SCHOOL OF BUSINESS AND ECONOMICS

KING INSTITUTE FOR REGIONAL ECONOMIC STUDIES (KIRES)

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Demographics of an Aging Southwest Virginia: Implications for the Regional Economy.

Introduction and Background

For centuries, the age distributions of populations exhibited a pyramidal shape with the bulk of their members lying at the wide base of the pyramid, in the younger age groups. However, with the introduction of birth control, the decreasing necessity of larger families to work in agricultural based economies, and the mortality decline of the older population, the age distribution of populations began to vary from the pyramidal shape in the 20th century. Our research examines the extent to which the age distribution of the SWVA population has changed over the past 75 years. We also report what the age distribution would look like by 2040 if present trends continue unabated.

We define Southwest Virginia as the counties of Buchanan, Dickenson, Lee, Russell, Scott, Smyth, Tazewell, Washington, and Wise. The results of our research are somewhat disturbing in that we see a pronounced shift in the age distribution of the SWVA population from younger to older; in no uncertain terms, the distribution has lost its pyramidal shape. The prevailing worry when observing this trend is that young people are leaving SWVA. Young people are essential to the healthy growth and development of an economy as they provide innovative ideas and a skilled labor force. The dilemma for SWVA is this: to keep its young people the region needs to attract new industries to expand the economic base and provide good-paying jobs. However, it will become increasingly difficult for the region to attract new businesses if the outmigration of young people continues at its current pace.

Methodology

We employ the concepts of the *population pyramid* and the *age dependency ratio* to track the actual and projected trend in the age distribution of the SWVA population over a 100 year period, 1940 to 2040. These concepts visually highlight the magnitude to which the age distribution has shifted over time.

Population Pyramids

The population pyramids depicted in the Appendix (Figures A1-A11) were created using data published by the US Census Bureau (http://www.census.gov/prod/www/decennial.html) and the Weldon Cooper Center of the University of Virginia. (http://www.coopercenter.org/demographics). All data for the years 1940-2010 is from the US Census Bureau, and all projected data for the years 2020-2040 is from the Weldon Cooper Center.

Population pyramids are a depiction of a population's age and sex distribution. Population pyramids are divided into two sections, each representing either a population's males or females. Each tier of the pyramid depicts a five year age increment of the population, typically from 5 and under to 85 and older. (The 1940 and 1950 pyramids in Figures A1 and A2 differ in increments at the top of their pyramids due to a different reporting format by the US Census Bureau in those years).

The ideal distribution of a population is a pyramidal shape with the bulk of the population lying in younger age classifications as shown in the SWVA 1940 population (Figure A1). This shape is healthy because it has a strong base of younger members of the population to support the older members of the population. This shape, however, is not the only shape that indicates a healthy or stable economy. As long as a population has the bulk of its population within the working age demographic (ages 15-64) it can support the dependent members of its population (14 & under and 65+). This distribution shape can be seen in the US 1940 population (Figure A1).

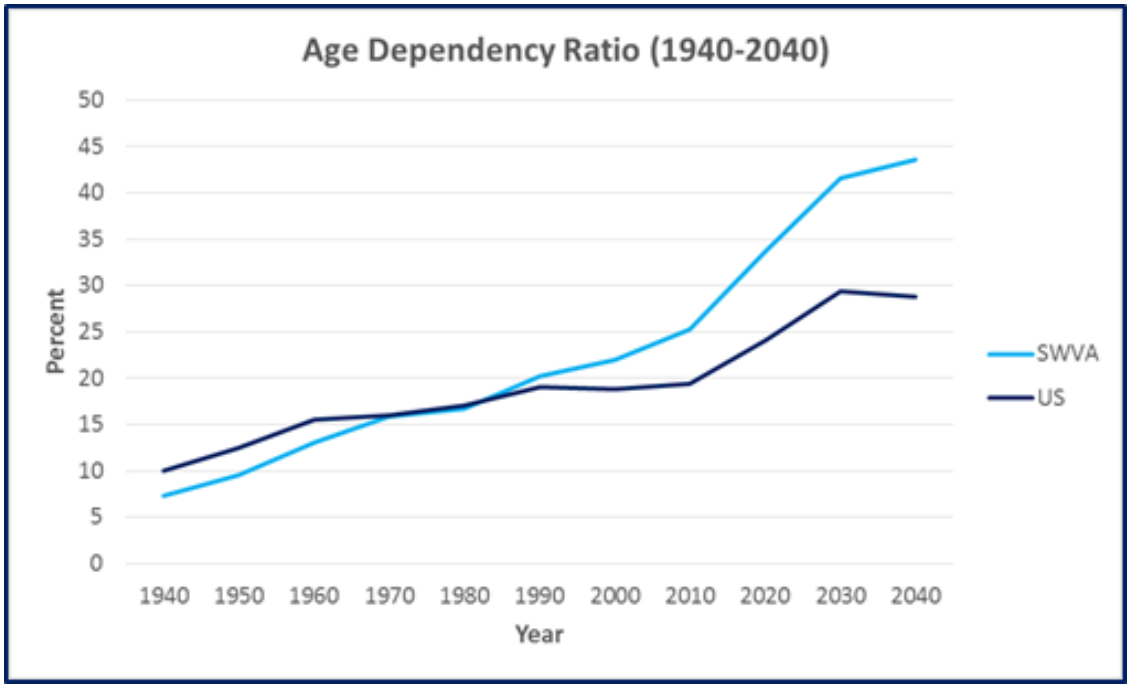
As can be seen in Figures A1-A5, SWVA had an age distribution that was either more stable or fairly close to that of the national picture from 1940-1980. The indentation in the 20-30 age demographic for both SWVA and the US in the 1960 and 1970 pyramids (Figures A3-A4) is not of major concern because it is believed to be caused by the Vietnam War and not an unexplained mass exodus of young people from the economy. However, what is concerning is the loss of a great number of young people in the 20-30 demographic from SWVA in 1990 (Figure A6) that is uncharacteristic of the national trend. This means that young people began to leave SWVA during the 1980s. It is not the purpose of this report to determine the reasons for this exodus of young people; the decline of coal production in the region likely was a contributing factor. However, the aging of the population is of great concern because young people are essential to the healthy growth and development of an economy. They provide innovative ideas that help keep an economy from becoming stagnant, a skilled labor force, and they help support the older members of the economy. This trend of losing young people in SWVA continued through 2010 (Figures A6-A8) and is projected to continue at an alarming rate through 2040 (Figures A9-A11).

Age Dependency Ratio

The age dependency ratio is the percentage of a population that is 65 and older that is dependent upon on the working age population (15-64). The age dependency ratio is determined using the following equation:

$$Age\ Dependency\ Ratio = \frac{number\ of\ people\ aged\ 65\ and\ over}{number\ of\ people\ \ aged\ 15-64} \times 100$$

The age dependency ratio trends for SWVA and the US from 1940-2040 are depicted in the graph below. This graph summarizes the picture painted by the population pyramids. The graph shows that while SWVA had only 7 percent of its population dependent upon its working age population in 1940 (3 percent lower than the US), the projected ratio for 2040 is 43 percent (15 percent higher than the US). Having nearly half of its population in the dependent category is an alarming statistic for those concerned with the economic and social welfare of SWVA.



Implications

Advancements in the healthcare industry have led to a decline in the mortality rate. Across the U.S. seniors are living longer and can expect a better quality of life than in the past. This is of course something to be applauded; however, there are serious consequences to an aging

population. First, as the age structure changes this puts more pressure on the public programs such as the U.S. social security system and Medicare. Second, older people are more likely to be disabled and suffer from chronic health conditions such as Alzheimer's disease, cancer, and dementia. Third, many older people have lower incomes or live on fixed incomes: while many programs (such as Social Security) offer a Cost-of-Living Adjustment (COLA) to ensure that the purchasing power of the elderly is not eroded by inflation, these adjustments are often insufficient to compensate the elderly. This is because the Social Security office and others calculate the COLA using the spending habits of the typical urban wage earner and clerical worker (or CPI-W). However, the spending habits of the elderly often differ significantly from the typical urban wage earner and clerical worker. For example, the COLA for 2015 was an increase of benefits of 1.7%; however, medical care expenses, which make up a larger portion of older people's budgets, went up by 2.1 percent. Lastly, as a result of women living longer than men, the upper tiers of the pyramids are dominated by women living without spousal support, living alone, or institutionalized. While these trends are reflected in the U.S. in general they are even more exaggerated in SWVA. Furthermore, the challenges expressed above are even more burdensome in SWVA because of the lack of a broad base of young people to support the aging population.

Conclusions

Two questions that flow quite naturally from this research are these: Is the trend in the age distribution of the SWVA population reversible? Can the community and its civic, business and political leaders take actions to, if not reverse, at least stabilize or slightly lower the age dependency ratio?

We cannot answer these questions, but we see three broad approaches to the problem.

- Do nothing. The likely result of doing nothing is an eventual depletion of the young, skilled labor force, especially in the more rural areas of the region, and an economy heavily dependent on government transfer and income support payments.

- Think small. Upfront costs of this approach are small, but the payoff is likely to be small. Many communities in a situation similar to that facing SWVA are using this approach. Perhaps, the biggest payoff from this approach has been to improve the quality of life for current residents by providing cultural and recreational opportunities, more attractive main streets and incentives for local entrepreneurship and sustainable development. Some of these projects attract tourists who bring outside money into the region, thereby expanding the economic base. The cumulative effect of these projects will help grow the region's economic base, but the economic impact may be too small to cause any meaningful change or stabilization in the observed trend in the age dependency ratio.

- Think big. The upfront costs of this approach are large and may require some degree of public financing. Here, we are referring to improvements in infrastructure, workforce development and incentives to attract new industries. While upfront costs are large, the payoff from these investments may also be large. The objective of this approach is to attract industries with substantial economic impacts and which provide a significant number of good paying jobs for a skilled labor force. This approach offers the best chance to stabilize, if not reverse, the trend in the age dependency ratio. Previous research by KIRES found that manufacturing offered the best hope for rebuilding the economic base of SWVA (see "Replacing Coal Mining Jobs: Marginal Economic Impacts of Selected Industries in Southwest Virginia," February, 2015).

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APPENDIX

Population Pyramids (1940-2040)

Figure A1:

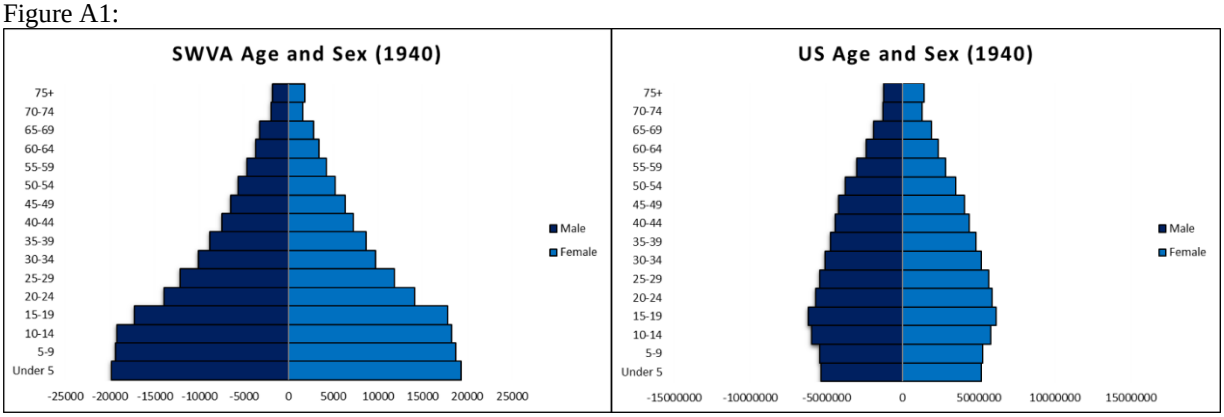


Figure A2:

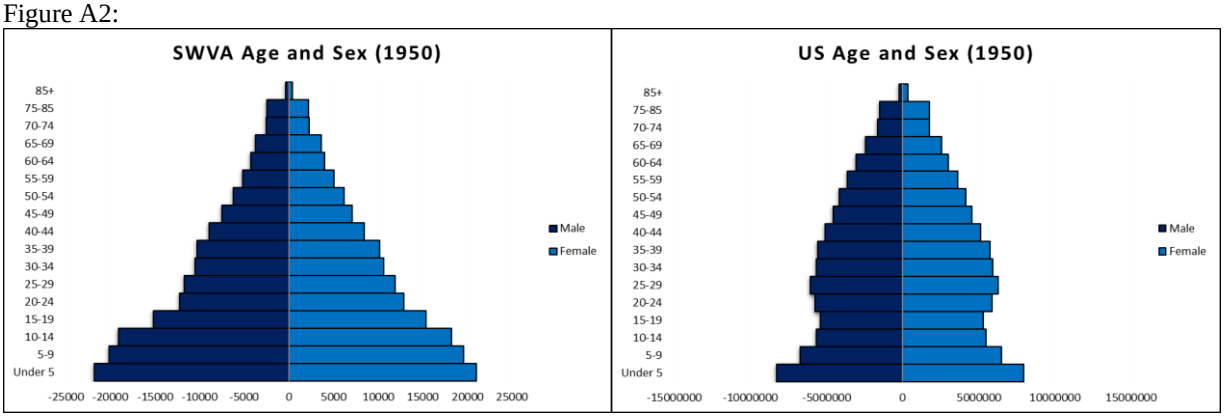
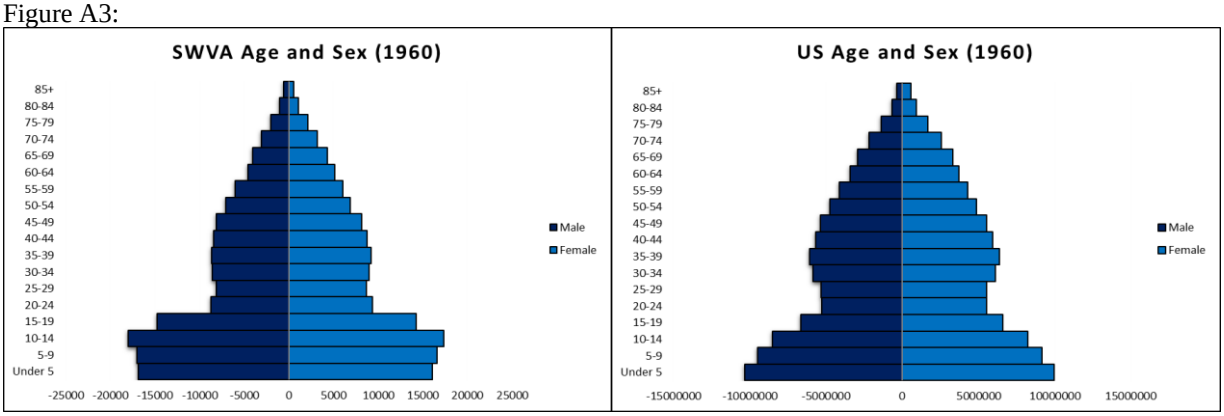


Figure A3:



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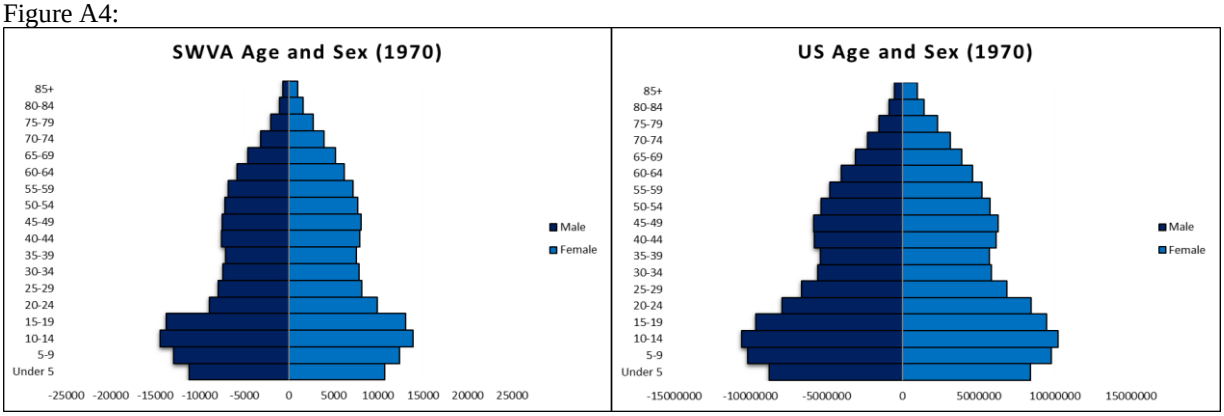


Figure A5:

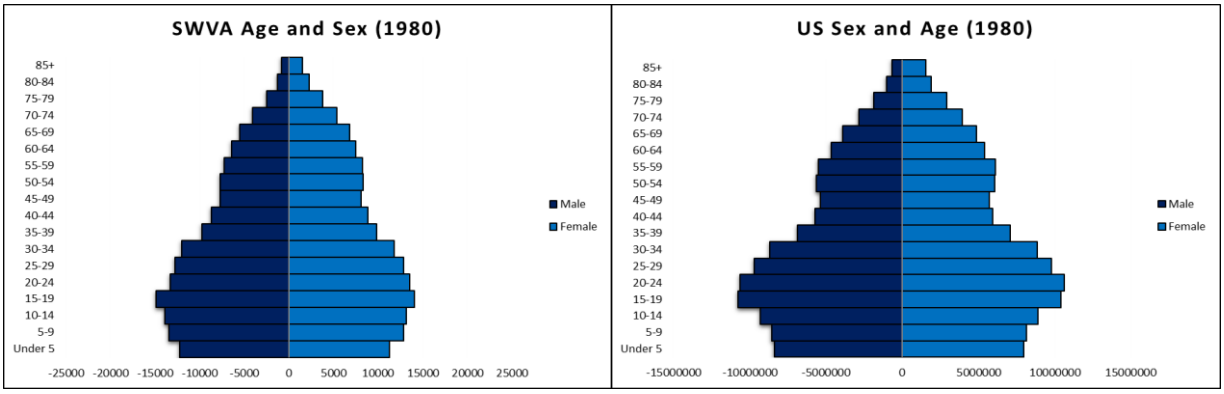
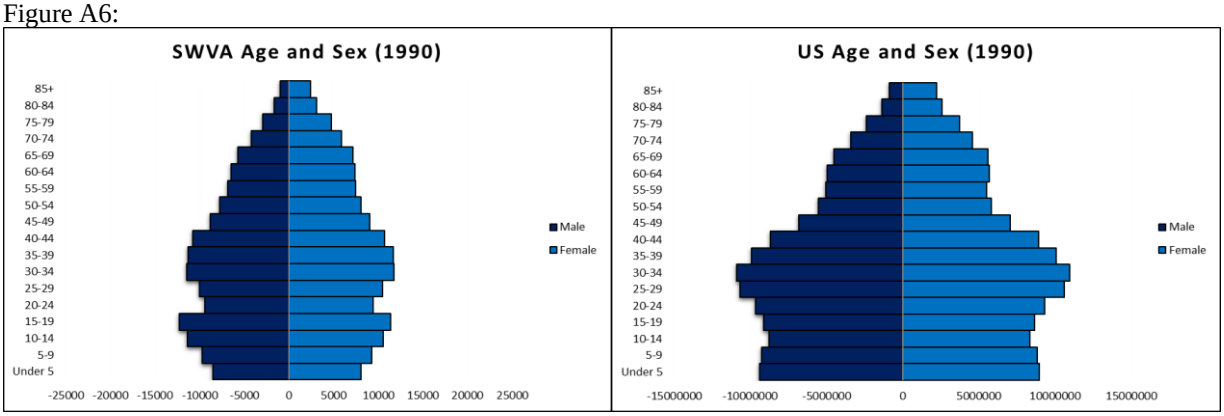


Figure A6:



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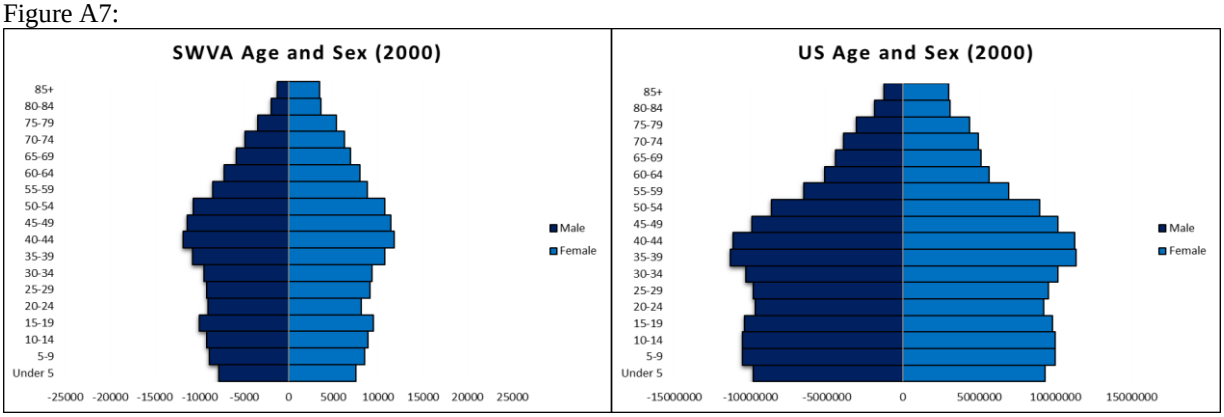

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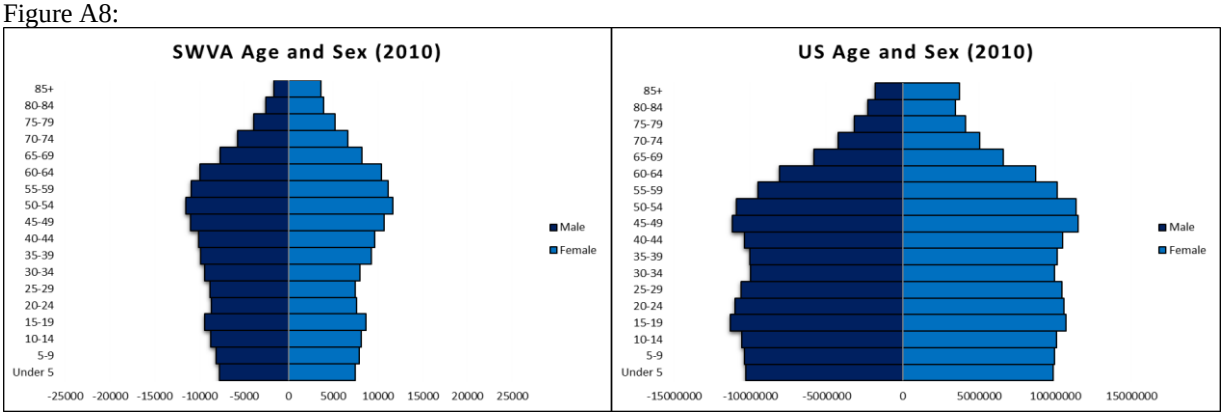

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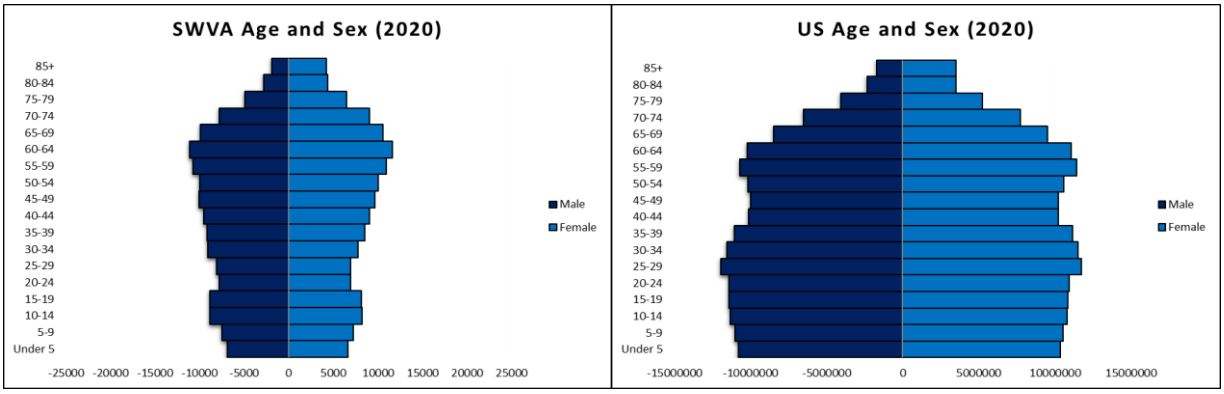

Figure A10:

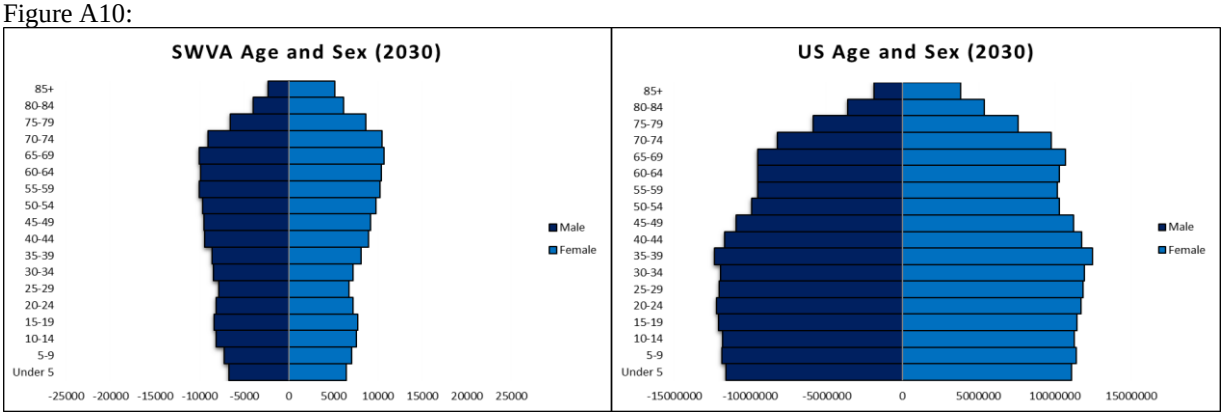

Figure A11: