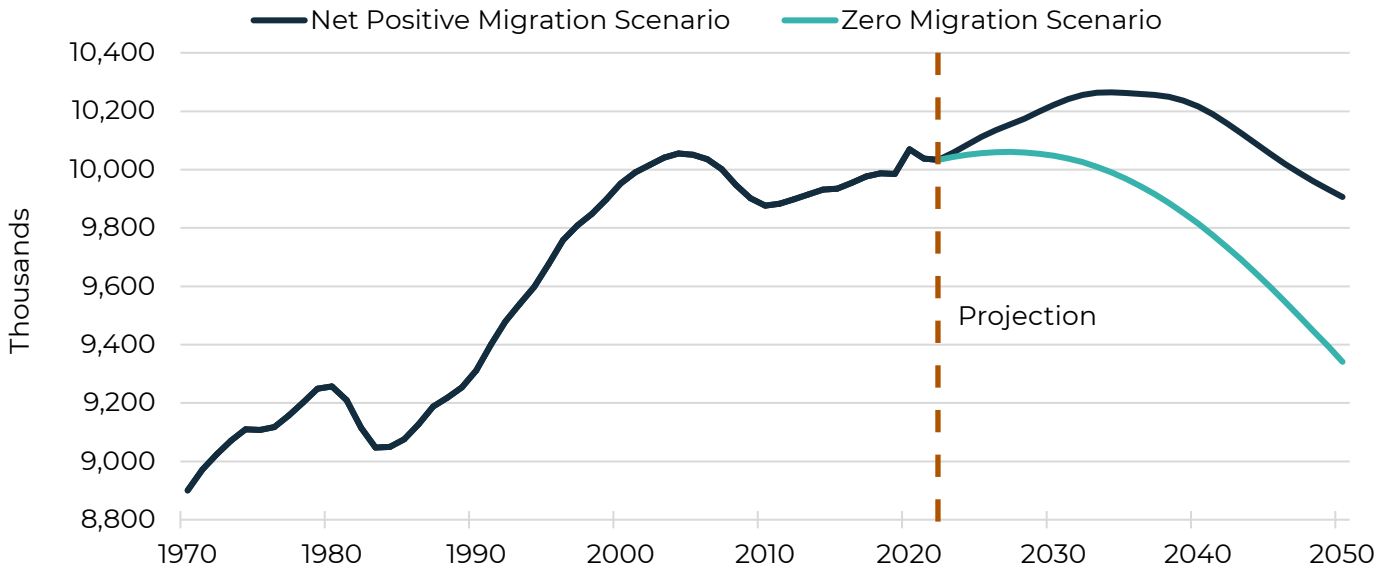
Since the 1970s, Michigan has typically had net negative migration. However, future population growth in the state will be increasingly dependent on net positive migration. As natural decrease becomes more severe, Michigan's future population growth will be reliant on continually higher levels of net positive migration.

Michigan is projected to have a slower growth rate and earlier onset of population decline than the United States. The U.S. Census Bureau has projected that the national population will increase by approximately 8 percent from 2022 to 2050 and begin declining in the 2080s.

Population Projections

Even with positive migration, Michigan is projected to continue experiencing slow growth and then population decline beginning in the 2030s.

Figure 1: Michigan Total Population, Historical and Projected



Source: WONDER Database, Centers for Disease Control; 2024 Vintage Population Projections, Michigan Center for Data and Analytics; Population Estimates Program, U.S. Census Bureau

Figure 1 displays two potential population trajectories for the state: net positive migration and zero migration. The net positive migration scenario is the main population projection series presented in this report. However, the zero migration scenario provides an illustrative example of what the state's population trajectory would look like with no migration flow. Without net positive migration, the zero migration scenario demonstrates that population decline could occur earlier in Michigan and be more severe through 2050. Specifically, the state population would decline by 692,000 people (-6.9 percent) from 2022 to 2050 with zero migration, compared to a decline of 128,000 (-1.3 percent) with net positive migration.

Michigan has challenging demographic conditions for sustained population growth, even with net positive migration. The state had a pronounced baby boom in the 1950s, followed by a fertility bust and sustained out-migration since the 1970s. These dynamics have contributed to substantial population aging that will continue through 2050. In the past century, Michigan shifted from a young, higher fertility population to an older, low fertility population. Understanding these historical trends is critical to understanding Michigan's current and prospective population trends.

Note: Projected values are based on recent historical trends in the state. Since 2022 is the most recent year of age-specific historical population data available, it serves as the base for the Michigan Center for Data and Analytics 2024 projection vintage. Projected values start at 2023 and continue through 2050.

There are three components of population change:

1. Births
2. Deaths
3. Migration

Natural Increase - More births than deaths

Natural Decrease - More deaths than births

Migration - Consists of domestic (state to state) and international components

Typically, Michigan gains population from international migration but loses proportionally more to domestic migration.

Demographic Balancing Equation

Population in Time 2 = **Population in Time 1** + **Natural Change** (Births – Deaths) + **Net Migration** (In-Migration – Out-Migration)

Births

In 2022, Michigan recorded approximately 100,800 births, which is less than half the number of births at the peak of the baby boom in 1957. By 2050, births are projected to be under 80,000 per year in Michigan.

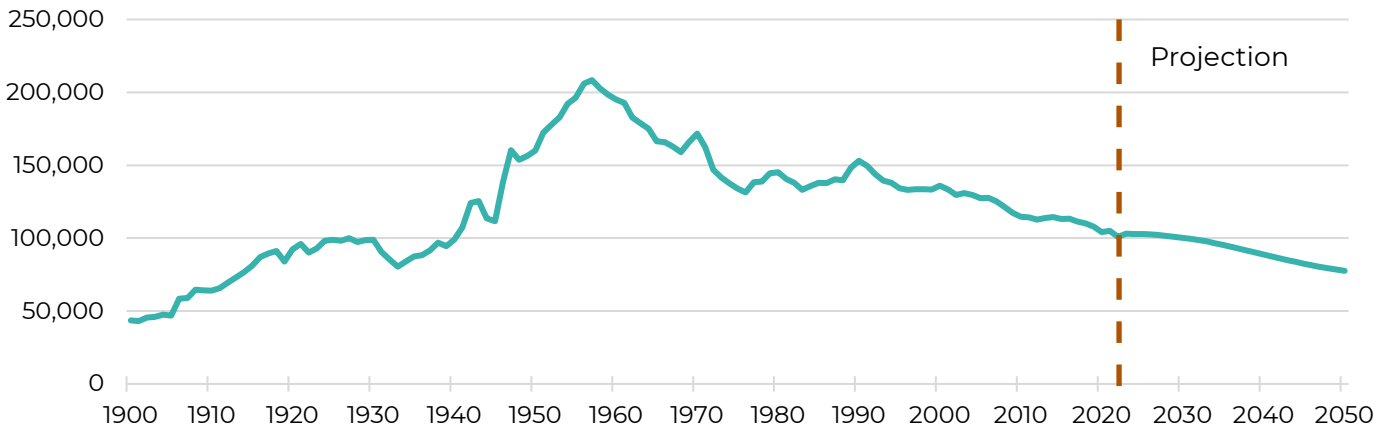
Michigan's long-term decline in births is projected to continue through 2050 (Figure 2). The declining number of births has been, and will likely remain, a significant contributor to the slow growth and eventual decline in Michigan's population.

Births are determined by fertility rates and the number of women of reproductive age. Historical fertility trends going back to the 1950s have strongly influenced current and projected population trends. The total fertility rate in Michigan and the nation dramatically increased during the "baby boom" of the 1950s (Figure 3). This boom was followed, however, by a substantial "fertility bust" in the 1960s and early 1970s. Since the 1970s, total fertility rates have remained below 2.1 in Michigan. Total fertility rates have also remained below 2.1 in the U.S. since the 1970s, except for a brief period around 2007. The total fertility rate of 2.1 is an important threshold in demography because it represents the birth rate needed to replace current adults in the next generation. This means that total fertility rates below 2.1 will typically lead to smaller birth cohorts than previous generations.

Michigan's total fertility rate was higher than the U.S. during the baby boom but has remained below the nation since the 1970s (Figure 3). After the 1980s, fertility in Michigan did recover somewhat until the Great Recession. Since the Great Recession, however, total fertility rates have again declined steadily in the state. In 2022, Michigan's total fertility rate decreased to approximately 1.57, compared to a national fertility rate of 1.67 (Figure 3). These historical differences between Michigan and national fertility rates have

Births are projected to continue declining through 2050.

Figure 2: Michigan Annual Births, Historical and Projected



Source: Population, Live Births, Deaths, Marriages and Divorces, Michigan, 1900–2022, Michigan Department of Health and Human Services; 2024 Vintage Population Projections, Net Positive Migration Scenario, Michigan Center for Data and Analytics

had lasting impacts on the state and nation's population growth and characteristics (see aging section) over the last 80 years.

Below-replacement fertility has contributed to shrinking generations (Figure 4). Each of Michigan's generational birth cohorts following the baby boom have been smaller than the last. The trend of shrinking generations is projected to continue, since total fertility is projected to remain well below replacement through 2050. Specifically, fertility is projected to decline from 1.57 in 2022 to 1.39 in 2050.

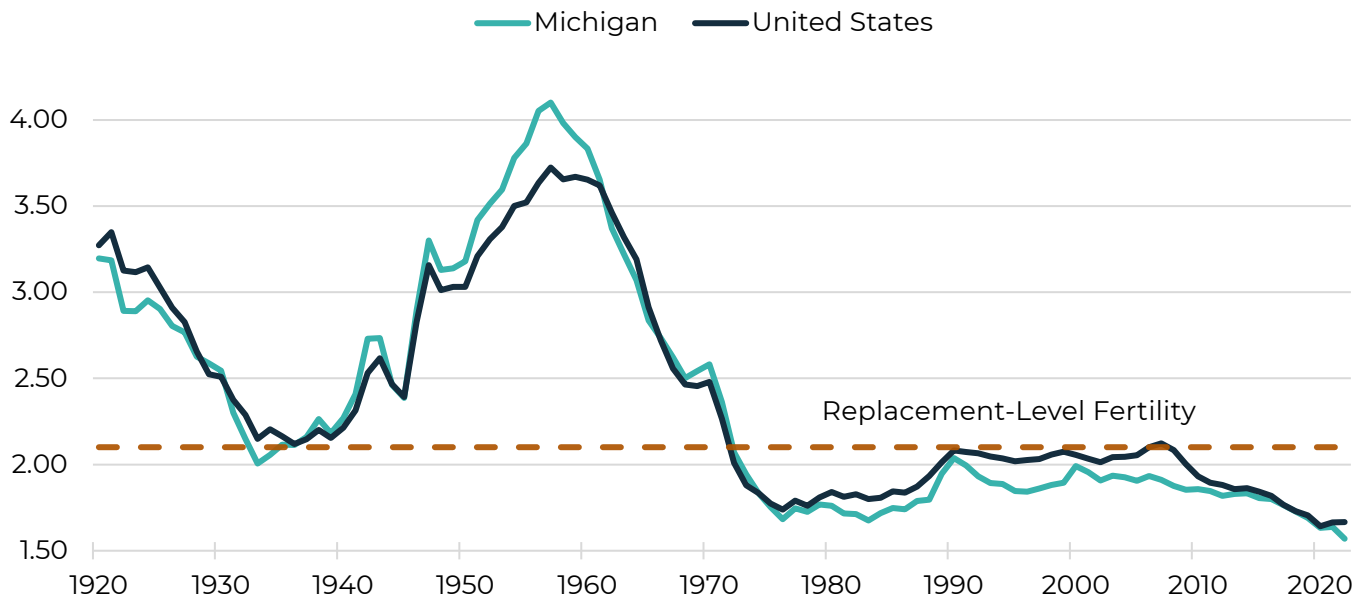
The number of women of reproductive age is another important contributor to births. In 2022, over 90 percent of births in Michigan were to women 21 through 40 years of age. Therefore, the size of this age group serves as a reasonable index for the number of women potentially giving birth. The number of women ages 21 through 40 declined by approximately 300,000 from 1990 to 2010 (Figure 5). This was likely due to most of the baby boomers aging out of this age group in the 1990s and 2000s followed by severe out-migration, including many younger people, during the Great Recession.

Since 2010, the population of reproductive-age women has rebounded somewhat from Great Recession lows. This is likely due to reduced out-migration and the fact that a relatively large number of women from birth cohorts in the 1990s turned 21. It is expected that this recovery

The total fertility rate represents the average number of children expected per woman during her lifetime based on current age-specific fertility rates.

Relative to the nation, Michigan had greater fertility increases during the baby boom and pronounced fertility decline since the 1970s.

Figure 3: Total Fertility Rate (Average Number of Children Per Woman), 1920–2022



Source: 1920–2022 Michigan Resident Birth Files, Michigan Department of Health and Human Services; National Vital Statistics Reports, National Center for Health Statistics

will continue through 2030. However, after 2030, this population group will likely decline through 2050. The projected decline in reproductive-age women is due to the sharp decline in births after 2005 and the corresponding reduced number of Michigan-born women entering this age group in the future. In addition to low fertility, this decline in the population of women puts further downward pressure on births at the end of the projection series.

Each generational cohort born in Michigan after the baby boomer cohort has been decreasing in size.

Figure 4: Michigan Total Births by Generation, Historical and Projected

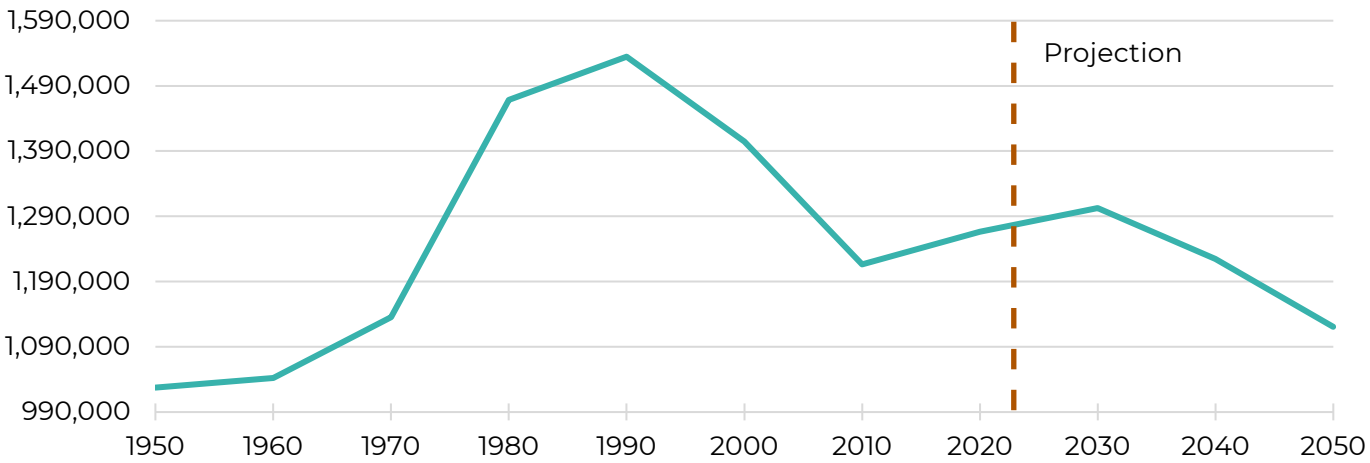
Birth Cohort	Birth Years	Births	Numeric Change	Percent Change
Baby Boomers	1946–1964	3,430,941	XXX	XXX
Gen X	1965–1980	2,411,702	-1,019,239	-29.7
Millennials	1981–1996	2,242,469	-169,233	-7
Gen Z	1997–2012	2,020,351	-222,118	-9.9
“Gen A”	2013–2028	1,709,319	-311,032	-15.4
“Gen B”	2029–2044	1,488,613	-220,707	-12.9

Source: 1920–2022 Michigan Resident Birth Files, Michigan Department of Health and Human Services; 2024 Vintage Population Projections, Michigan Center for Data and Analytics

Note: The birth years used to define the baby boomer generation in this table align with the U.S. Census Bureau definition. The 16-year birth intervals used to define Gen X, millennials, and Gen Z align with those used by Pew Research. The projected “Gen A” and “Gen B” generations are also defined by 16-year intervals.

The population of women ages 21–40 is projected to decline from 2030 through 2050.

Figure 5: Michigan Population of Women Ages 21–40, Historical and Projected



Source: WONDER Database, Centers for Disease Control; IPUMS USA; 1960–2000 Decennial Censuses, U.S. Census Bureau; Population Estimates Program, U.S. Census Bureau; 2024 Vintage Population Projections, Net Positive Migration Scenario, Michigan Center for Data and Analytics

Deaths

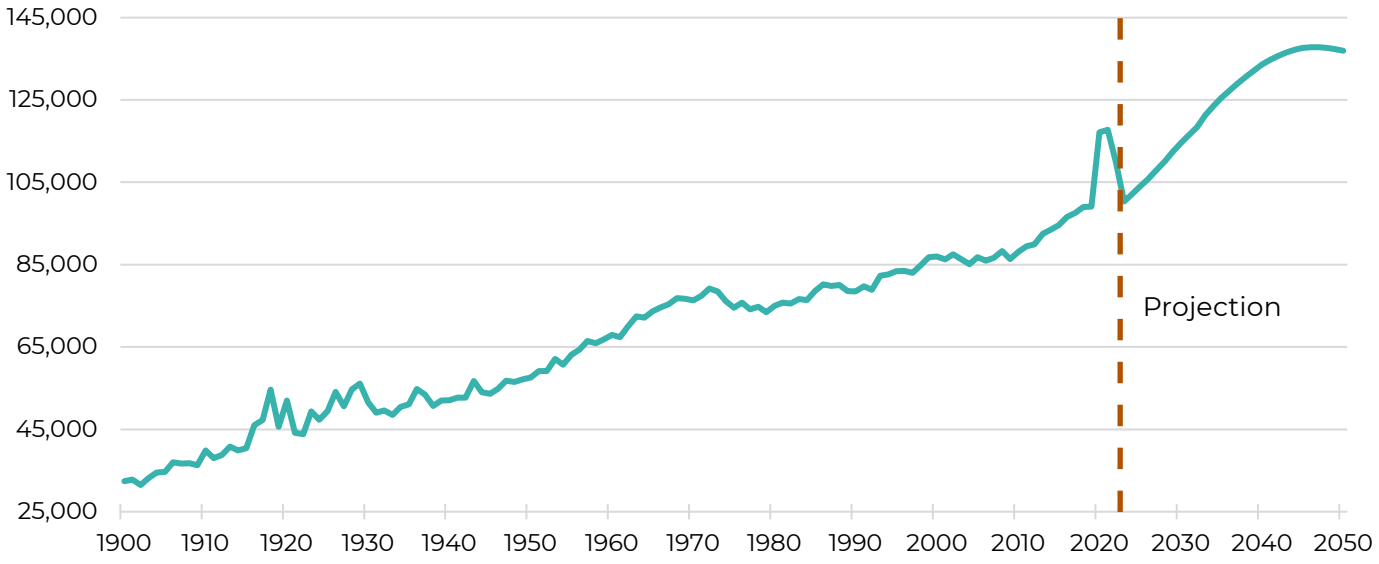
Deaths in Michigan are projected to increase by over 35 percent, to 138,000 annually, from 2023 to 2047. This is despite a roughly 2.8-year increase in projected life expectancy during this time. The leading factor in the steady increase in deaths will be the large number of people over 70 as the baby boomer generation continues to age. The projected percentage increase in Michigan deaths is similar to the percent increase in deaths the U.S. Census Bureau projects for the U.S. over the same period. The projected life expectancy increase in Michigan is also similar to the three-year gain estimated for the U.S.

The expected increase in deaths is a continuation of a long historical trend. Over the last 120 years, Michigan has experienced a steady increase in the number of deaths (Figure 6). This is mostly driven by increasing population size since survival rates have risen substantially over this period.

Michigan saw a large increase in deaths in 2020 and 2021 during the COVID-19 pandemic. Deaths increased by approximately 18 percent from 2019 to 2020 and remained elevated in 2021. The large increase in deaths in 2020 did recede in 2022 and 2023. However, it is likely that this decrease is only temporary as deaths resume their steady upward trajectory through 2050 (Figure 6).

Deaths are projected to increase in Michigan through 2050 as baby boomers continue aging into high mortality years.

Figure 6: Michigan Annual Deaths, Historical and Projected



Source: 1920–2022 Michigan Resident Death Files, Michigan Department of Health and Human Services; 2024 Vintage Population Projections, Net Positive Migration Scenario, Michigan Center for Data and Analytics

Natural Change

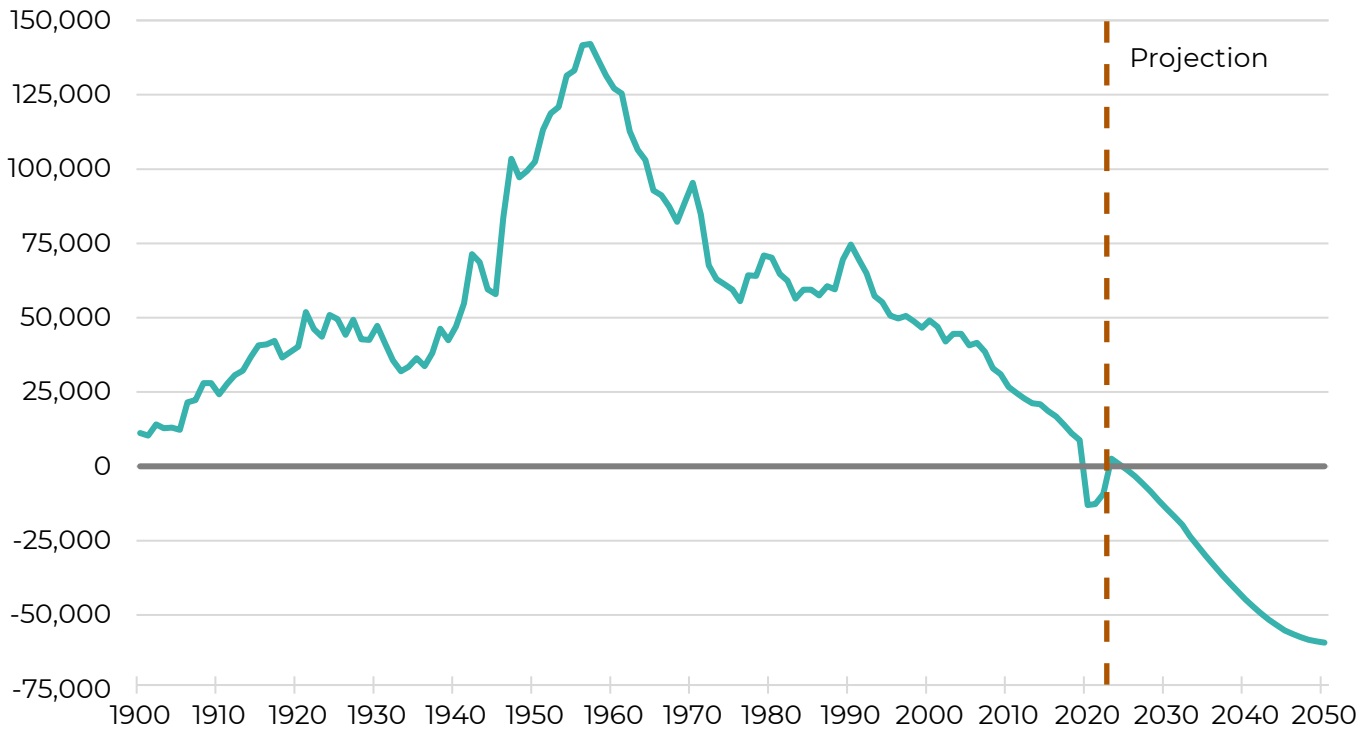
Natural change is defined as births minus deaths. If there are more births than deaths, this is referred to as a natural increase in population. If there are fewer births than deaths, this is referred to as natural decrease. Natural change provides a measure of a population's internal growth engine. Michigan was in natural increase every year from 1900 to 2019. However, since the peak of the state's baby boom in 1957, natural increase has been subsiding and trending towards natural decrease (Figure 7).

The sharp increase in deaths during the COVID-19 pandemic pushed Michigan into natural decrease in 2020–2022 for the first time since reported data began in 1900. Michigan could briefly return to natural increase as high mortality from the COVID-19 pandemic subsides. However, Michigan is soon projected to return to sustained and steepening natural decrease through 2050.

The state's total net migration has generally been negative since the 1970s. Therefore, Michigan's population growth since 1970 has been driven largely by natural increase (i.e., more births than deaths). However, as Michigan pivots from natural increase to sustained natural decrease, Michigan's population growth will depend entirely on sustained positive migration.

As births likely decline and deaths increase, Michigan is projected to experience sustained and steepening natural decrease through 2050.

Figure 7: Michigan Natural Change (Births Minus Deaths), Historical and Projected



Source: 1920–2022 Michigan Resident Birth and Death Files, Michigan Department of Health and Human Services; 2024 Vintage Population Projections, Net Positive Migration Scenario, Michigan Center for Data and Analytics

Michigan is among the states leading the transition to natural decrease. However, there is a long-term shift toward natural decrease across the United States. In fact, the U.S. Census Bureau projects that the nation will transition to natural decrease in 2038. Therefore, from 2038 onward, national population growth is projected to depend entirely on international migration.

Migration

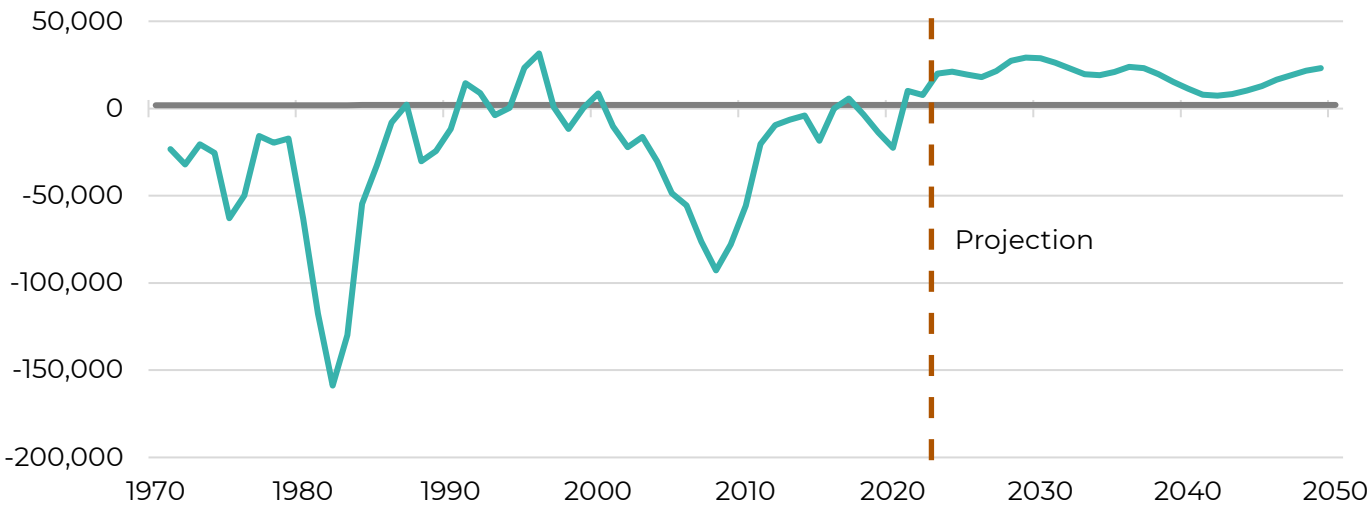
Typically, Michigan gains population from international migration but loses proportionally more to domestic migration.

The 2024 vintage population projections include two migration scenarios: a net positive migration scenario (Figure 8) and a zero migration scenario. The total net migration in the net positive scenario consists of both the international and domestic components.

Historically, net positive international migration to Michigan has mitigated or sometimes offset domestic out-migration. This has contributed to less severe rates of total net migration loss, or even total migration that is net positive in some years.

Michigan is projected to have levels of migration similar to the 1990s if migrants are attracted to Michigan for employment as baby boomers retire.

Figure 8: Michigan Historical Migration and Projected Net Positive Scenario



Source: 1970–2022 Migration Estimates and 2024 Vintage Population Projections, Michigan Center for Data and Analytics

The zero migration scenario is a hypothetical scenario where the state has no migration flow. It is helpful to model a zero migration scenario for two primary reasons. First, the zero migration scenario reflects a potential population trajectory should the positive migration assumption not be met. Additionally, the zero migration scenario demonstrates a projected population that is driven solely by Michigan's internal growth dynamics (i.e., the natural change component). The net positive migration scenario and the zero migration scenario have the same birth and death rates.

In the net positive migration scenario, Michigan's migration is expected to have positive, but variable migration, through 2050 (Figure 8). Several factors could contribute to a net positive migration scenario. The severe rates of domestic migration loss during the Great Recession have subsided in recent years. Paired with continued net positive international migration, this was a period where total net migration was recovering and even positive recently. This period of migration recovery after the Great Recession also coincides with baby boomers aging into retirement years and exiting the workforce. The positive migration in the main series assumes that baby boomers exiting the workforce will increase employment opportunities and attract working-age migrants into Michigan.

Since Michigan is projected to maintain a trajectory of steepening natural decrease, in the near future population growth will depend entirely on Michigan maintaining net positive migration. Michigan is more likely to grow in the next decade when rates of natural decrease will be relatively low and more easily offset by net positive migration. However, after natural decrease crosses -25,000 annually around 2034, it will become increasingly challenging for the state to maintain the annual level of net migration needed for population growth.

Population Aging

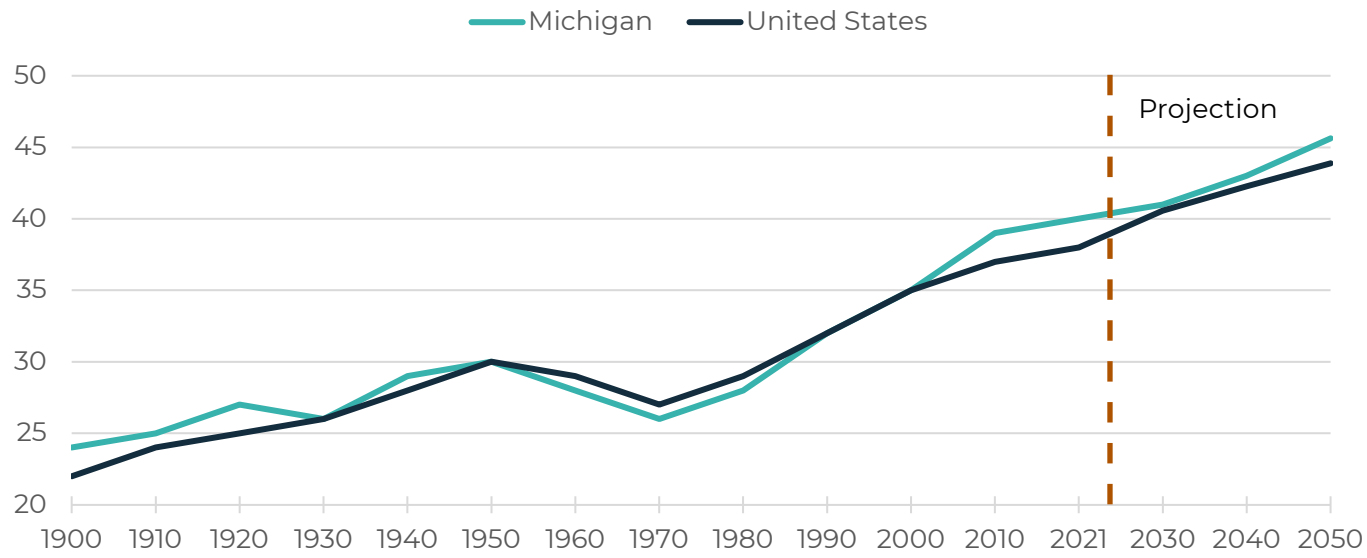
Michigan and the U.S. have experienced substantial population aging since the 1970s, which is projected to continue through at least 2050 (Figure 9). Nationally, this trend has been driven primarily by two factors: declining fertility rates and increasing life expectancy. Although these factors have also contributed to aging in Michigan, it has been exacerbated by an additional factor: the persistent out-migration of younger adults.

Past and present fertility trends have contributed to population aging in Michigan and the United States in a couple of ways. First, the substantial fertility increases in the 1950s resulted in the large baby boomer generation. Second, and perhaps just as important, was the substantial decline in total fertility that occurred in the 1960s and early 1970s (Figure 4). Although total fertility recovered somewhat in the 1990s, fertility in Michigan has remained below replacement for 50 years. The result is a continuing decline in birth cohort size for all three generations since the baby boomers. The net result is a very large older generation moving into its 70s that was followed by much smaller subsequent generations.

Although Michigan and the nation have experienced similar fertility patterns, Michigan experienced more pronounced increases and decreases in fertility. Specifically, Michigan experienced relatively higher rates of births per capita during the baby boom and then had lower fertility during each subsequent generation compared to the nation. This trend has been compounded by the persistent net out-migration Michigan has experienced since the 1970s. In contrast, the nation experienced

The median age will continue increasing in Michigan and the U.S.

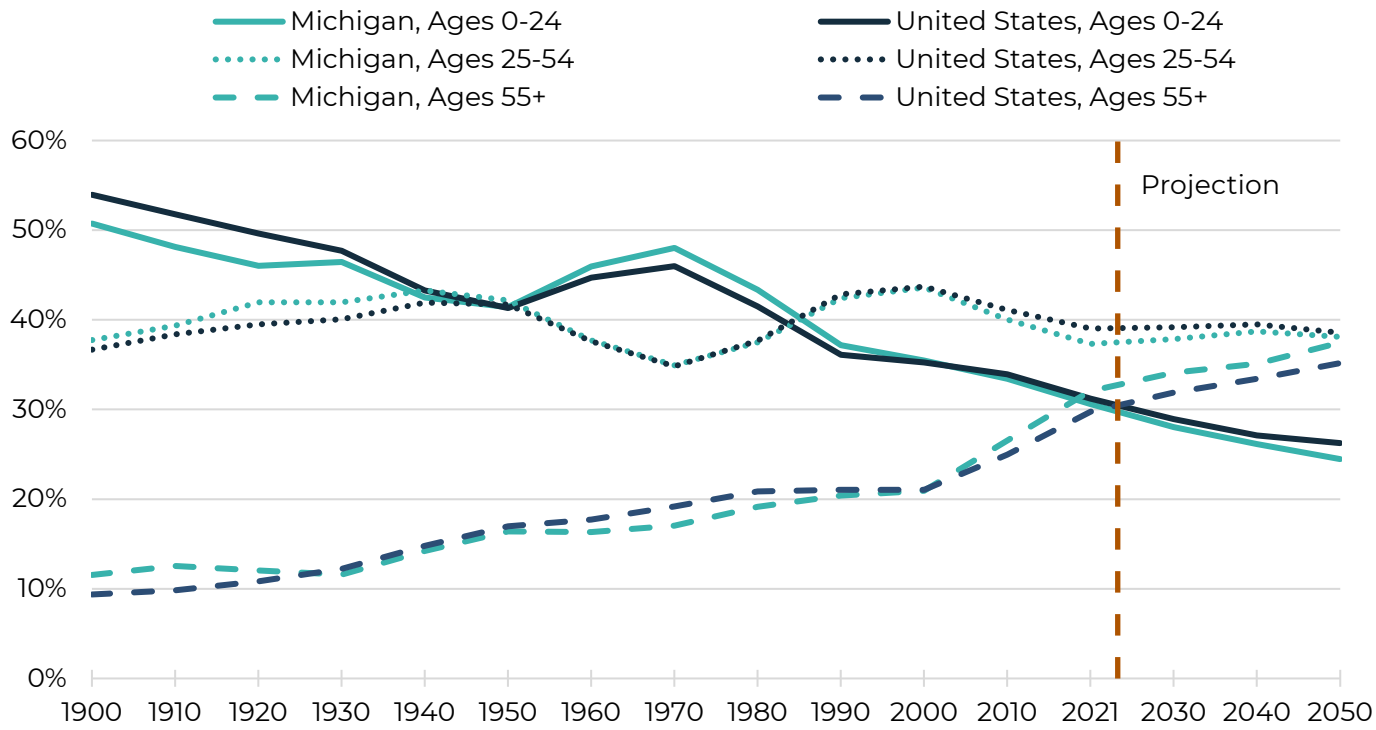
Figure 9: Median Age, Historical and Projected



Source: 1900-2000 Decennial Censuses, 2010 and 2021 One-Year American Community Survey, Population Estimates Program, 2023, U.S. Census Bureau sourced from IPUMS USA; National Population Projections, U.S. Census Bureau; 2024 Vintage Population Projections, Net Positive Migration Scenario, Michigan Center for Data and Analytics

As the share of Michigan's older population increases, the share of the working-age group is projected to remain flat even with net positive migration. The nation is projected to experience a similar trend.

Figure 10: Percentage of Population by Age Group, Historical and Projected



Source: 1900-2000 Decennial Censuses, 2010 and 2021 One-Year American Community Survey, Population Estimates Program, 2023, U.S. Census Bureau sourced from IPUMS USA; National Population Projections, U.S. Census Bureau; 2024 Vintage Population Projections, Net Positive Migration Scenario, Michigan Center for Data and Analytics

net positive migration during this time, which has helped offset the impact of lower fertility. These historical patterns have strongly influenced Michigan's older age distribution. Given the record low total fertility the state has experienced recently, it is projected that the next generation will be smaller yet, and continue contributing to population aging in the state.

Increases in life expectancy have compounded the effect of low fertility on population aging. In Michigan, life expectancy increased by about six years for women and by 8.5 years for men, from 1970 through 2019. Due to declining fertility, increased life expectancy, and young adult out-migration, Michigan now has a greater portion of its population ages 55 and over than under 25 (Figure 10). These aging trends are expected to continue even in a net positive migration scenario where prime-working-age adults are potentially attracted to the state for work as baby boomers retire.

Michigan's Population Future

Over the past century, Michigan has transitioned from a young population with relatively high fertility rates to a much older population with low fertility rates. The former demographic conditions contributed to rapid population growth, whereas the latter conditions facilitate low growth rates and eventual population decline.

Since 2002, Michigan's population has experienced essentially zero growth. In fact, the state's population in 2023 was slightly lower than in 2004. Substantial out-migration contributed to Michigan's population decline in the years during and following the Great Recession.

Since population declines following the Great Recession, Michigan's population recovered largely due to natural increase and migration outflows easing. However, although the state's population is near levels from 20 years ago, the underlying age structure and components of change present more challenging conditions for growth going forward. Substantial population growth from natural increase is unlikely in the foreseeable future. However, if Michigan maintains net positive migration near the levels in the 1990s, the state potentially has another five to 10 years until natural decrease is so severe that net positive migration is unlikely to offset it.

In conclusion, in the next decade Michigan has a window where some population growth is more likely while rates of natural decrease are still fairly low. After these few years, however, potential population growth will be increasingly difficult as the state turns to persistent and steepening natural decrease through 2050.

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