

Pennsylvania

Demographic Outlook

September 2020



Independent Fiscal Office

About the Independent Fiscal Office

The Independent Fiscal Office (IFO) provides revenue projections for use in the state budget process along with impartial and timely analysis of fiscal, economic and budgetary issues to assist Commonwealth residents and the General Assembly in their evaluation of policy decisions. In that capacity, the IFO does not support or oppose any policies it analyzes, and will disclose the methodologies, data sources and assumptions used in published reports and estimates.

**Independent Fiscal Office
Rachel Carson State Office Building
400 Market Street
Harrisburg, PA 17105**

phone:	717-230-8293
email:	contact@ifo.state.pa.us
website:	www.ifo.state.pa.us



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by the Act of Nov. 23, 2010 (P.L.1269, No.120).

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INDEPENDENT FISCAL OFFICE

September 8, 2020

The Honorable Members of the Pennsylvania General Assembly:

Section 604-B (a)(2) of the Administrative Code of 1929 specifies that the Independent Fiscal Office (IFO) shall "provide an assessment of the state's current fiscal condition and a projection of what the fiscal condition will be during the next five years. The assessment shall take into account the state of the economy, demographics, revenues and expenditures." In fulfillment of the demographics obligation, the IFO submits this report to the residents of the Commonwealth and members of the General Assembly. In accordance with the mission of the office, this report does not make any policy recommendations.

Demographic projections presented in this report are from the IFO based on tabulations from the 2019 Population Estimates by the U.S. Census Bureau, various other Census products and data supplied by the Pennsylvania Department of Health. Other data sources are noted in the relevant sections of this report.

The office would like to thank the Pennsylvania Department of Health for detailed birth and death data that assisted in the production of this report. Questions and comments can be submitted to contact@ifo.state.pa.us.

Sincerely,

A handwritten signature in blue ink that reads "Matthew J. Knittel".

Dr. MATTHEW J. KNITTEL
Director

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Staff Acknowledgements

The Independent Fiscal Office acknowledges the following staff for their work on this report:

Karen Maynard, Budget Analyst II

Ms. Maynard joined the IFO in March 2012. Primary responsibilities include leading various performance-based budgeting projects, coordinating the forecast of department expenditures and working on special projects that pertain to education, demographics, minimum wage and other subjects as needed.

Lesley Rompalo, Revenue Analyst II

Ms. Rompalo joined the IFO in June 2016. Primary responsibilities include leading the Department of Human Services performance-based budgeting reports, forecasting sales and use tax revenues, working on special projects regarding human services and demographics, and assisting in the coordination of department expenditures forecasts.

Michaela Bowers, Revenue Analyst I

Ms. Bowers joined the IFO as an intern in September 2018 and as a full-time staff member in December 2018. Primary responsibilities include forecasting personal income tax revenues and lottery proceeds along with other projects related to tax credit reviews, performance-based budgeting and demographics.

Questions regarding this report can be directed to kmaynard@iffo.state.pa.us.

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Introduction and Methodology

Section 604-B (a)(2) of the Administrative Code of 1929 specifies that the Independent Fiscal Office (IFO) shall “provide an assessment of the state’s current fiscal condition and a projection of what the fiscal condition will be during the next five years. The assessment shall take into account the state of the economy, demographics, revenues and expenditures.” This report fulfills the demographics obligation in advance of the IFO’s release of the *Economic and Budget Outlook for Fiscal Year 2020-21 to 2025-26*.

Demographics are a critical factor that motivate long-term economic, revenue and expenditure trends. Demographics determine key populations, such as the potential labor force that affects economic growth, elementary and secondary students who require educational services and elderly residents who may require long-term care. All population projections contained in this report are made by the IFO based on data from the U.S. Census Bureau and Pennsylvania Department of Health (DOH). Other data sources are noted in the table footnotes.

Methodology

The IFO demographics forecast uses a cohort-component model in which birth, death and migration rates are projected separately for males and females. Projections are made by single-year ages using data from the Pennsylvania DOH and the U.S. Census Bureau. The projections use the July 1, 2019 Census population estimates as the base year of the forecast.¹ From the base year, the IFO projects birth, death and net migration rates for Pennsylvania residents. The treatment of COVID-19, the recent worldwide pandemic, is also briefly discussed on the next page.

Births

The projection for births is based on a two-year average birth rate from 2017 to 2018. The model uses averages for seven groups of females: 13- to 18-year-olds, 19- to 22-year-olds, 23- to 29-year-olds, 30- to 34-year-olds, 35- to 39-year-olds, 40- to 44-year-olds and those age 45 and over. Birth rates for female age groups of 34 years old or younger are assumed to decline slightly and gradually flatten out in the long term. Birth rates for females age 35 to 39 are allowed to increase slightly in the next several years but level out in the long term. The birth rates for females age 40 and older are assumed to increase in the next few years based on recent historic trends but moderate over the forecast window. All trends in birth rates across the various age groups are consistent with the longer-term trend of females having children in later life stages.

¹ The U.S. Census population estimates for states only provides single-year age estimates to age 84. However, the U.S. Census Bureau population estimates for the U.S. provides single-year estimates to age 99. Therefore, estimates of the Pennsylvania distribution of age 85+ residents were estimated using the U.S. distribution from age 85 to 100+.

Deaths

Deaths are divided into numerous age groups using a two-year, weighted average death rate from 2017 (weighted one-third) and 2018 (weighted two-thirds).² Death rates in the near term reflect recent trends (mostly declining death rates) and then moderate in the long term. Projected death rates are then applied to the projected population.

Migration

Total net migration for 2019 by individual age is calculated using the 2019 population minus the 2018 population (aged by one year) plus 2019 projected births minus the projected 2019 deaths. The total model net migration is distributed proportionally between domestic and international net migration using U.S. Census Bureau Components of Change. The total net domestic migration is distributed by age using the U.S. Census Bureau's 2018 American Community Survey Public Use 5-year microdata file distribution of net domestic migration to Pennsylvania by age. International migration by age is the residual found by subtracting the net domestic migration by age from the total net migration by age. A 2019 net domestic migration rate by age and 2019 net international migration rate by age are calculated and applied to population projections to determine net migration for each future year.

Impact of COVID-19

The global COVID-19 pandemic has caused a significant number of deaths in Pennsylvania. From March 1, 2020 to September 1, 2020, approximately 7,691 Pennsylvanians have died as a result of COVID-19. Slightly over 92 percent of deaths due to COVID-19 have occurred in individuals age 60 and above, and many of the deaths occurred in individuals with underlying health conditions. Due to these factors, it is possible that a portion of the COVID-19-related deaths have occurred in individuals that may have otherwise passed away due to age or other health-related issues in the upcoming years. Additionally, it is unclear if any long-term complications or health impacts exist in those that have contracted the virus and recovered. Furthermore, behaviors such as increased hygiene and social distancing since March have likely reduced the death rate of influenza and other infectious diseases. Other circumstances that influence death rates, including traffic fatalities, drug use, suicide and homicide, may be affected by the pandemic and mitigation efforts. It is too early to know how COVID-19 will impact the death rates for 2020 and future years.

Future birth rates may also be affected by the COVID-19 pandemic and economic recession. According to a 2011 Pew Research study, birth rates are strongly correlated to the economy. When the economy enters a recession, birth rates tend to decline. The Pew study found that in the last recession, annual birth rates nationwide fell 1.6 percent in 2008 and an additional 2.6 percent in 2009.³ These annual declines were preceded by five years of increasing birth rates. Since the current recession was induced due to mitigation efforts to address a worldwide pandemic, it is unclear whether birth rates will decline as in previous recessions. Since COVID-19 impacts are still unknown at this point, they have not been explicitly built into this report.

² Death rates from 2015 and 2016 were not used to project deaths moving forward because they were dramatically impacted by a temporary increase in deaths due to the opioid crisis, particularly in young adults under age 40. By 2017, the increase in death rates among these age groups plateaued and in 2018, growth in death rates for these age groups began to fall.

³ Livingston, Gretchen. "In a Down Economy, Fewer Births." Pew Research Center. October 12, 2011. <https://www.pew-socialtrends.org/2011/10/12/in-a-down-economy-fewer-births/>.

Demographic Trends by Age Group

Table 2.1 presents the average annual growth rates of various age cohorts for three time periods. Those periods are: 2015 to 2020 (the recent past), 2020 to 2025 (near-term projections) and 2025 to 2030 (long-term projections). In the near term, birth, death and migration rates are unlikely to change significantly from the known, recent past. For the long-term projections, it is assumed that birth, death and migration rates continue at roughly the same rate as projected in the near-term projections. However, it is possible that birth, death or migration rates could change quite substantially in the long term due to factors such as changing economic conditions, immigration policies, domestic migration incentives and healthcare.

Table 2.1 reveals the following trends for the recent past (2015 to 2020), near-term projections (2020 to 2025) and long-term projections (2025 to 2030).

- The total population was nearly flat from 2015 to 2020 and is projected to contract slightly in the near term (-0.1 percent per annum) and long term (-0.2 percent per annum).
- The school age cohort (age 0 to 19) has declined 0.6 percent per annum from 2015 to 2020 and is projected to contract at the same rate in the near term, but slightly more in the long term (0.7 percent per annum).
- The working-age cohort (age 20 to 64) declined 0.5 percent per annum from 2015 to 2020 and is projected to contract by 0.7 percent per annum in the near term and 0.6 percent per annum in the long term. In 2025, this group includes mostly Generation X (born between 1965 and 1980) and Millennials (born between 1981 and 1997) and a portion of Generation Z (born between 1998 and 2015). If labor force participation rates do not increase, then this trend will constrain economic and revenue growth in the future.
- The retiree cohort (age 65 to 79) increased 3.3 percent per annum from 2015 to 2020 and is projected to expand by 2.6 percent per annum in the near term and then expand 0.6 percent per annum in the long term. In 2025, this group includes most of the Baby Boom Generation (born 1946 to 1964). The increase in this age cohort and the next age cohort implies strong demand for healthcare and long-term care services moving forward.
- The elderly cohort (age 80+) increased 0.2 percent per annum from 2015 to 2020 and is projected to expand by 1.9 percent per annum in the near term and 3.9 percent per annum in the long term. In 2025, this group mostly includes the Silent Generation (born between 1926 and 1945) and a very small number of individuals from the Greatest Generation (born between 1905 and 1925).

The subsections that follow provide further discussion of demographic trends in the near and long term. Single-year demographic detail through 2030 can be found in the Appendix.

**Table 2.1
Pennsylvania Demographic Trends and Projections**

Age Cohort	Number of Residents (000s)				Avg. Annual Growth		
	2015	2020	2025	2030	2015-20	2020-25	2025-30
0-4	714	690	657	630	-0.7%	-1.0%	-0.8%
5-9	737	726	701	667	-0.3	-0.7	-1.0
10-14	760	745	732	707	-0.4	-0.4	-0.7
15-19	829	796	778	763	-0.8	-0.5	-0.4
20-24	862	792	759	743	-1.7	-0.9	-0.4
25-29	858	845	776	744	-0.3	-1.7	-0.9
30-34	796	864	854	785	1.7	-0.2	-1.7
35-39	738	798	865	856	1.6	1.6	-0.2
40-44	756	736	796	863	-0.5	1.6	1.6
45-49	839	746	728	787	-2.3	-0.5	1.6
50-54	930	816	729	712	-2.6	-2.2	-0.5
55-59	950	893	785	701	-1.2	-2.5	-2.3
60-64	839	898	845	743	1.4	-1.2	-2.5
65-69	696	775	831	781	2.2	1.4	-1.2
70-74	499	628	702	751	4.7	2.2	1.4
75-79	366	430	546	609	3.2	4.9	2.2
80-84	282	291	345	442	0.6	3.5	5.1
85-89	205	194	205	246	-1.0	1.0	3.7
90-94	98	100	94	99	0.3	-1.2	1.0
95-99	26	33	33	32	4.3	0.3	-0.7
100+	<u>4</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>6.4</u>	<u>4.8</u>	<u>2.7</u>
Total	12,785	12,802	12,768	12,668	0.0	-0.1	-0.2
Age Cohort Summary							
0-19	3,040	2,956	2,867	2,768	-0.6%	-0.6%	-0.7%
20-64	7,568	7,389	7,137	6,933	-0.5	-0.7	-0.6
65-79	1,561	1,834	2,080	2,140	3.3	2.6	0.6
80+	<u>616</u>	<u>623</u>	<u>684</u>	<u>827</u>	<u>0.2</u>	<u>1.9</u>	<u>3.9</u>
Total	12,785	12,802	12,768	12,668	0.0	-0.1	-0.2

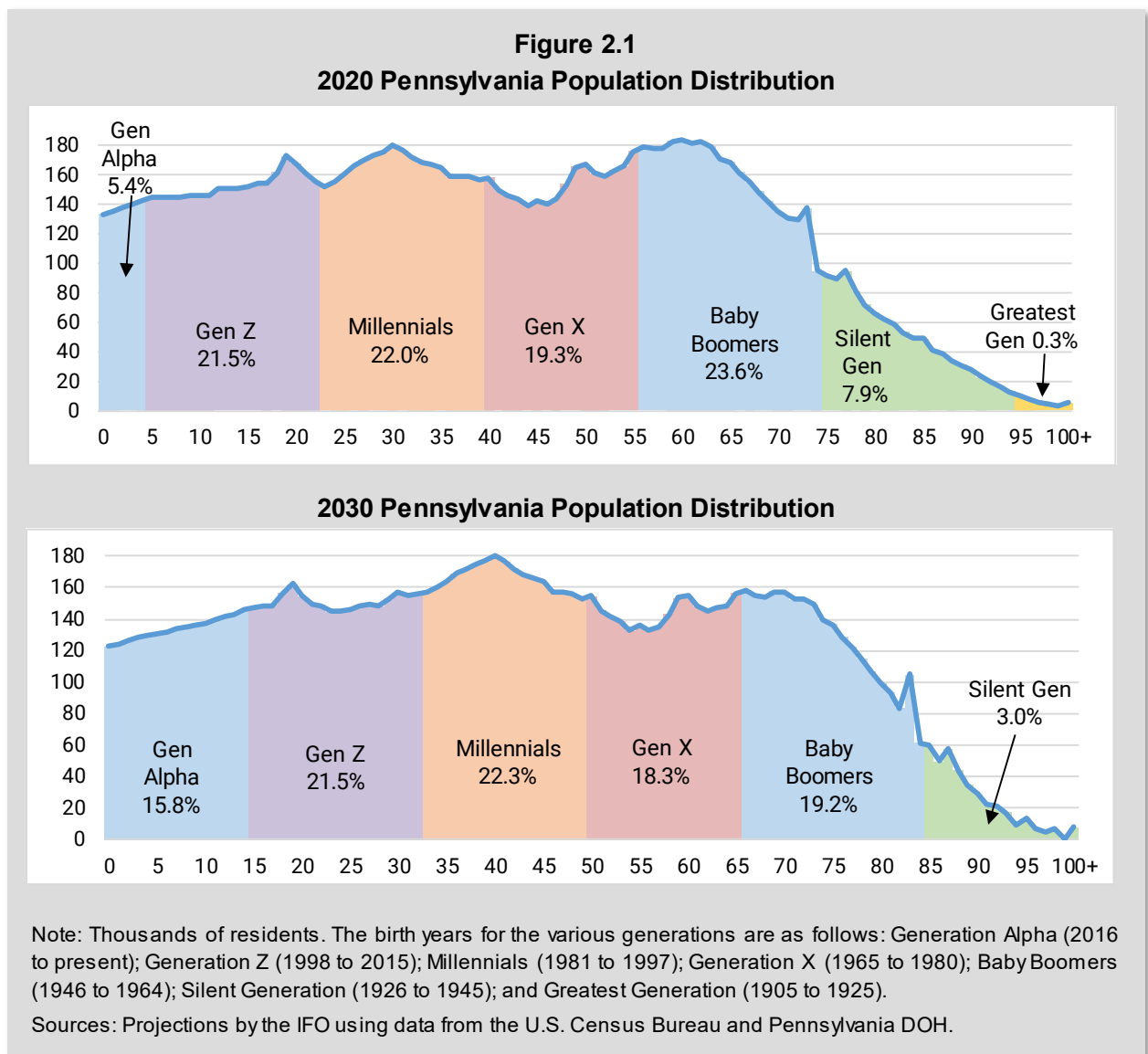
Note: Thousands of residents. Detail may not sum to total due to rounding.

Sources: The 2015 data are from the U.S. Census Bureau 2019 Population Projections with estimations by the IFO for the distribution of the age groups above 85 years old. The 2020, 2025 and 2030 data are projections by the IFO using data from the U.S. Census Bureau and Pennsylvania DOH.

Pennsylvania Population Distribution

Figure 2.1 displays the Pennsylvania projected population distribution for 2020 and 2030 by generation. The distribution in 2020 is characterized by the three largest generations: Baby Boomers (age 56 to 74, 23.6 percent of total population), Millennials (age 23 to 39, 22.0 percent) and Generation Z (age 5 to 22, 21.5 percent). However, the percentage for Generation Z is overstated due to the large number of 18- to 22-year-olds that reside temporarily in the state to attend Pennsylvania’s many colleges and universities.

By 2030, Millennials (22.3 percent) and Generation Z (21.5 percent) will become the largest two generations. The Baby Boomer share of total state population is projected to decline to 19.2 percent.



Dependency Ratios

Working-age residents remit the majority of state tax revenues that support dependents attending school and elderly residents who require dedicated healthcare services.⁴ Demographers use two metrics known as dependency ratios to illustrate the relationships between these three groups. The two ratios are the working-age (age 20-64) to youth (age <20) and working-age to retiree (65+) populations. From 2015 to 2030, the working-age to youth ratio is projected to remain stable at roughly 2.5 to 2.6 for Pennsylvania and 2.3 to 2.4 for the United States. For Pennsylvania, this implies that there are roughly 2.5 to 2.6 working-age adults per youth.

Unlike the working-age to youth ratio, the working-age to retiree ratio is trending downward for both Pennsylvania and the United States. **Figure 2.2** displays this ratio for Pennsylvania (blue) and the United States (purple) for 2015, 2020 (projected), 2025 (projected) and 2030 (projected). In 2015, there were 3.5 working-age residents per retiree in Pennsylvania and 4.0 for the United States. Both ratios are projected to decline substantially in 2020 (3.1 for Pennsylvania, 3.5 for the United States) and continue to decline through 2030 (2.3 for Pennsylvania, 2.7 for the United States). The downward trend directly corresponds to the retirement of Baby Boomers and the resulting contraction of the working-age population.

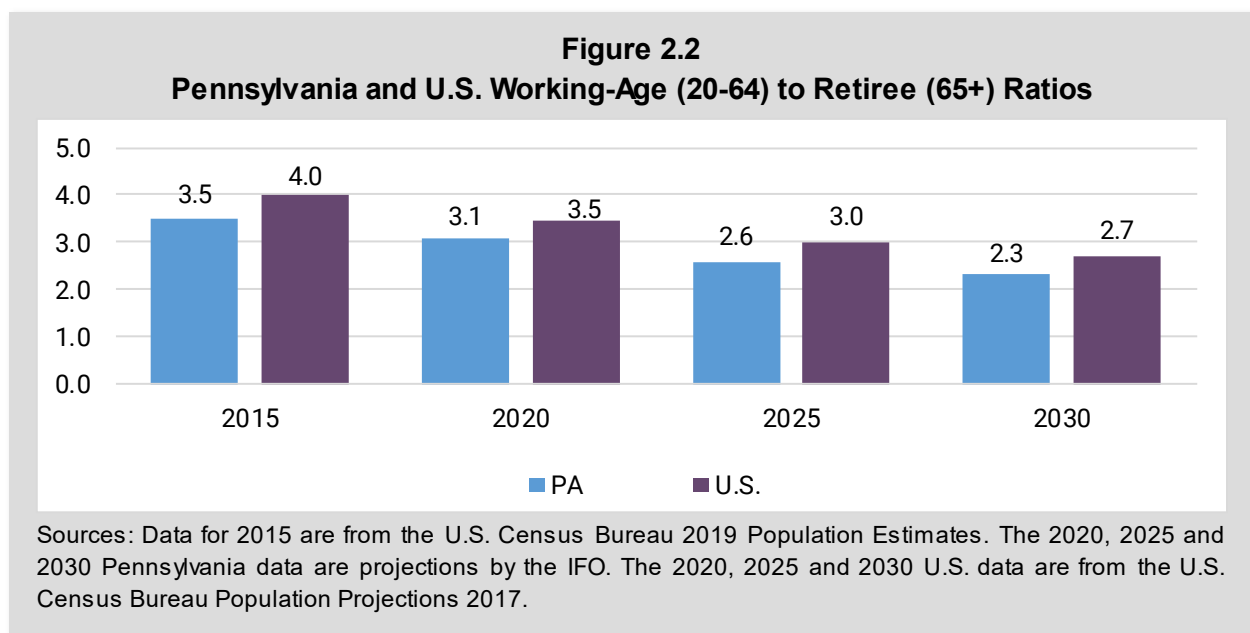


Figure 2.2 illustrates the challenges that policymakers will encounter during the next decade. Over time, there will be relatively fewer working-age residents to support the needs of rapidly expanding retiree and elderly populations. Stated differently, the burden of support will fall on a smaller group of taxpayers. The actual contraction of the working-age cohort, which remits the great majority of state taxes, suggests that real per capita tax levels for that age group must increase to keep pace with the anticipated increase in demand for healthcare and other services.

⁴ A recent analysis by the IFO found that residents age 65 and older remit roughly 29 to 32 percent of all homeowner property taxes, 13 to 16 percent of state personal income tax and 19 to 22 percent of state sales tax. See "Senior Spending and Tax Revenues," IFO legislative request, September 23, 2019.

Components of Population Change

Table 3.1 decomposes the change in state population from 2010 to 2030 to illustrate the factors that motivate low population growth rates. Three factors drive the trends during the 20-year time period:

- The forecast projects that the number of births will decline while the number of deaths will increase. From 2010 to 2015, births (706,000) outnumbered deaths (641,000) by 65,000. By 2020 to 2025, deaths are projected to outnumber births by 50,000.
- From 2010 to 2015, net migration was 9,000 and is projected to increase to 13,000 (2015 to 2020), 16,000 (2020 to 2025) and 20,000 (2025 to 2030). The overall positive net migration is due to net inflows from international migration. The most recent data also reveal a reduction in outflows from net domestic migration.
- Although not shown explicitly in the table, declining college enrollment also impacts state demographic trends. Pennsylvania typically receives a large influx of non-resident students who attend college. The temporary students are counted as residents for the purpose of the Census. While most return to their home state, some secure employment and remain in the state.

Table 3.1
Components of Pennsylvania Population Change

	By Time Period			
	2010-15	2015-20	2020-25	2025-30
Start of Period	12,711	12,785	12,802	12,768
Natural Increase	65	4	-50	-120
Births	706	679	644	618
Deaths	-641	-675	-694	-738
Net Migration	9	13	16	20
Age 0 to 17	48	53	48	46
Age 18 to 24	-36	-40	-39	-37
Age 25 to 64	20	17	23	24
Age 65 to 79	-11	-12	-13	-12
Age 80+	-12	-5	-4	-2
End of Period	12,785	12,802	12,768	12,668
Total Population Gain	74	17	-34	-101

Note: Thousands of residents.

Sources: The 2010 through 2019 data are from the U.S. Census Bureau 2019 Population Projections and Pennsylvania DOH. The 2020 through 2030 data are projections by the IFO using data from the U.S. Census Bureau and Pennsylvania DOH. Calculations by the IFO.

Birth Trends

Figure 3.1 illustrates the gradual decline in the number of births from 2010 (142,400) through 2030 (121,000). The decline in births is due to the decline in females of child-bearing age in Pennsylvania and declining fertility rates among these females. The decline in fertility rates is not unique to Pennsylvania. The U.S. Centers for Disease Control and Prevention has reported that the number of births per 1,000 females age 15 to 44 fell every year between 2010 and 2018 with the exception of a slight increase in 2014.⁵ Reasons for this trend include couples waiting longer to get married and have children, increasing financial concerns among young adults on whether they can afford to have children, more females wanting to establish a career before having children and more effective birth control methods to prevent unwanted pregnancies.⁶ Figure 3.1 separates births based on the maternal age group at birth. The gradual increase of births by women age 30 or older (purple and green) and the decline of births by women under age 30 (blue, orange and dark gray) assume current trends continue into the future.

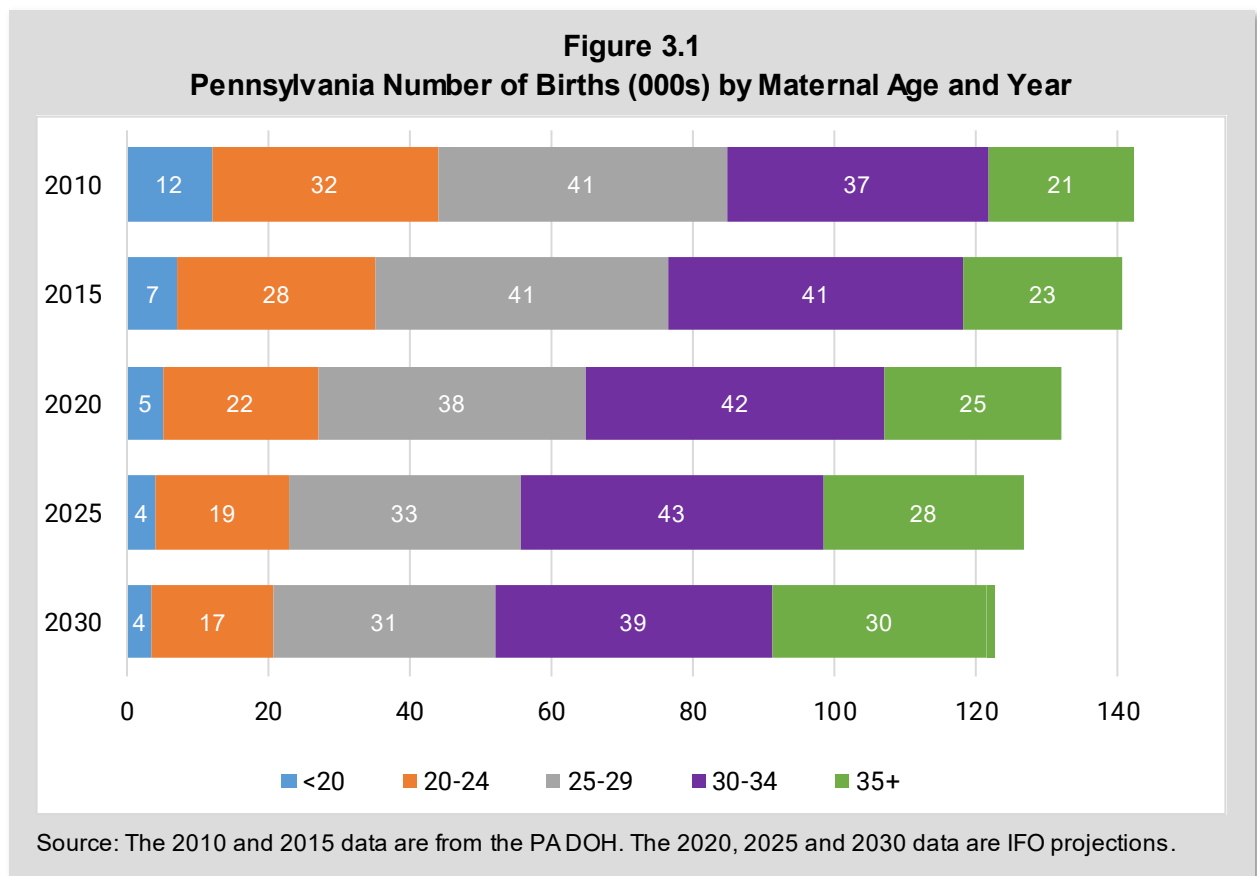


Table 3.2 displays the share of females by age group giving birth for the same five years as Figure 3.1. For example, in 2010 10.4 percent of all females age 25 to 29 gave birth to a child in Pennsylvania. The

⁵ Martin, Joyce et al. "National Vital Statistics Reports." U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. Vol. 68, Number 13. November 27, 2019. https://www.cdc.gov/nchs/data/nvsr/nvsr68/nvsr68_13-508.pdf.

⁶ "Here's Why the Birth Rate is So Low in the United States." Healthline Parenthood. <https://www.healthline.com/health-news/why-does-the-u-s-have-such-a-low-birth-rate>.

share of females under age 30 who give birth is projected to decrease, while the share of females age 30 and older who give birth is projected to increase. As a result, the average maternal age at birth is projected to increase from age 27.9 (2010) to age 30.4 (2030).

Table 3.2
Share of Females Giving Birth by Age Group and Year

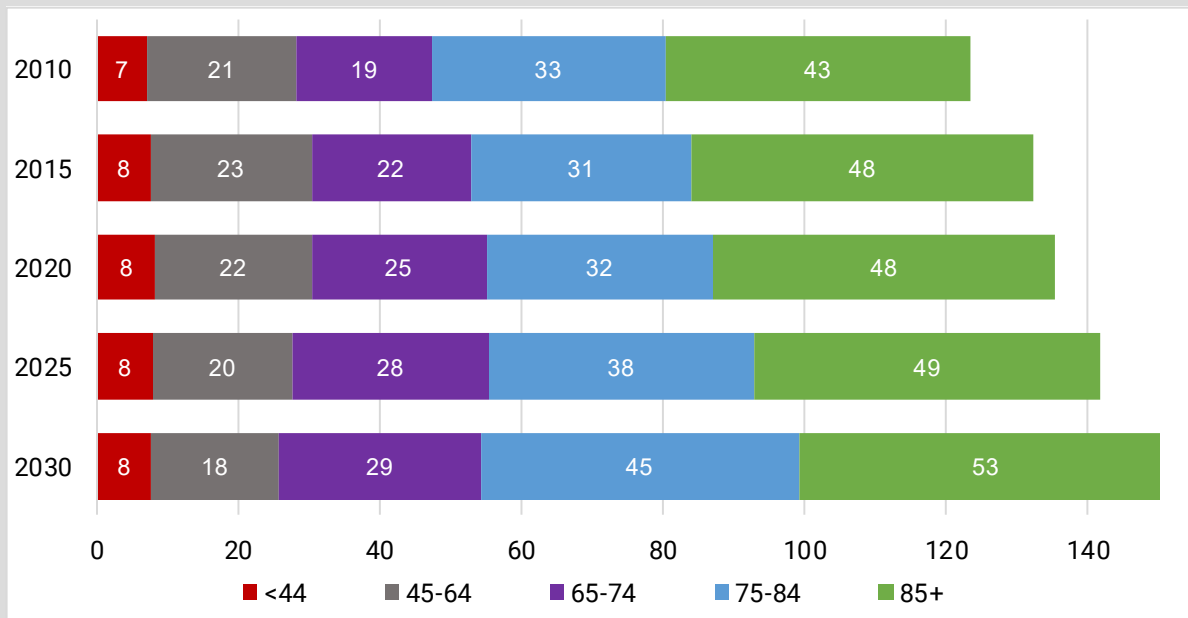
	2010	2015	2020	2025	2030
Age 13-19	2.0%	1.3%	0.9%	0.8%	0.7%
Age 20-24	7.3	6.6	5.6	5.1	4.7
Age 25-29	10.4	9.9	9.2	8.5	8.5
Age 30-34	10.1	10.5	10.0	10.3	10.2
Age 35-50	1.5	1.8	2.0	2.2	2.3
Total¹	4.5	4.6	4.4	4.3	4.1
Average Maternal Age	27.9	28.7	29.4	30.1	30.4

1 The total is the share of females age 13 to 50 giving birth in a given year.

Source: The 2010 and 2015 data are from the PADOH. The 2020, 2025 and 2030 data are IFO projections.

Decedent Trends

Figure 3.2
Pennsylvania Number of Deaths (000s) by Age and Year



Source: The 2010 and 2015 data are from the PADOH. The 2020, 2025 and 2030 data are IFO projections.

Figure 3.2 illustrates the gradual increase in the number of decedents from 2010 (123,500) through 2030 (152,200) in Pennsylvania. The figure divides decedents by age group. From 2020 to 2030, the total number of decedents is projected to increase at a faster rate than from 2015 to 2020 due to the aging of the Baby Boomer cohort.

Table 3.3 displays each age group’s decedent rate for the same five years as Figure 3.2. For example, in 2010, 4.9 percent of all residents, age 75 to 84 passed away. While the overall decedent rate is projected to increase slightly over time, that outcome is mostly due to the general aging of the population. Decedent rates for populations age 75 or older generally continue to decline as medical advances improve life expectancies. For Pennsylvania, the two leading causes of death are heart disease and cancer, and the rates for both causes have declined in recent years.⁷ Table 3.3 shows a significant reduction in the share of decedents for residents age 85 and older. The reduction is partially due to the large influx of Baby Boomers during the forecast period that reduces the median age and decedent rates for that age group.

Table 3.3
Deaths as a Share of Population by Age Group and Year

	2010	2015	2020	2025	2030
Age 0-44	0.1%	0.1%	0.1%	0.1%	0.1%
Age 45-64	0.6	0.6	0.7	0.6	0.6
Age 65-74	1.9	1.9	1.8	1.8	1.9
Age 75-84	4.9	4.8	4.5	4.2	4.3
Age 85+	14.0	14.4	14.5	14.4	13.8
Total	1.0	1.0	1.1	1.1	1.2

Sources: The 2010 and 2015 data are from the Pennsylvania DOH with calculations by the IFO. The 2020, 2025 and 2030 data are projections by the IFO.

Domestic Migration Trends

Table 3.4 displays Pennsylvania’s net domestic migration in 2010, 2014 and 2018 for various regions and states.⁸ The top half of the table displays net migration by region. In total, net domestic migration to Pennsylvania declined by 19,057 (-1,674 to -20,731) from 2010 to 2018 (i.e., a net outflow). Although the state gained residents due to an increase in domestic net migration from border states, the decline of net migration from other regions, especially the Southeast has been more significant. It is likely that higher out-migration to these regions is due to the growing demographic composition of retirees in Pennsylvania who find the warmer climates attractive. The bottom half of Table 3.4 distributes net migration from border states to individual states. In 2018, Pennsylvania had positive net migration from New York, New Jersey and Maryland.

⁷ U.S. Centers for Disease Control and Prevention. National Center for Health Statistics. “Stats of the State of Pennsylvania.” <https://www.cdc.gov/nchs/pressroom/states/pennsylvania/pennsylvania.htm> (last viewed 8/4/2020).

⁸ The total net domestic migration figures are from the U.S. Census Bureau’s Components of Population Change statewide totals. Those totals are apportioned to various states and regions based on data from the U.S. Census Bureau’s American Community Survey, Public Use 1-year microdata files.

Table 3.4
Net Domestic Migration to Pennsylvania by Region and Border States

	2010	2014	2018
All States			
Border States	21,451	23,013	35,259
West	744	-18,553	-724
Southwest	-2,905	-3,889	-1,772
Northeast	-1,027	-6,779	-4,550
Midwest	-1,682	-5,450	-8,982
Southeast	<u>-18,255</u>	<u>-24,956</u>	<u>-39,962</u>
Total	-1,674	-36,614	-20,731
Border States			
New York	6,221	7,777	24,746
New Jersey	12,787	16,130	14,396
Maryland	3,134	7,948	5,267
Ohio	3,428	-7,161	-1,792
West Virginia	241	-1,442	-2,664
Delaware	<u>-4,360</u>	<u>-239</u>	<u>-4,694</u>
Total	21,451	23,013	35,259
Net International Migration	5,416	34,547	31,675

Notes: Southeast includes: VA, KY, TN, NC, SC, AR, LA, MS, AL, GA, FL & DC. West includes: WA, OR, CA, ID, NV, UT, MT, WY, CO, AK & HI. Northeast includes: ME, VT, NH, MA, CT & RI. Midwest includes: MI, IN, IL, MN, IA, MO, ND, SD, NE, KS & WI. Southwest includes: AZ, NM, TX & OK.

Source: Estimations by IFO using U.S. Census Bureau. 2010, 2014 and 2018 American Community Survey Public Use 1-year microdata files and 2019 Population Estimates, Components of Population Change.

Comparison of Components of Change in Border States

From 2010 to 2019, the data from **Table 3.5** show that Pennsylvania's cumulative population growth (0.8 percent) was lower than all border states with the exception of New York and West Virginia. Except for Delaware, Pennsylvania and all border states had slower population growth rate than the U.S. average (6.3 percent) during the time period.

The final two columns decompose the average population growth rate from 2010 to 2019 into two components: organic growth (births less deaths) and net migration. During these nine years, Pennsylvania had the second lowest organic growth of all border states (0.71 percent); only West Virginia was lower (-1.30 percent). With the exception of Maryland (4.09 percent) and New York (3.91 percent), Pennsylvania and border states had lower organic growth rates than the United States (3.76 percent). For net migration, Pennsylvania's growth rate (0.14 percent) ranked near the middle of the border states. Delaware and Maryland had higher net migration growth rates while New York, West Virginia, Ohio and New Jersey had lower growth compared to Pennsylvania.

Table 3.5
Cumulative Growth Rates of Border State Population 2010 - 2019

	Total Population	Organic Growth (Births - Deaths)	Net Migration (Incoming - Outgoing)
Delaware	8.44%	2.58%	5.88%
Maryland	4.71	4.09	0.68
Ohio	1.32	1.77	-0.41
New Jersey	1.03	3.21	-2.19
Pennsylvania	0.78	0.71	0.14
New York	0.39	3.91	-3.52
West Virginia	-3.28	-1.30	-1.96
United States	6.31	3.76	2.55

Note: Total population growth includes a residual amount that is not included in organic growth or net migration.

Source: U.S. Census Bureau. Cumulative Estimates of the Components of Resident Population Change for the United States, Regions, States, and Puerto Rico: April 1, 2010 to July 1, 2019.

Regional and National Population Trends

The following series of maps display notable, longer-term demographic trends at the county and national levels. Although state-level data are useful in the analysis of demographics, geographic detail provides policymakers context for these data and may assist in the development of policy solutions appropriate to certain regions of the state.

Pennsylvania County Population Growth Over Time

Figure 4.1 presents the average annual population growth rates of all counties in Pennsylvania from 2000 to 2010 and 2010 to 2019.⁹ The following trends were observed:

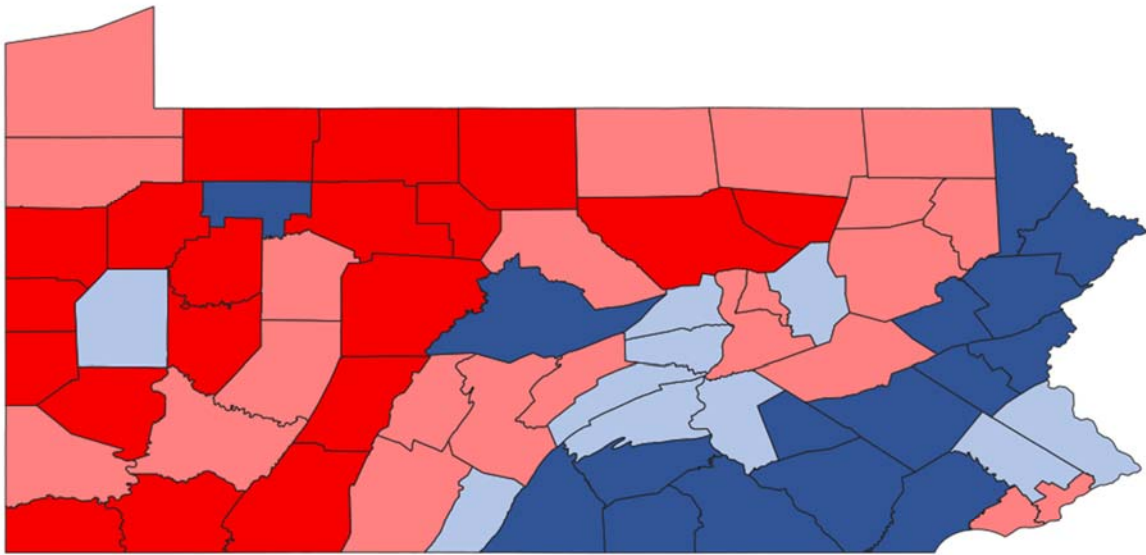
- In both time periods, the Southeast (Berks, Bucks, Chester, Delaware, Lehigh, Montgomery, Northampton and Philadelphia) and South Central (Adams, Cumberland, Dauphin, Franklin, Lancaster, Lebanon, Perry and York) regions recorded population growth around 0.5 and 1.0 percent per annum, respectively. From 2010 to 2019, Cumberland County was the only county in the state to experience an average annual population growth greater than 0.8 percent.
- From 2000 to 2010, the Northeast region (Carbon, Lackawanna, Luzerne, Monroe, Pike, Schuylkill and Wayne) grew by 0.5 percent per annum, likely due to rapid increases in natural gas production in that part of the state. However, from 2010 to 2019, that growth appears to have peaked as population declined by 0.2 percent per annum on average.
- The Northern region (Bradford, Cameron, Clarion, Crawford, Elk, Erie, Forest, Jefferson, McKean, Mercer, Potter, Sullivan, Susquehanna, Tioga, Venango, Warren and Wyoming) contracted in both periods, and that contraction has accelerated in the current decade.¹⁰
- Although Butler County experienced moderate growth (0.4 percent per annum), the population of the Southwest region (Allegheny, Armstrong, Beaver, Butler, Fayette, Greene, Indiana, Lawrence, Washington and Westmoreland counties) continues to slowly decline (-0.3 percent per annum).
- The population of the Central region (Bedford, Blair, Cambria, Centre, Clearfield, Clinton, Columbia, Fulton, Huntingdon, Juniata, Lycoming, Mifflin, Montour, Northumberland, Snyder, Somerset and Union) began to decline within the last decade at an average rate of 0.3 percent per annum.

Similar to national demographic trends, Pennsylvania's rural counties have a greater share of the retiree and elderly population than urban and suburban counties. The next subsection examines this topic in more detail.

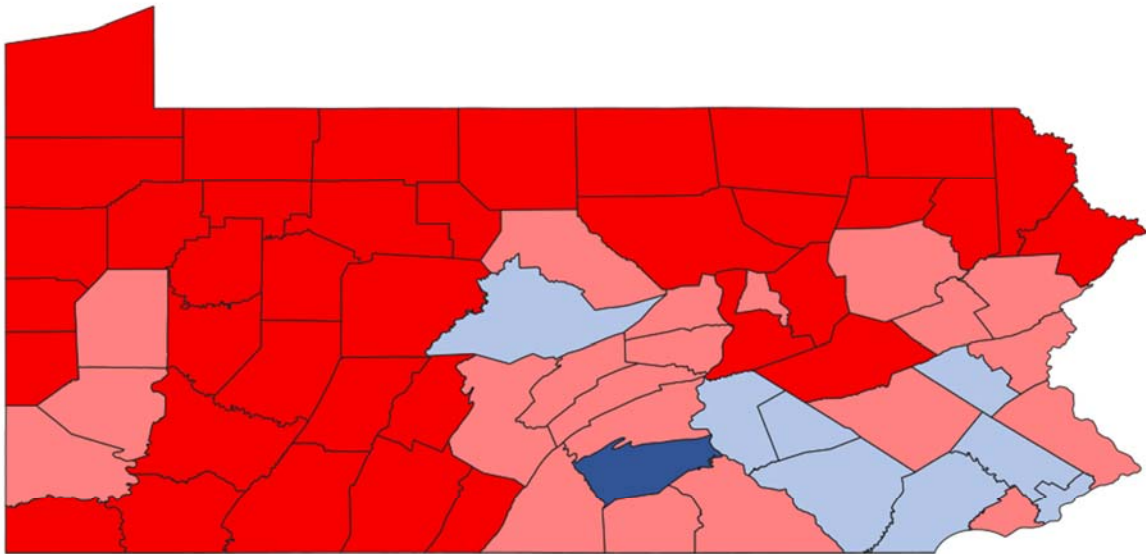
⁹ A reference map of all county names is included in the Appendix of this report.

¹⁰ The unusually strong growth in Forest County from 2000 to 2010 (4.5 percent per annum) is due to the construction of a large, federal prison that began operations in late 2004.

Figure 4.1
Average Annual Population Growth 2000 to 2010



Average Annual Population Growth 2010 to 2019



Source: U.S. Census Bureau. 2000 and 2010 Census and 2019 Population Estimates.

Regional Share of Residents Age 65 and Older

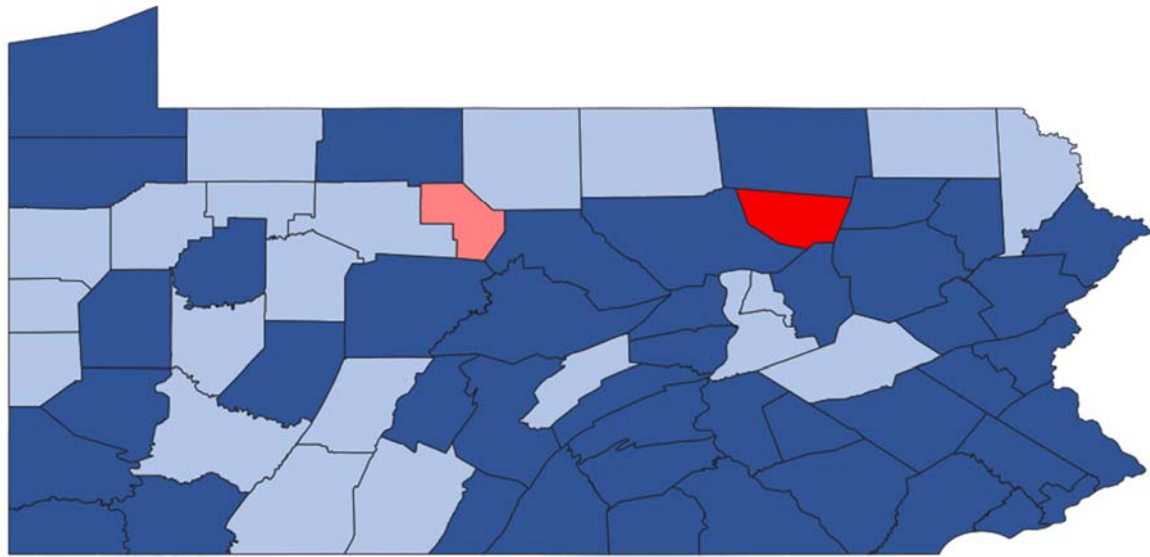
For 2019, approximately 18.7 percent of the state population was age 65 and older, with a median age of 43.6 years. Of those over age 65, a little more than one-quarter were in the elderly age cohort (over 80 years old). By comparison, data for 2010 show that approximately 15.4 percent of the state population was age 65 and older, and 41.9 years was the median age. Of that share, three-tenths were elderly. **Figure 4.2** presents the proportion of the population age 65 and older for all counties for 2010 and 2019.¹¹ Regional trends show a significant increase in the number of counties where retiree and elderly residents comprise more than one-fifth of the county population.

- The Southeast region had the lowest proportion of residents age 65 and over for 2010 (13.8 percent) and 2019 (16.7 percent). The median age for this region was around 40 years old, with Philadelphia County's median age of 34.7 years driving down the regional distribution.
- The South Central region had a higher than average share of residents over the age of 65 in 2019 (19.1 percent). However, it had a lower median age of 40.3 years in 2010 and 41.3 years in 2019.
- For the Northeast region, the number of residents age 65 and older grew by 17.5 percent from 2010 to 2019, despite a total population decline of 1.8 percent. This trend caused the regional median age of 42.2 years to increase to 45.2 years.
- The Northern region had the highest proportion of the population over age 65 for 2010 (18.3 percent) and 2019 (22.8 percent). Over 20 percent of the state's retiree and elderly population resides in this region, but only 7 percent of the overall population.
- The data show that rural, sparsely-populated counties have much higher shares of residents age 65 and older. For example, while Sullivan County had the highest share of residents age 65 and older (29.0 percent), it was only third largest in total county population.
- Due to Allegheny County, the Southwest region had the second highest share of the state's total population over age 65 (20.5 percent) in 2019. Roughly 22.6 percent of the regional population was age 65 or older.
- The Central region had the second largest gap between growth in the overall population (-2.5 percent) and those over age 65 (19.1 percent). This is due to steep drops in population for Cambria (-9.2 percent), Somerset (-5.5 percent) and Blair (-4.1 percent) counties but strong growth in retiree and elderly cohorts for Centre (38.3 percent), Snyder (28.3 percent) and Union (24.8 percent) counties.

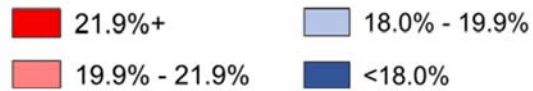
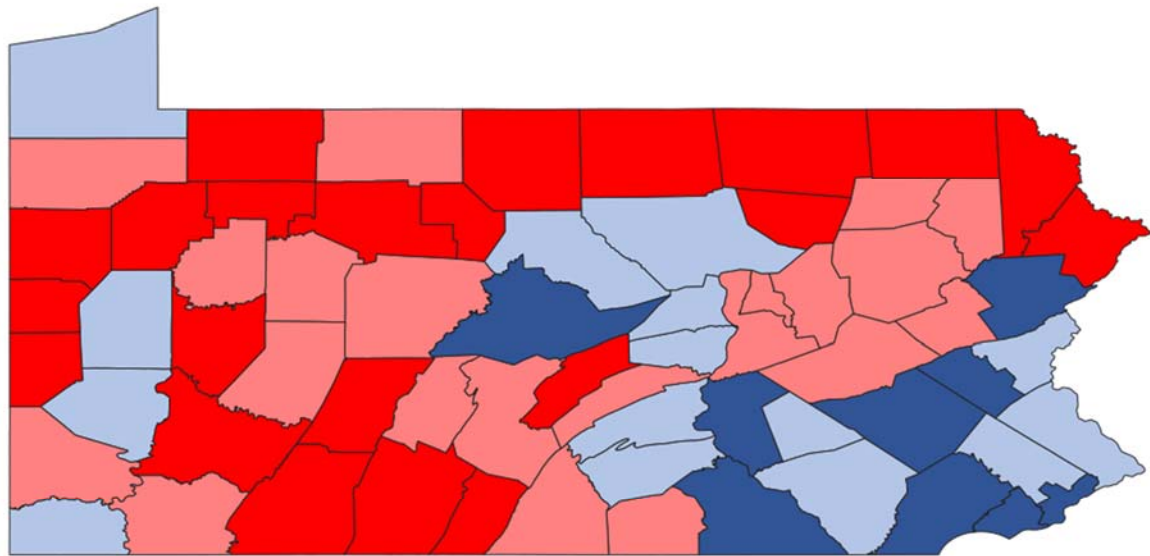
On the whole, regions that attract younger populations, such as Centre County or areas along the state's eastern border, have lower proportions of residents over age 65. As discussed earlier, much of the state's net domestic migration is from states on the eastern border (i.e., New York and New Jersey) and those migrants tend to be younger than the median Pennsylvania resident.

¹¹ A reference map of all county names is included in the Appendix of this report.

Figure 4.2
Share of County Population Over 65 in 2010



Share of County Population Over 65 in 2019



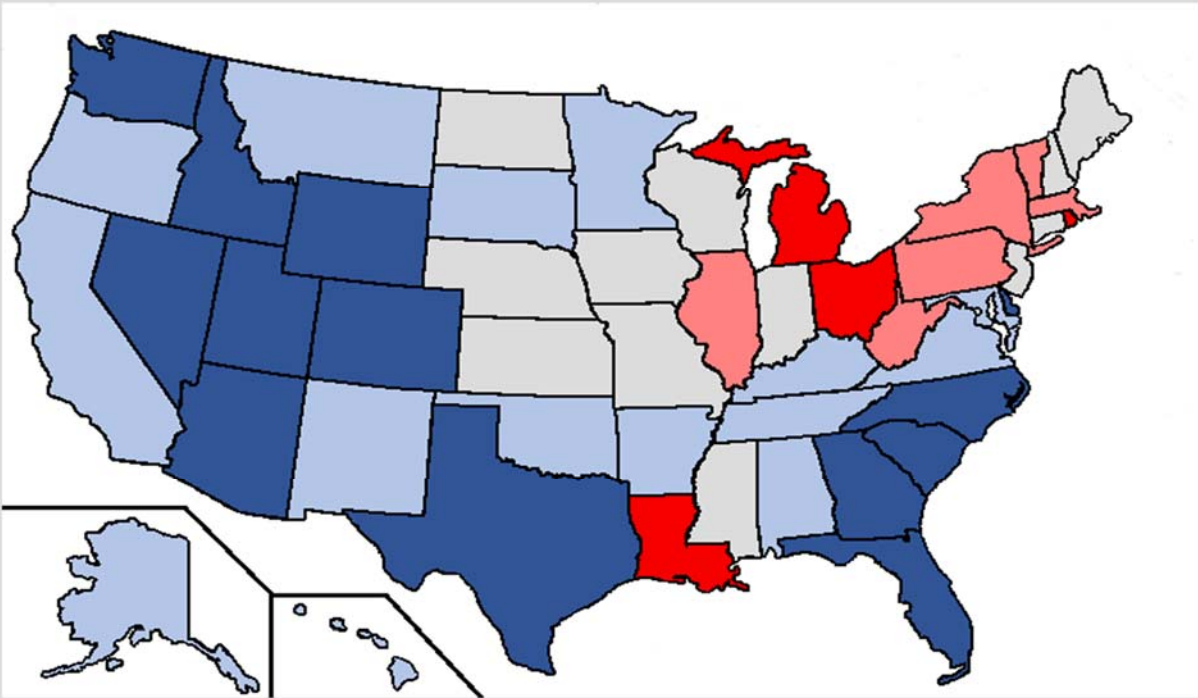
Source: U.S. Census Bureau. 2000 and 2010 Census and 2019 Population Estimates.

Population Growth Across States

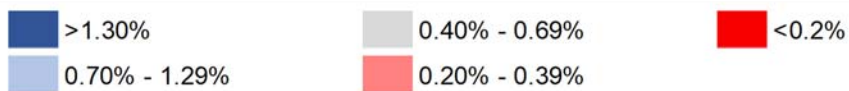
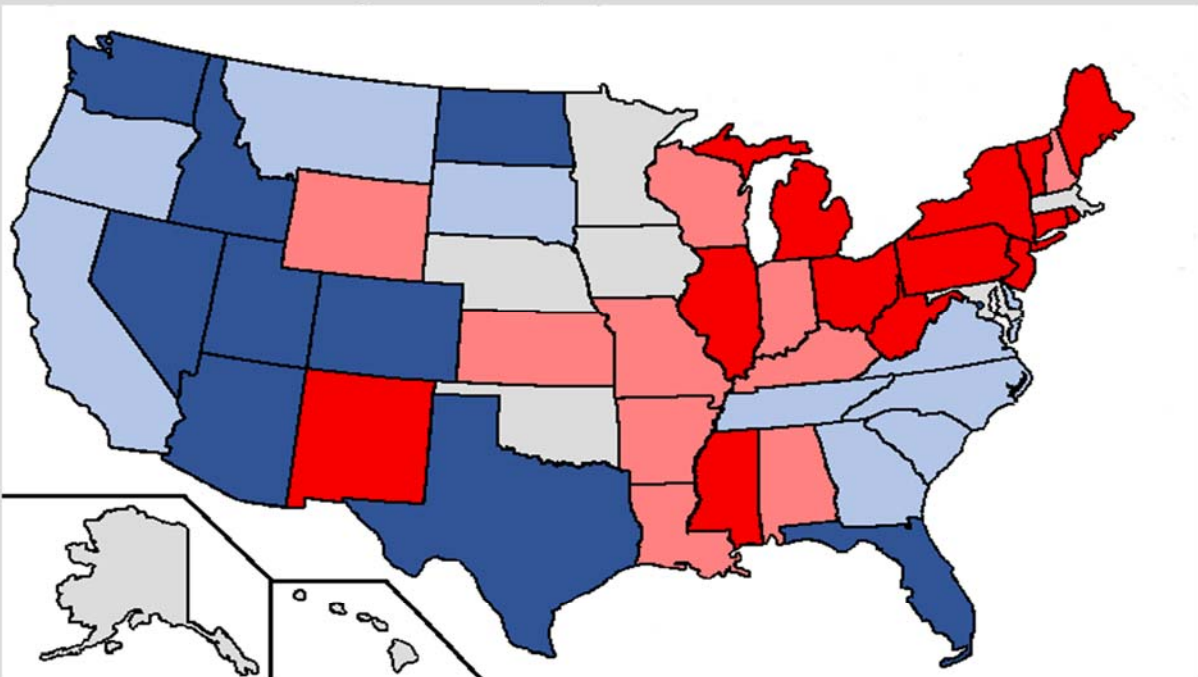
Figure 4.3 provides a visual representation of average annual population growth across all states for 2000 to 2010 and 2010 to 2019. Population expansion for the nation has slowed considerably in the current decade compared to the previous one. Moreover, the distribution of that growth varies across regions and, in some cases, states. The following points were observed:

- Pennsylvania and its border states grew by 0.34 percent per annum from 2000 to 2010. For the second time period, growth slowed to an average rate of 0.14 percent per annum. The Commonwealth was third among border states for lowest growth in the most recent decade (0.09 percent per annum), behind West Virginia (-0.37 percent per annum) and New York (0.04 percent per annum).
- Delaware was the only border state to record a positive growth rate for both periods of around 1.0 percent per annum due to a continual influx of retirees.
- The Southeast region, which many Pennsylvanians migrate to, grew by 1.3 percent per annum from 2000 to 2010 and 1.0 percent from 2010 to 2019. Florida (1.6 and 1.5 percent, respectively) contributed to most of that growth, although the Carolinas (1.6 and 1.1 percent) and Georgia (1.7 and 1.0 percent) also recorded growth rates in excess of 1.0 percent for both periods.
- In the earlier period, states in the Southwest and West regions, including Nevada (3.1 percent per annum), Arizona (2.2 percent per annum) and Utah (2.2 percent per annum), grew the fastest. This trend continues into the next decade. New Mexico was the only state in this region to experience relatively flat (0.20 percent per annum) growth from 2010 to 2019 compared to its moderate growth (1.3 percent) in the previous period.

Figure 4.3
Average Annual Population Growth 2000 to 2010



Average Annual Population Growth 2010 to 2019



Source: U.S. Census Bureau. 2019 Population Estimates.

Appendix

Table A.1
Pennsylvania Historical Population 2010 to 2019

Age	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
0-4	729	726	721	715	715	714	711	709	705	698
5-9	752	749	749	747	742	737	733	729	726	726
10-14	790	785	778	772	768	760	754	755	755	750
15-19	902	886	867	851	837	829	822	814	809	804
20-24	877	888	893	891	881	862	844	826	812	799
25-29	785	800	811	826	844	858	865	870	869	861
30-34	734	753	769	782	790	796	806	816	830	848
35-39	758	729	717	717	725	738	754	769	782	792
40-44	849	844	831	811	785	756	726	714	715	722
45-49	952	927	903	878	854	839	832	817	798	774
50-54	985	987	975	960	948	930	903	879	854	831
55-59	885	904	924	939	947	950	949	937	922	910
60-64	752	790	787	800	818	839	856	874	888	895
65-69	555	565	613	635	664	696	730	727	738	755
70-74	428	435	449	473	488	499	507	551	572	599
75-79	360	356	354	358	364	366	373	385	407	420
80-84	311	307	302	293	287	282	280	279	283	288
85-89	202	204	206	206	206	205	204	202	199	196
90-94	82	86	91	94	97	98	100	100	100	100
95-99	21	22	23	24	25	26	28	30	31	32
100+	3	3	3	4	4	4	4	5	5	5
Total	12,711	12,746	12,767	12,776	12,788	12,785	12,782	12,788	12,801	12,802

Note: Thousands of residents.

Source: Data are from the U.S. Census Bureau 2019 Population Projections. Age groups 85-89, 90-94, 95-99 and 100+ are estimations by the IFO.

**Table A.2
Pennsylvania Population Projections 2020 to 2030**

Age	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
0-4	690	682	675	668	662	657	651	646	641	635	630
5-9	726	724	721	716	709	701	693	686	679	673	667
10-14	745	742	737	732	732	732	730	727	723	716	707
15-19	796	790	789	788	782	778	774	769	764	764	763
20-24	792	786	778	772	767	759	754	754	752	747	743
25-29	845	829	811	796	783	776	770	762	757	752	744
30-34	864	873	880	878	871	854	838	820	805	792	785
35-39	798	808	818	831	849	865	874	881	880	872	856
40-44	736	753	768	781	790	796	807	816	829	847	863
45-49	746	717	705	706	713	728	744	759	771	780	787
50-54	816	811	798	779	756	729	701	689	690	698	712
55-59	893	868	845	821	798	785	781	768	749	727	701
60-64	898	899	887	872	861	845	821	800	777	755	743
65-69	775	792	809	822	828	831	831	819	806	796	781
70-74	628	660	655	667	684	702	716	732	744	749	751
75-79	430	438	479	496	521	546	574	564	578	592	609
80-84	291	297	308	328	337	345	351	391	399	422	442
85-89	194	195	196	200	204	205	211	220	236	241	246
90-94	100	99	97	96	94	94	95	96	99	100	99
95-99	33	33	33	33	32	33	32	31	31	30	32
100+	6	6	6	7	7	7	7	7	7	7	8
Total	12,802	12,800	12,796	12,789	12,780	12,768	12,754	12,737	12,718	12,695	12,668

Note: Thousands of residents.

Source: Data are projections by the IFO using data from the U.S. Census and PA Department of Health.

Reference County Map

