



PREPARED FOR  
**South Carolina Department of Employment and Workforce**  
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# A Literature Review and Decomposition Analysis:

## Insights into South Carolina's Labor Force Participation Rate Trends

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## Executive Summary

Why are South Carolinians concerned about the labor force participation rate (LFPR)? People are the key to economic productivity. When people are opting out of working, everyone in South Carolina suffers—businesses, government entities, and residents. South Carolina needs to understand the underlying trends in workforce disengagement to create meaningful policies and strategies to increase the number of workers participating in the workforce. The overarching question from these current and past labor trends becomes what explains the decline in South Carolina’s labor force participation rate and what can be done to reverse this trend?

To understand the current state of labor participation in South Carolina, we consider local historical trends against a national backdrop. We then tease out regional nuances and decompose the changes that are unique to South Carolina while keeping national trends ever-present. To accomplish this, we hold constant population and age while allowing other workforce characteristics to change.

### Literature Review of Labor Force Participation Rate in the Nation Points to an Aging Population

A literature review about labor force participation rates in the nation shows the main factor driving the decline since the year 2000 is an aging population, contributing as much as two-thirds to the overall drop from 67.1% in 2000 to 63.3% in 2013.

In addition to aging trends, the following factors decreased participation rates among age cohorts and by gender:

- increased school enrollment combined with a focus on educational attainment among young adults;
- globalization and loss of manufacturing jobs, disabilities, addictions, and increased leisure activities for men; and
- increasing educational attainment and caregiving responsibilities for women.

Many of these impacts are concentrated in certain regions, particularly rural areas, and contribute to persistently lower LFPR.

In addition to these long-term trends, the COVID-19 pandemic introduced the following factors that reduced LFPR:

- increased household income from stimulus checks and expanded unemployment benefits,
- shifts in worker preferences away from low-skilled and customer-facing jobs,

- increasing disability from Long COVID symptoms, and
- an increasing focus on the need for childcare support.

## A Decomposition of Participation Rate Changes in South Carolina Points to an Aging Population

A decomposition analysis provides the stakeholders in South Carolina with a framework for policy and strategy design to increase their labor force participation rate (LFPR). Why does this matter? Accounting for changes outside of the realm of public policies such as composition of the population means stakeholders can more efficiently target policies and strategies to improve labor participation rates to the other factors affecting nonparticipants.

The statewide LFPR declined from 67.3% in 1994 to 58.8% in 2019.<sup>1</sup>

- A decomposition of the LFPR between 1994 and 2019 by age shows that most of the **decline is attributable to an aging population**.
  - Changes in the population share of different age groups subtracted 8.7 percentage points from the state's LFPR.
    - The share of population 65 years of age and over increased from 11.9% to 23.3%, and the share of population between 55 and 65 also increased, thereby reducing the LFPR.
    - Among all age groups, the increasing share of population 65 and older accounted for 72.8% of the reduction in state LFPR.
    - On the positive side, the decline in LFPR due to population share was partially offset by increasing participation of older workers 55 to 64 and 65 years and over, particularly women.
  - Changes in the prime-age population (ages 25 to 54) also affected LFPR as this group typically has the highest participation.
    - The share of the population in this age range declined from 58.8% to 47.2%
    - The LFPR in this group decreased from 83.1% to 80.6%
- By educational attainment, the decomposition analysis shows that increased educational attainment from 1994 to 2019 helped offset the state's decline in LFPR, as individuals with higher educational attainment have higher participation rates.
  - If the state's overall educational attainment had not improved from 1994, the state's LFPR would be 53.7% in 2019, much lower than the actual 58.8%.
  - It is concerning, however, that within-group LFPR declined for all educational groups, meaning a smaller share of people in South Carolina are participating in the labor force at all levels of education now compared with the 1990s.
- Decomposition results of South Carolina with neighboring states of North Carolina and Georgia between 1994 and 2019 indicate that all three states experienced declines in LFPR, but the degrees of decline in the neighboring states were smaller than in South Carolina.
  - The comparisons show that while an increase in the retirement age population (65+) also played a significant role in the declining LFPR in those two states, its effect in South Carolina is much more pronounced.
  - It may be that South Carolina was affected by an aging population more than the other two states.
    - South Carolina attracts a higher percentage of retirees.<sup>2</sup>

<sup>1</sup> The main source of historical data came from the U.S. Census Bureau's Current Population Survey (CPS).

<sup>2</sup> South Carolina's population aged 65 and older represents 17.7% of its total population based on the American Community Survey, 2016-2020, compared with 16.3% in North Carolina and 14.9% in Georgia.

- The state is less attractive to younger populations, especially young immigrant populations.<sup>3</sup>

During the COVID-19 pandemic, from 2019 to 2021, a decomposition analysis shows both changes in population composition and changes in within-group participation for different age groups are bringing down South Carolina's LFPR.

- Overall, the decomposition results are similar between South Carolina and two comparison states of North Carolina and Georgia—about half of the changes in LFPR in the neighboring states during the pandemic are attributable to changes in population composition and about half are attributable to within-group changes in labor force participation.

## Labor Force Participation Rates Differ Within South Carolina Counties

There are substantial variations in LFPRs across South Carolina counties, suggesting various parts of the state may benefit from approaching LFPR improvement differently.<sup>4</sup>

- Participation rates range from a low of 36.6% in McCormick to a high of 66.6% in York.
- Geographically, LFPRs are higher along the borders with North Carolina and Georgia and around cities such as Columbia, Charleston, and Greenville.

Rural and urban areas also differ in LFPR makeup.

- For the civilian population 16 years and over, there is an 8.4 percentage point difference between the lower LFPR in rural areas compared with higher participation in urban areas.
- The largest percentage point (p.p.) difference in LFPR between rural and urban areas is for males, with a LFPR of 71.8% in rural and 82.2% in urban areas of South Carolina (a difference of 10.3 p.p.).
- The next largest differences are for Black or African American populations (10.0 p.p. lower in rural areas), individuals with a disability (9.8 p.p.), Hispanic or Latino populations (9.3 p.p.), and those with less than a high school diploma or equivalent (9.2 p.p.).

A regression analysis on factors likely affecting LFPR in South Carolina counties indicated that:<sup>5</sup>

- A greater percentage of men in a county is associated with a large negative effect on LFPR and a 1 p.p. increase in percentage of men in the population is associated with a 0.9 p.p. drop in LFPR.
- The participation rate in rural counties is 0.06 percentage points lower, holding other factors constant. Higher concentrations of manufacturing employment in rural areas suggest that rural areas that retained manufacturing employment and job opportunities for manufacturing workers may be somewhat insulated from some of the larger LFPR reductions in other rural areas.
- The percentage of the population with a disability also has a negative but relatively small decline in LFPR for each percentage point increase in population with a disability.

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<sup>3</sup> South Carolina's population aged 25 through 54 represents 38.0% of its total population based on the American Community Survey, 2016-2020, compared with 39.2% in North Carolina and 40.4% in Georgia.

<sup>4</sup> Based on the American Community Survey, 2016-2020.

<sup>5</sup> Results were not significant for age, concentration of industries such as retail and accommodation and food services, opioid dispensing rates, or the interaction of manufacturing in rural areas.

## Policies and Strategies Can Increase Labor Force Participation

The literature review and the decomposition analysis for South Carolina suggest several strategies for improving the long-term decline in the state's LFPR such as

- Improve labor force reentry for former prisoners
- Expand policies that help people balance employment and caregiving.
- Support transportation projects that connect workers in rural areas to urban areas.
- Increase workforce flexibility by promoting work from home.
- Add programs for the needs of youth who are not in school and not working to develop hard and soft skills tied to lower skilled in-demand jobs with a career path.
- Strengthen guidance and coursework connected to in-demand careers in middle school and high school for youth in school and encourage employers to offer work experiences such as paid internships and job shadowing.

Some existing policies (or a lack of policies) likely have a negative impact on LFPR.

- Early retirement age and large disability assistance can entice older workers to permanently exit the workforce.
- Restrictive hiring of formerly incarcerated individuals or barring them from occupational licensing reduces the potential workforce.
- Addressing the lack of family-friendly policies is expected to increase LFPR for the 25 through 44 age group of women.<sup>6</sup>

A review of the Labor Force Participation Survey commissioned by South Carolina Department of Employment and Workforce indicates that there are opportunities for region-specific policies to increase labor force participation.

- In Tier IV counties, which tend to be low income and rural, lack of transportation is the main barrier to employment. This region can focus on low-cost and accessible transportation projects that connect workers to job centers.<sup>7</sup>
- There are also information barriers for Tier IV counties. To bridge the gap between jobs and workers, local workforce development organizations can increase marketing of available jobs. In addition, workforce centers can be strategically located so that job seekers find it convenient to go there and look for employment. Along these lines, workforce development agencies can coordinate with existing community centers such as libraries to share job opportunity information.
- In Tier II counties, family friendly policies can be explored to increase labor force participation.
- In Tier III counties, where there is a relatively larger concentration of retirees, policies can be implemented to target retirees to incentivize some to return to the workforce.

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<sup>6</sup> The United States has a relatively unsupportive unemployment insurance program for women during and after childbirth compared with other countries. Additional incentives in the workforce to increase LFPRs may include paid leave policies, tax policies, and family leave policies.

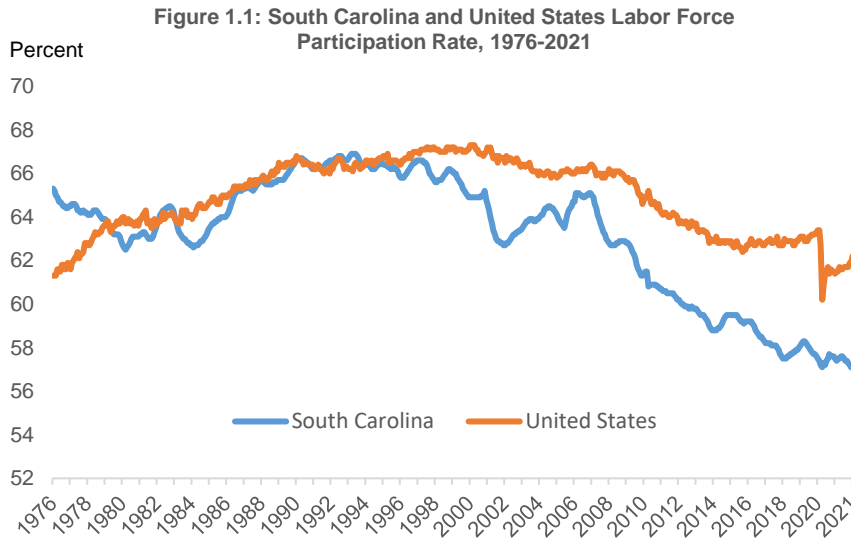
<sup>7</sup> Please see Section 5.2 for the definition of counties in different tiers.

# 1. Background

Since peaking in the early 2000s, U.S. labor force participation has steadily declined. Job losses during the pandemic drove participation rates even lower, and they have not yet fully recovered.

The South Carolina labor force participation rate (LFPR) generally mirrored that of the nation until the mid-1990s when it slowed relative to the nation (Figure 1.1).<sup>8</sup> Since 1994, the state LFPR has been consistently lower than the nation. The latest data show that the state LFPR was 57.0% in August 2022 compared with 62.4% in the nation. The South Carolina LFPR is one of the lowest in the nation and is lower than neighboring states.

The South Carolina Department of Employment and Workforce (DEW) convened a Labor Force Participation Task Force to investigate the causes of this decline in LFPR and impacts to the state. Their mission is to uncover root causes and tie them to policies, strategies, and actions with measurable outcomes and results. The research initiative



Source: Grady and Von Nessen, 2022

organized by DEW included a survey of South Carolinians, a literature review explaining the causes of the reduction in participation, and a decomposition analysis to identify the demographic groups driving the changes in LFPR in South Carolina. Chmura Economics & Analytics (Chmura) was retained to conduct the literature review of LFPR changes and factors affecting those changes.<sup>9</sup>

<sup>8</sup> Bryan Grady and Erica Von Nessen, South Carolina Task Force on Labor Force Participation, “Initial Analysis,” South Carolina Department of Employment and Workforce, February 2022.

<sup>9</sup> Chmura provides economic software, consulting, and data so clients can make informed decisions that benefit their communities. Chmura’s PhD economists, data scientists, and strategic planners guide clients through their local labor market. Over the past 24 years, Chmura has served hundreds of clients nationwide with thoroughness, accuracy, and objectivity.

## 2. Literature Review

### 2.1. Long-Term Trends in LFPR

Changes in labor force participation rates (LFPR) are influenced by many different factors. Research has shown that LFPR is pro-cyclical, meaning it will increase during economic expansions, and decline during recessions.<sup>10</sup> During a recession, lack of job opportunities means more individuals become discouraged and exit the labor force, and the opposite occurs during expansions. Since those changes are temporary and well understood, this literature review does not cover the changes in LFPR due to business cycles. Instead, it focuses on long-term changes in LFPR in the United States and in South Carolina. More specifically, it reviews research focused on factors such as long-term demographic, economic, and policy changes.

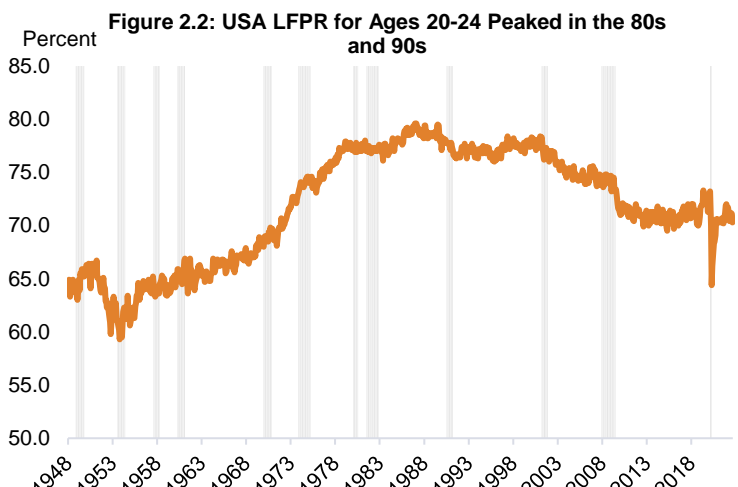
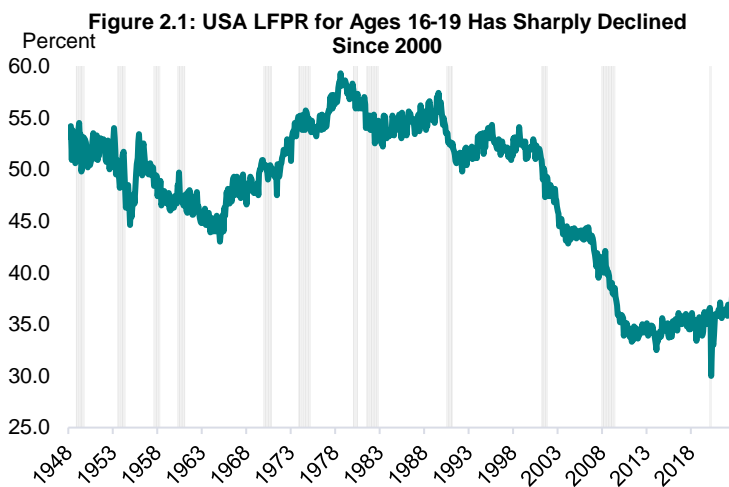
The COVID-19 pandemic may have altered some of those dynamics in the short term. For that reason, this report includes a section discussing the factors affecting LFPR during the pandemic.

#### 2.1.1 Individual Characteristics-Age Structure

The literature is in agreement that much of the decline in LFPR since at least the year 2000 can be attributed to an aging population, though estimates of the extent of that impact varies.<sup>11</sup> This section focuses on changes in the population by age from 1990 up to but not including the COVID-19 pandemic.

Participation by age has shifted significantly over time as shown in the LFPR trends in the charts below.

- Youth age 16 to 19 peaked in the late 1970s at 59%; fell below 50% in 1992, then dropped to 40% during the Great Recession (2007 to 2009). It hovered around 35% leading up to the COVID-19 pandemic.
- Young adults age 20 to 24 rose from 65% in the 1940s through 1960s; reached 70% in 1972, then climbed to 80% in the late 1980s and 1990s; dropped to 70% again in the years prior to the pandemic.
- Prime-aged workers was 80% in the 1980s and largely stayed at that rate.



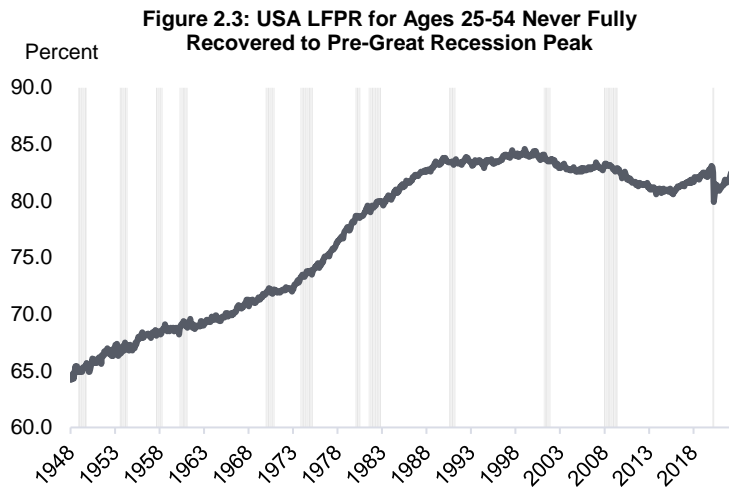
Source: Bureau of Labor Statistics. Shaded bars indicate

Source: Bureau of Labor Statistics. Shaded bars indicate recessions

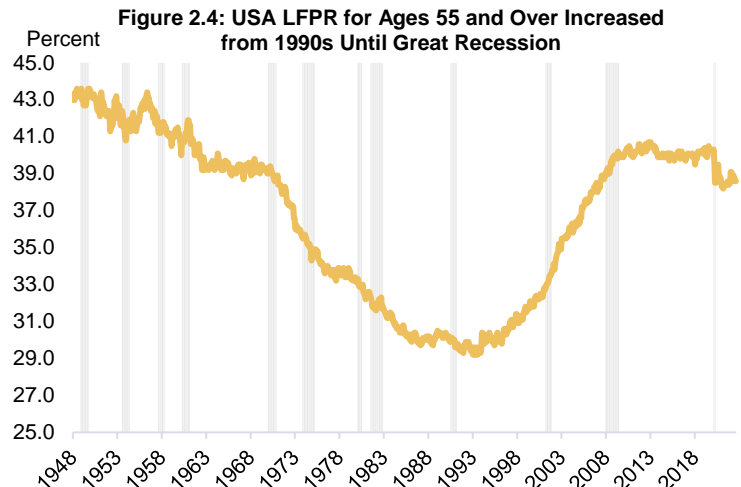
<sup>10</sup> Willem Van Zandweghe, "Interpreting the Recent Decline in Labor Force Participation," *Economic Review*, Federal Reserve of Kansas City, First Quarter, 2012, Page 5-34.

<sup>11</sup> For a review of the literature on factors influencing the decline in labor force participation rates, including by age, see Perez-Arce, Francisco and María Prados, "The Decline in the U.S. Labor Force Participation Rate: A Literature Review," *Journal of Economic Surveys* Volume 35, Issue 2, pages 615-652, <https://doi.org/10.1111/joes.12402>

- Workers 55 years and above LFPR was 29% in the early 1990s; 40% around the Great Recession and surpassed the participation rate of youth 16 to 19 years old for the first time in this data series in 2008.



Source: Bureau of Labor Statistics. Shaded bars indicate recessions



Source: Bureau of Labor Statistics. Shaded bars indicate recessions

An aging population has been associated with a declining labor force across the globe. In the United States, that phenomenon has been evident in the baby-boomer cohort. Aaronson et al. (2014) estimate that the effects of aging on labor force participation have shifted over time. These trends range between +0.7 percentage points (1976 to 1990), -0.1 percentage points (1990 to 2000), and -1.3 percentage points (2007 to 2014). In other words, aging of the population can explain nearly half of the decline in labor force participation between 2007 and mid-2014. Looking at retirements during the Great Recession (2007 to 2009) and early recovery, these authors found that retirement rates slowed, but it was a continuation of this trend since the late 1990s that led to changes in pension plans, social security, educational attainment, and longer life expectancy.<sup>12</sup>

Fujita (2014) looks at falling participation rates starting from 2000 and finds a similar contribution from retirements. Specifically, the authors estimate retirement and disability account for approximately 65% of the decline in labor force participation from 2000 to 2013. Fujita looks at flows of workers into and out of retirement and disability populations. The findings support a small likelihood that those who leave the labor force for these reasons will return.<sup>13</sup>

Regarding youth and young adult declines in labor participation rates, researchers agree that a trade-off between school and work has taken place. Over the past few decades, high school graduation rates have increased substantially. Since the 1990s, Krueger (2017) finds school enrollment has largely offset the declining participation rates for young workers.<sup>14</sup> Bauer et al. (2019) look at the way youth spend their time from the American Time Use Survey and find evidence of trade-offs between work and school. Specifically, youth and young adults who are working while in school spend less time on education than those who are in school alone.

As education intensity<sup>15</sup> in schools has increased, students are choosing to spend more time on their education preparation than in prior decades. Students are choosing not to work at all rather than splitting their time between

<sup>12</sup> Aaronson, Stephanie, Fomaz Cajner, Bruce Fallick, Felix Galbis-Reig, Christopher Smith, and William Wascher. "Labor Force Participation: Recent Developments and Future Prospects." *Brookings Papers on Economic Activity*, Fall 2014.

<sup>13</sup> Fujita, Shigeru, "On the Causes of Declines in the Labor Force Participation rate", Federal Reserve Bank of Philadelphia, Feb 2014

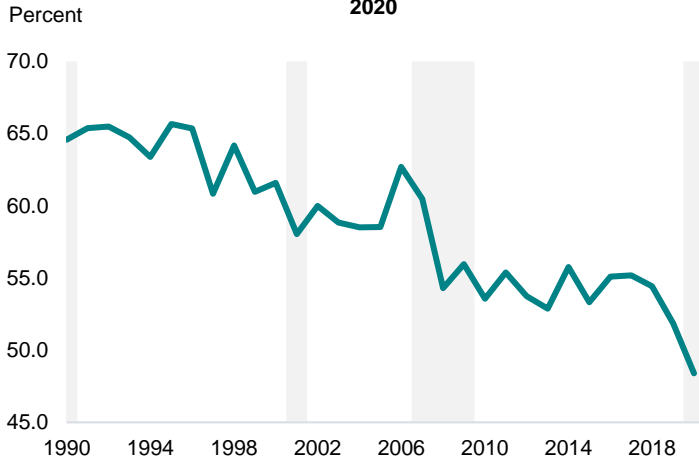
<sup>14</sup> Alan B. Krueger, "Where Have All the Workers Gone? An Inquiry into the Decline of the U.S. Labor Force Participation Rate," *Brookings Papers on Economic Activity*, Fall 2017, Page 1-87.

<sup>15</sup> Characterized by more strenuous coursework, such as Advanced Placement (AP) courses for college credit, and a greater share of high school enrollment in courses such as advanced math and foreign languages. See also Teresa L. Morisi, "Teen labor force participation before



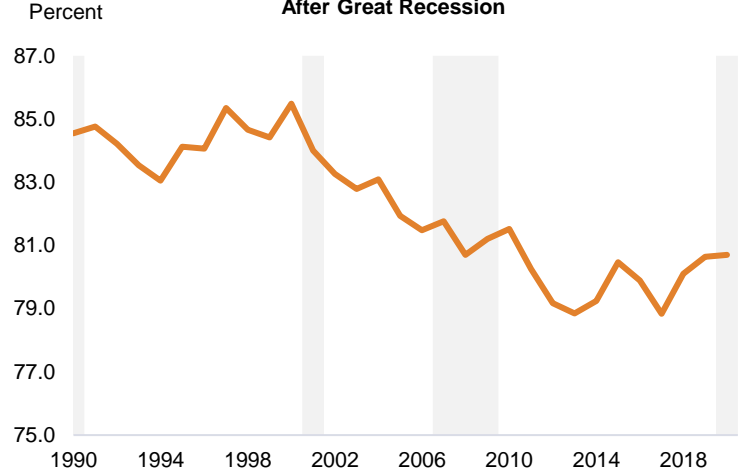
work and school. This finding is supported by the fact that there has not been a corresponding increase in disengaged youth (who are neither in the labor force nor in school) since 2000.<sup>16</sup> While there are returns from networking and building work skills while in school, policies aimed at increasing youth and young adult labor force participation should be careful not to reverse desirable educational outcomes such as higher school enrollment rates and high school graduation rates.

**Figure 2.5: SC LFPR for Ages 16-24 Dropped Below 50% in 2020**



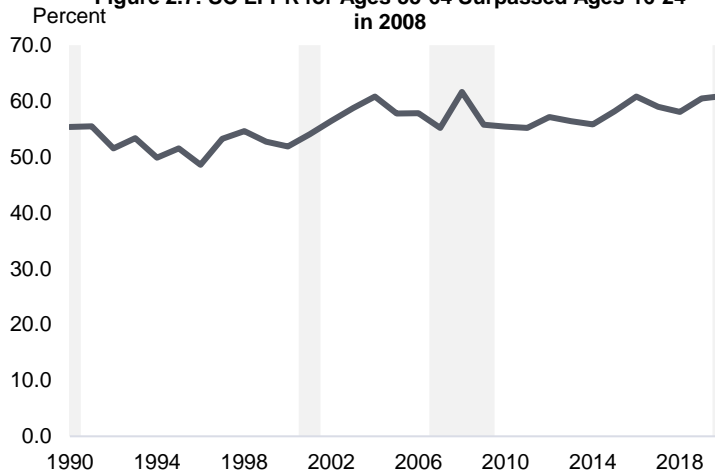
Source: Chmura's calculations from BLS CPS microdata

**Figure 2.6: SC LFPR for Ages 25-54 Hovers Around 80% After Great Recession**



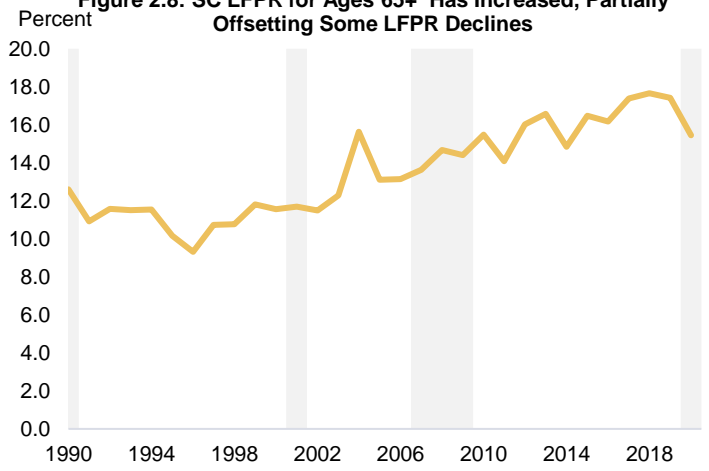
Source: Chmura's calculations from Bureau of Labor Statistics CPS

**Figure 2.7: SC LFPR for Ages 55-64 Surpassed Ages 16-24 in 2008**



Source: Chmura's calculations from BLS CPS microdata

**Figure 2.8: SC LFPR for Ages 65+ Has Increased, Partially Offsetting Some LFPR Declines**



Source: Chmura's calculations from BLS CPS microdata

In South Carolina, as in the nation, labor force participation rates have improved for two groups since 1990—ages 55 to 64 and ages 65 and older (Figures 2.5 to 2.8). The data suggest older South Carolina workers may be more likely to delay retirement beyond when they are first eligible for Social Security retirement benefits. The rising participation of workers ages 55 and up has helped partially offset declines from the prime-age group (25 to 54). Prime-age participation rose from 84.6% in 1990 to 85.5% in 2000<sup>17</sup> but has since steadily declined about five percentage

and after the Great Recession and beyond," *Monthly Labor Review*, U.S. Bureau of Labor Statistics, February 2017, <https://doi.org/10.21916/mlr.2017.5>

<sup>16</sup> Bauer, Laren, Emily Moss, Ryan Nunn, and Jay Shambaugh, "Employment, Education, and the Time Use of American Youth" Brookings, Sept 2019.

<sup>17</sup> Part of this rise may be related to a significant increase in employment due to the opening of a BMW plant in Spartanburg County in 1994. The plant initially created 500 jobs but has grown to employ approximately 11,000 workers as of 2022 (see <https://www.sccommerce.com/why->

points to 80.6% in 2019. Reasons for the decline in prime-age labor force participation and differences by gender are explored further in section 2.1.2. Notably, participation rates for ages 55 to 64 surpassed participation by young adults ages 16 to 24 once in 2004, and then has been reliably higher since the Great Recession. The decline in young adult labor force participation coincides with an increase in the percentage in school and not in the labor force. In 1994, 25% of youth and young adults in South Carolina age 16 to 24 were in school but not employed or looking for work, and that percentage rose 15 percentage points to 40% by 2019.

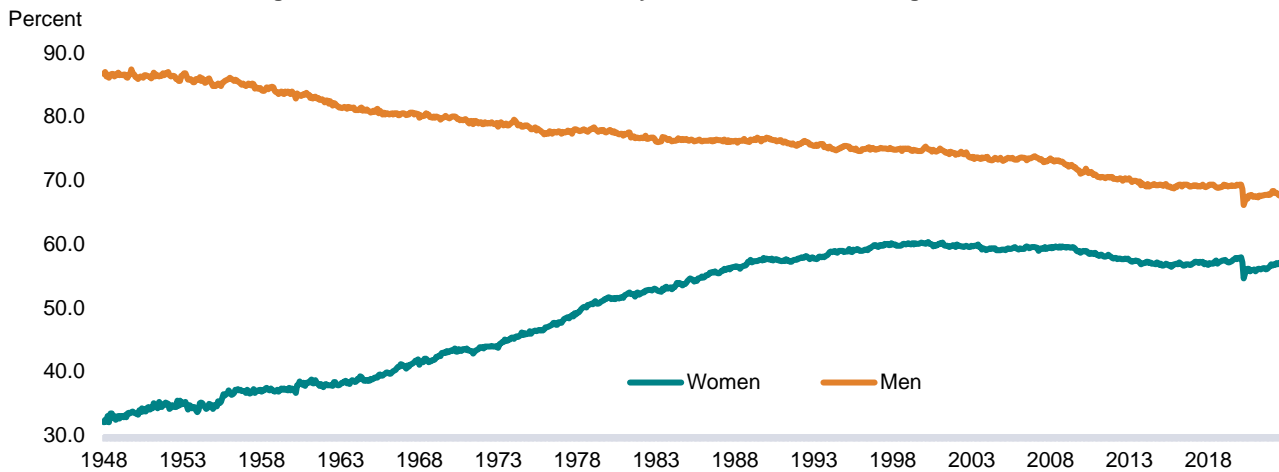
Key findings from the literature in this section are summarized in the table below.

	Time Period	Finding
	Age	
Aaronson et al. (2014)	1976-1990	Population age contributed +0.7 p.p. in LFPR
	1990-2000	Population age contributed -0.1 p.p. in LFPR
	2007-2014	Population age contributed -1.3 p.p in LFPR
Fujita (2014)	2000-2013	Retirements account for 65% of decline in LFPR
Krueger (2017)	1990-2017	School enrollment offset declining participation for young adults
Bauer et al. (2019)	1993-1998 and 2000-2018	Young adults spend more time on school, less time on non-school activities like work

### 2.1.2. Individual Characteristics-Gender

In the United States, long-term trends related to LFPR by gender have remained persistent over the last three decades. First, LFPR for women is consistently lower than that of men, even though the gaps have shrunk in recent years (Figure 2.9). The same patterns are also observed in South Carolina, as Grady and Von Nessen (2022) showed in their paper.<sup>18</sup> Second, is the changing patterns for LFPR for men and women with a consistent declining trend in men’s LFPR in the post-World War II era, but continuous growth in LFPR for women up to the 1990s. Female LFPR stabilized from 2000 to 2010, but it has also started to decline since 2010.

Figure 2.9: LFPR for Men has Generally Declined While Increasing for Women

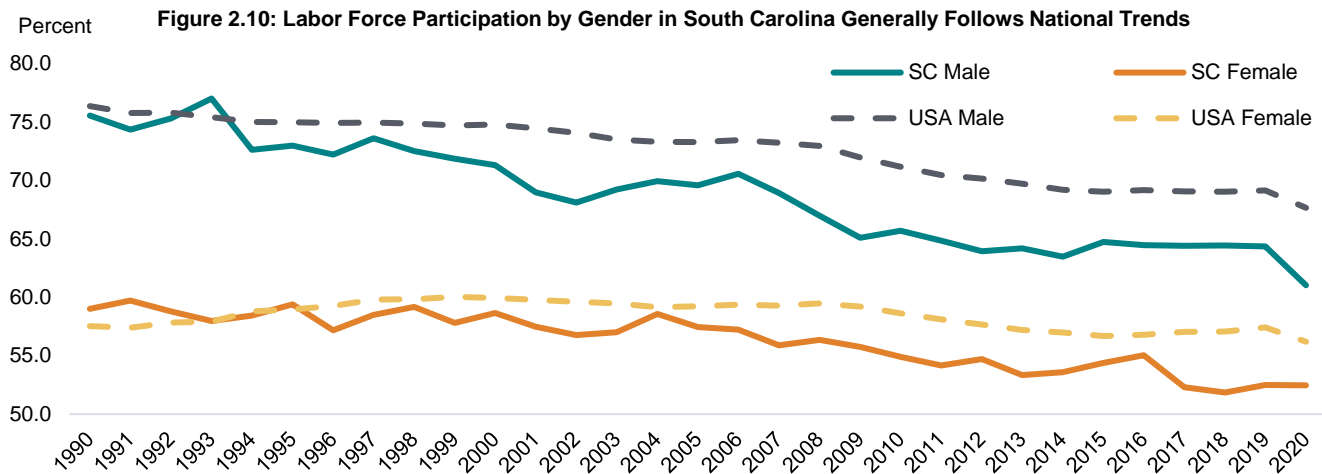


Source: Bureau of Labor Statistics

[sc/success-stories/bmw](https://www.greenville.com/news/benteler.html)). The plant also attracted suppliers such as Benteler Automotive, which constructed a plant in 2005 employing 115 people (see <https://www.greenville.com/news/benteler.html>).

<sup>18</sup> Bryan Grady and Erica Von Nessen, South Carolina Task Force on Labor Force Participation, “Initial Analysis”, South Carolina Department of Employment and Workforce, February 2022.

A similar pattern holds for South Carolina as well, as shown in Figure 2.10. Between 1990 and 2019, the LFPR for men declined more than 11 percentage points from 75.6% to 64.4%. In comparison, the LFPR for women declined over 6 percentage points, from 59.0% to 52.5%.<sup>19</sup>



Source: Chmura's calculations from Bureau of Labor Statistics CPS microdata

Extensive research has been published explaining the rapid rise of women's LFPR after World War II throughout the 1990s. The expanding educational opportunities for women, changes in social attitudes toward working women, and family and childbearing all contributed to the rise. Technology changes also played a role—with advances in household technology such as washing machines and microwave ovens, the time allocated to household work for women declined—freeing up time for wage and salary work.<sup>20</sup>

Research in the past few years puts more emphasis on explaining the LFPR decline for both men and women observed since the Great Recession. A paper by Alan Krueger provided a comprehensive explanation through 2017 on the declining trend in national LFPR for both men and women, and it offered insights related to differences in men's and women's LFPR.<sup>21</sup> Krueger (2017) concluded that while the aging population explains a majority of LFPR decline from 2000 through 2017, there were some differences in the evolution of LFPR for women. Women's LFPR plateaued in the 1990s and eventually declined after the Great Recession. For prime-age men, however, LFPR has been falling since the Bureau of Labor Statistics (BLS) started tracking that data in 1948.

Reasons for declining LFPR are different for men and women. For prime-age men, Krueger (2017) suggests the need for pain medication may be a factor contributing to declining LFPR. About half of prime-age men not in the labor force take some form of pain medication, and the LFPR has fallen more severely in counties with larger concentrations of prime-age men being prescribed opioid medication, which may in some instances lead to depression.

One paper by Dotsey, Fujita, and Rundanko (2017) proposed that the increasing wage gap between high- and low-skilled workers contributed to the declining LFPR for men. This gap indicates lower demand for low-skilled workers, especially low-skilled male workers. In addition, the increased globalization and import competition since the 1980s may

<sup>19</sup> Beginning in 1994, the Census Bureau began using a new questionnaire to collect the CPS designed for computer-assisted interviewing. It is estimated that the redesign increased the LFPR for women and decreased the employment-population ratio for men. See <https://www2.census.gov/programs-surveys/cps/methodology/CPS-Tech-Paper-77.pdf>

<sup>20</sup> For a summary of literature on LFPR for women, please see George Borjas, *Labor Economics*, 6<sup>th</sup> edition, Chapter 2. McGraw-Hill and Irwin, 2013.

<sup>21</sup> Alan B. Krueger, "Where Have All the Workers Gone? An Inquiry into the Decline of the U.S. Labor Force Participation Rate," *Brookings Papers on Economic Activity*, Fall 2017, Page 1-87.

also affect low-skilled male workers, as a large number of manufacturing jobs moved overseas, reducing labor demand.<sup>22</sup>

Labor force participation for young men also declined. Aguiar and others (2017)<sup>23</sup> propose an interesting hypothesis that younger men shifted their leisure to video games and other recreational activities, compared with older men. They found that the improvement in video game technology raised the utility from leisure for young men, contributing to a downward shift in labor supply.

A 2021 study by Federal Reserve Bank of Richmond economist Laura Ullrich focused on male labor force participation in the states of Maryland, Virginia, West Virginia, North Carolina, and South Carolina.<sup>24</sup> The study concluded the aging of the U.S. population is not only the main reason for overall LFPR decline, but also the main reason for male LFPR decline. For prime-age males, this paper echoed the conclusions by earlier studies, and concluded that illness, disability, and addiction reduced prime-age male LFPR. In addition, declining manufacturing employment—due to technology, automation, and globalization or import competition—may inhibit the labor supply for prime-age males. Drawing from other research, Ullrich (2021) also proposed that cultural factors, such as delayed marriage, incarceration, and computer and video games also contributed to the declining LFPR in men.

Reasons for declining LFPR for women are different from men. Krueger (2017) explained that a large number of women between 25 and 44 reported “home responsibilities” as a barrier for participating in the workforce. That response can imply the need to care for children as well as elderly, as the baby boomer generation entered retirement age. Krueger (2017) also pointed out differences between the United States and Canada and other OECD (Organization for Economic Cooperation and Development) countries and proposed that a lack of family friendly policies in the United States may depress women’s LFPR in the nation.

A 2017 study by Black, Schanzenbach, and Breitwieser focused on the 2000 to 2016 decline in LFPR for women, especially prime-age women.<sup>25</sup> They observed that the labor force participation among women in the United States steadily increased between 1962 and 2000, which helped to offset the declining LFPR of prime-age men. However, the labor force participation of women reversed trends and declined after 2000. Part of the decline is because younger women became more likely to seek out higher levels of education during which time they dropped out of the labor force. The decline in overall women’s LFPR, however, is driven by the decline among prime-age women. When analyzed by educational attainment, the authors found women with less education experienced the sharpest declines in labor force participation, yet even those with at least a bachelor’s degree saw decreases in labor force participation after 2000.

Like the Krueger (2017) paper, Black et al. (2017) also hypothesized that family responsibilities may be the reason for declines in female LFPR and that labor market policies may help improve the LFPR for prime-age women. For example, Black et al. note the United States is one of the only developed nations without a paid maternity leave program. Furthermore, the United States has a relatively unsupportive unemployment insurance program that lacks the public jobs programs and job search assistance and training available to many citizens of other developed nations. The authors inferred that more family-friendly labor policies may help improve prime-age women’s labor force participation rates.

<sup>22</sup> Michael Dotsey, Shigeru Fujita, and Leena Rudanko, “Where is Everybody? The Shrinking Labor Force Participation Rate”, *Economic Insights*, Federal Reserve Bank of Philadelphia, Fourth Quarter, 2017.

<sup>23</sup> Mark Aguiar, Mark Bils, Kerwin Kofi Charles, and Erik Hurst, “Leisure Luxuries and the Labor Supply of Young Men”, *NBER Working Paper Series* 23552, 2017. Accessed September 16, 2022, [https://www.nber.org/system/files/working\\_papers/w23552/w23552.pdf](https://www.nber.org/system/files/working_papers/w23552/w23552.pdf)

<sup>24</sup> Laura Ullrich “Male Labor Force Participation: Patter and Trends”, Federal Reserve Bank of Richmond, *Economic Focus*, First Quarter, 2021

<sup>25</sup> Sandra E. Black, Diane Whitmore Schanzenbach, and Audrey Breitwieser, “The Recent Decline in Women’s Labor Force Participation” in *Driving Growth Through Women’s Economic Participation*, the Hamilton Project by Brookings, Page 5-17, October 2017.

Key findings from the literature reviewed in this section are summarized in the table below.

	Time Period	Finding
Gender		
Borjas (2013)	1945-1990	Educational opportunities, changes in social attitude, and technology contributed to rapid rise in women's LFPR
Krueger (2017)	1990-2017	About half of prime-age men not in the labor force take pain medication
Dotsey et al. (2017)	1980-2017	Wage gap between high- and low-skilled workers and globalization decreased LFPR for low-skilled male workers, especially in manufacturing
Aquiar et al. (2022)	2004-2015	Improvements in video game technology raised value of leisure over work for young men
Ullrich (2021)	1976-2021	Aging population, illness, disability, addiction, declining manufacturing employment, and cultural factors like delayed marriage, incarceration, and video games contribute to declining male LFPR
Black et al. (2017)	2000-2016	Female LFPR declines driven by prime-age women, likely family responsibilities, lack of paid maternity leave, and unsupportive unemployment insurance programs

### 2.1.3. Regional Variations

While considerable research on LFPR focuses on the changes in different demographic groups such as age and gender at the national level, some papers discussed regional variations.

Stephens and Dekins (2018) examined the differences in labor market participations between rural and urban areas. The study pointed out that there tends to be larger disparities in labor force participation rates in more rural states like West Virginia, with participation rates much lower than the national average in rural areas.<sup>26</sup> The authors suggest that regional variation in labor force participation is the result of various factors including demographics, industrial makeup, and economic opportunity. For example, higher population and employment growth are more associated with higher labor force participation in urban areas but not rural areas. This is likely due to the difference in density in these areas. In addition, human capital (educational attainment, health, and disability) are all significant factors in explaining relatively lower LFPRs in rural areas. The study also found that conditions in one county can spill over into nearby counties, particularly in rural areas, contributing to lower LFPRs at a regional level and helping to explain why some areas such as those in Appalachia remain persistently economically depressed. The authors recommended policy approaches to increase participation rates that are tailored to different regions, such as direct employment programs in economically distressed areas and more education funding and community-building infrastructure in rural areas.

Research by Krueger (2017) on LFPR by demographic groups also offered explanations for regional variations. Krueger found that disability and opioid addiction contributed to the decline in LFPR for prime-age men. In addition, there are also large regional variations on disability rates among different regions, where disability due to workplace injury and physically demanding work is associated with greater demand for prescription opioid pain relievers. Specifically, the LFPR declined more in counties where relatively more opioid prescriptions were issued, causing a greater impact in rural areas.

<sup>26</sup> Heather M. Stephens, and John Deskins, "Economic Distress and Labor Market Participation," *American Journal of Agricultural Economics*, no. 5, (2018): 1336 - 1356.

With regard to the increasing wage gap between high- and low-skilled workers contributing to declining LFPRs for men, Dotsey, Fujita, and Rundanko (2017) also suggested increased globalization since the 1980s may also affect low-skilled male workers the most, as a large number of manufacturing jobs moved overseas, reducing labor demand.<sup>27</sup> This suggests areas with a higher concentration of employment in manufacturing, such as some rural areas of South Carolina, may have faced significant disruption in labor demand as manufacturing facilities closed.

The North American Free Trade Agreement (NAFTA) was enacted in 1994, creating a free trade zone for Mexico, Canada, and the United States and disrupting patterns of manufacturing imports and exports. An analysis by Scott (2011) of manufacturing jobs displaced following NAFTA estimated computer and electronic parts was the hardest-hit industry with 22% of jobs displaced, while 22,100 jobs (or 3.2%) were displaced in apparel and accessories manufacturing across the United States. For South Carolina, the author estimates 8,600 net jobs were displaced as of 2010, or 0.4% of total state employment. Compared with neighboring states, this is a little different than Georgia (0.4%) but lower than North Carolina (0.5%).

Chmura's analysis of manufacturing employment trends in South Carolina shows a steep decline in textile mills, textile product mills, and apparel manufacturing in the 1990s. While the industries were already declining in the early 1990s, the declines accelerated around 1994 and 1995, coinciding with the enactment of NAFTA. Notably, between 1990 and 2009, employment in textile mills fell from nearly 85,000 to just over 15,100, for a loss of nearly 70,000 jobs (or 82%). Workers in this industry, such as sewing machine operators and textile knitting and weaving machine setters, have limited transferrable skills which would enable them to find jobs in alternative industries,<sup>28</sup> and while employment in transportation equipment manufacturing grew over this time and has continued to grow, that growth has not been large enough to offset such steep losses. Studies have also found that male workers experiencing a mass-layoff event lose an average of 1.4 years of earnings in a period of relatively low unemployment (below 6%) but can lose an average of 2.8 years of earnings if displaced when unemployment is high (above 8%).<sup>29</sup> Employment losses concentrated in parts of South Carolina with a high concentration of employment in the textile industry could thus be expected to have an extended effect on LFPR in those counties.

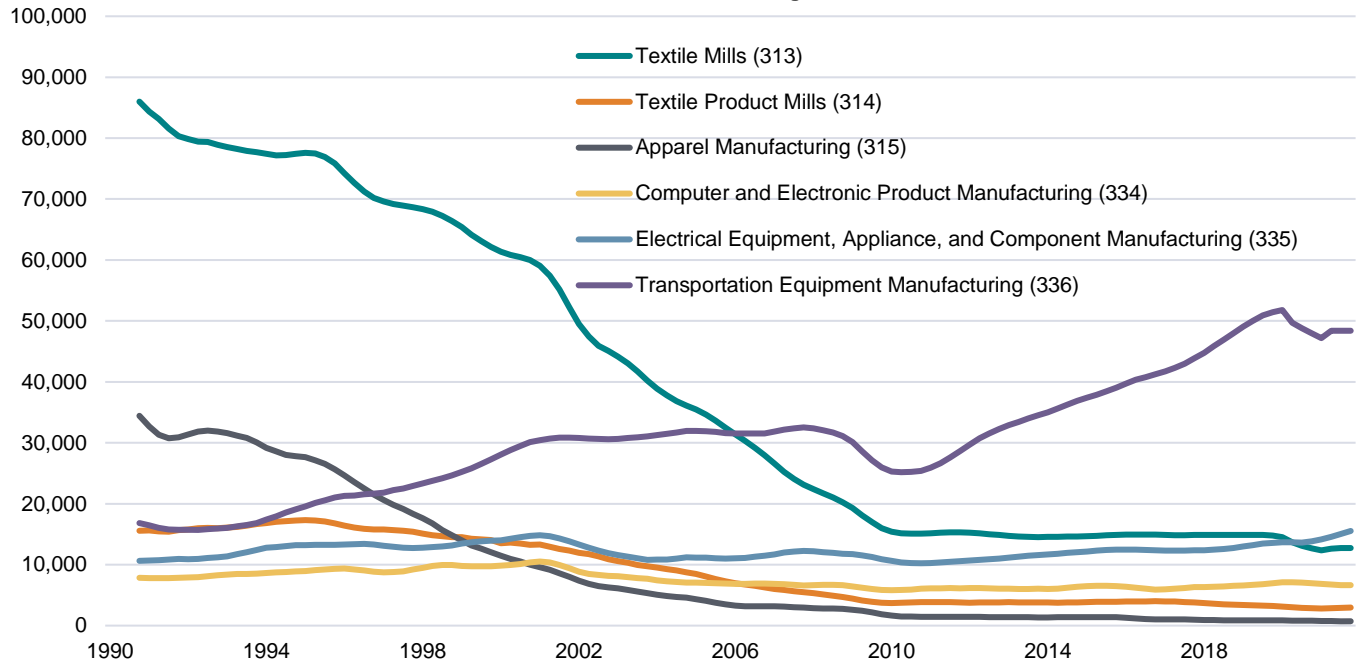
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<sup>27</sup> Michael Dotsey, Shigeru Fujita, and Leena Rudanko, "Where is Everybody? The Shrinking Labor Force Participation Rate," *Economic Insights*, Federal Reserve Bank of Philadelphia, Fourth Quarter, 2017.

<sup>28</sup> *Willing & Able*, JobsEQ® by Chmura, jobseq.eqsuite.com

<sup>29</sup> Davis, Steven and Till Von Wachter, "Recessions and the Costs of Job Loss" *Brookings Papers on Economic Activity*, Fall 2011.

Figure 2.11: Employment in South Carolina Textile and Apparel Manufacturing Experienced Large Losses from 1990 through 2010



Source: Bureau of Labor Statistics, Chmura

Key findings from the literature reviewed in this section are summarized in the table below.

	Time Period	Finding
	<b>Regional Variation</b>	
Stephens and Deskins (2018)	2000 and 2010	Demographics, industrial makeup, and economic opportunity impact county LFPR, as do educational attainment, health, and disability in rural areas
Dotsey et al. (2017)	1980-2017	Increased globalization affected low-skilled male workers the most as manufacturing jobs moved overseas
Krueger (2017)	1990-2017	LFPR declined more in counties with relatively more opioid prescriptions, causing a greater impact in rural areas

## 2.2. COVID-19 Impact on LFPR

The COVID-19 pandemic impacted every industry and state in the nation, including in South Carolina. This section focuses on the initial and continuing impacts from the pandemic on labor force participation.

The pandemic has had a disparate impact on participation rates by age. Certain groups are more at risk of death from COVID-19, particularly those with existing upper respiratory concerns and those ages 55 and older—those individuals might be more likely to retire. Quinby et al.

(2021) noted a decline in labor force participation in those age 55 and over during the pandemic, but they do not attribute the decline to retirements. The study found the likelihood of workers age 55 and older leaving work increased by 50% (or 7.6 percentage points), but the likelihood of retiring increased only 1 percentage point. Retirements were also mostly concentrated in those older than 70. The authors attributed the difference to a combination of an intention to reenter the labor market when it is safer to work and to postponing collecting Social Security retirement benefits due to other income sources such as stimulus checks and unemployment insurance. Workers between the age of 55 and the age at which they can collect full Social Security retirement benefits (66 or 67, depending on birth year) may thus be more likely to return to the labor force rather than retire.<sup>30</sup>

In contrast, participation among younger age groups increased over the pandemic, as research by Bauer et al. (2022) found young people ages 16 to 24 had the largest positive contribution to LFPR from 2016 through June 2022. The research suggested that lower labor force participation among older people and increased demand for labor has opened up opportunities for younger workers.<sup>31</sup> A working paper by Forsythe et al. (2022) similarly found that labor force exits and retirements from older workers have created more space for career progression.<sup>32</sup> The authors found evidence that as more opportunities have opened up in other careers, worker preferences have shifted during the pandemic to move away from low-skilled service and customer-facing jobs, contributing to a labor shortfall in these jobs.

Data on labor force participation by age in South Carolina show similar trends. Participation among workers age 65 and older decreased from 17.4% in 2019 to 14.2% in 2021 but has risen slightly to 15.7% so far in 2022. The LFPR for age 25 to 54 has stayed fairly flat but declined for ages 55 to 64 from 60.5% in 2019 to 58.9% in 2022. For ages 16 to 24, participation has risen from 51.9% in 2019 to 56.5% in 2022.

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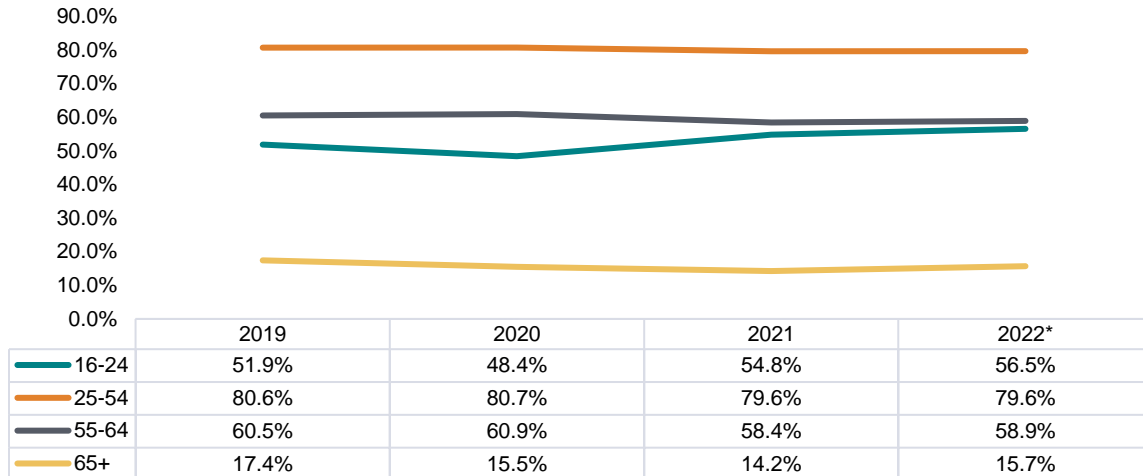
<sup>30</sup> Quinby, Laura, Matthew Rutledge, and Gal Wettsetein, “How Has COVID-19 Affected the Labor Force Participation of Older Workers?” *Center for Retirement Research at Boston College*, Oct. 2021

<sup>31</sup> Bauer, Lauren, Aidan Creeron, Wendy Edelberg, and Sara Estep. “Can a hot but smaller labor market keep making gains in participation?” Brookings, August 4, 2022. <https://www.brookings.edu/2022/08/03/can-a-hot-but-smaller-labor-market-keep-making-gains-in-participation/>

<sup>32</sup> Forsythe, Eliza, Lisa B. Kahn, Fabian Lange, and David G. Wiczer, “Where Have All the Workers Gone? Recalls, Retirements, and Reallocation in the COVID Recovery,” *NBER Working Paper Series*, Aug. 2022



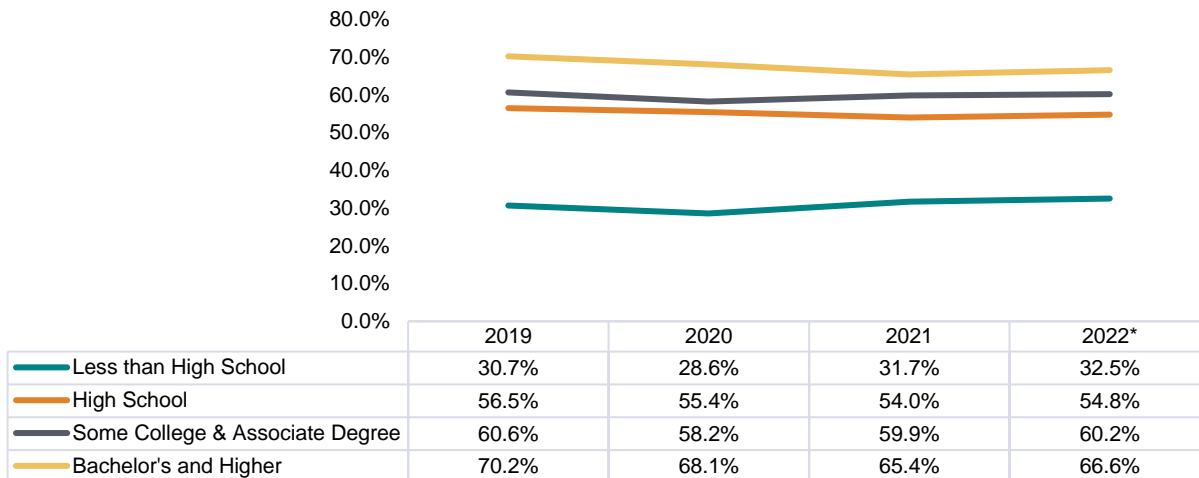
Figure 2.12: LFPR by Age, South Carolina



Source: Chmura's calculations from Bureau of Labor Statistics CPS microdata \*Note: 2022 data are through August

Individuals with lower educational attainment also experienced worse impacts from the pandemic. Research summarized by Daly et al. (2020) showed that in the early stages of the pandemic, the LFPR for people with a high school

Figure 2.13: LFPR by Education, South Carolina



Source: Chmura's calculations from Bureau of Labor Statistics CPS microdata \*Note: 2022 data are through August

education or less declined nearly 4 percentage points, compared with a 1.2 percentage point decline for people with a bachelor's degree or higher.<sup>33</sup> More recent research from the Congressional Research Service found that by July 2021, those with a high school diploma were the only group whose LFPR had recovered to pre-pandemic levels.<sup>34</sup> In South Carolina, data similarly show that by 2022, only those with less than a high school diploma or equivalent have returned to 2019 levels of labor force participation. The steepest decline has been for those with a bachelor's degree or higher—the LFPR has declined nearly four percentage points from 70.2% in 2019 to 66.6% in 2022.

<sup>33</sup> Daly, Mary, Shelby Buckman, and Lily Seitelman, "The Unequal Impact of COVID-19: Why Education Matters," *FRBSF Economic Letter*, Jun. 2020

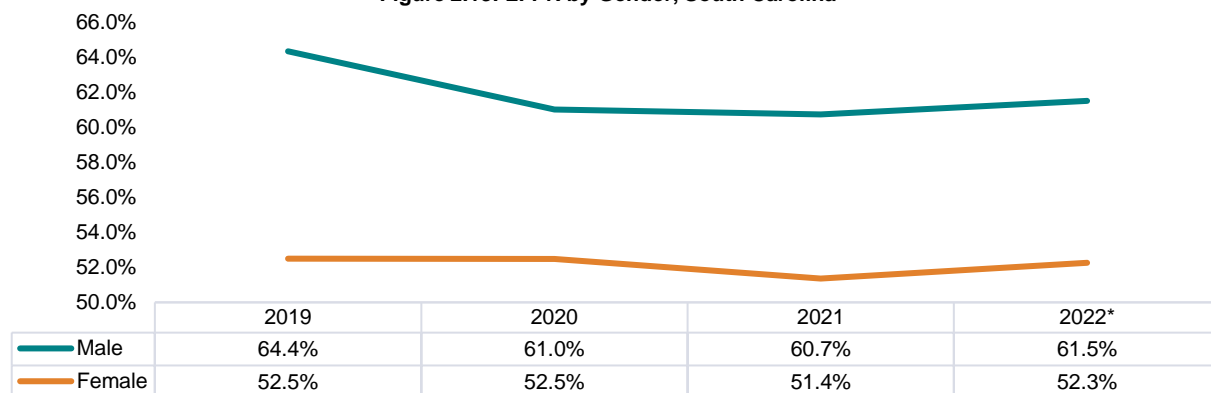
<sup>34</sup> Falk, Gene, Paul Romero, Issac Nicchitta, and Emma Nyhof, "Unemployment Rates During the COVID-19 Pandemic," Congressional Research Service, Aug 2021

Labor force participation has also diverged by gender over the pandemic. Research from Lim and Zebek (2021) showed female workers and particularly female Black and Hispanic workers faced greater job losses and continue to participate in the labor force at reduced levels compared to before the pandemic. Around one quarter of the additional labor force exits among Hispanic and Black women is associated with the presence of children in the household.<sup>35</sup>

Childcare in particular has been a focus of research into explanations of the decline in female labor force participation, but the research results are mixed. In a working paper, Furman et al. (2021) noted that employment for mothers with young children declined more than other adults, including fathers, but estimate that childcare challenges are not a key driver of the decline and slow employment recovery. Instead, the authors indicated that reduced labor force participation of working parents is driven by factors affecting all workers, such as concerns about contracting COVID-19 at work or the additional income from expanded unemployment insurance benefits.<sup>36</sup> In contrast, Montes et al. (2021) found a slight decrease in people using caregiving as a reason for not participating between the winter of 2020/2021 and spring 2021 as schools reopened for in-person learning. The authors estimated that caregiving concerns, including for those not caring for children, slowed the LFPR by 0.75 percentage points at the end of 2020 and by 0.4 percentage points for the beginning of 2021.<sup>37</sup> In the data for South Carolina, LFPR dropped more sharply for men, from 64.4% in 2019 to 61.0% in 2020, than for women (52.5% in both 2019 and 2020). As of August 2022, the LFPR for women remained at roughly the same level (52.3%), while participation for men has only partially recovered to 61.5%.

A few studies focus on changes in worker preferences over the pandemic. Forsythe et al. (2022) find evidence that worker preferences have shifted during the pandemic to move away from low-skilled service and customer-facing jobs, contributing to a labor shortfall in these jobs.<sup>38</sup> In a working paper, Faberman et al. (2022) used the Survey of Consumer Expectations (administered annually by the Federal Reserve Bank of New York) to look at desired work hours from 2013 to 2021. They found a decline in desired work hours during the pandemic through 2021 and suggested that the reduced preference for work hours accounts for virtually all of the difference between potential work hours and the labor force participation rate. The largest decline is for people who prefer to work infrequently and generally prefer to work part-time. This coincides with higher reservation wages, as people value non-working time more throughout the

Figure 2.13: LFPR by Gender, South Carolina



Source: Chmura's calculations from Bureau of Labor Statistics CPS microdata \*Note: 2022 data are through August

<sup>35</sup> Katherine Lim and Mike Zebek, "Women's Labor Force Exits During COVID-19: Differences by Motherhood, Race and Ethnicity," Finance and Economics Discussion Series 2021-067, Board of Governors of the Federal Reserve System, Accessed April 2022, <https://doi.org/10.17016/FEDS.2021.067>

<sup>36</sup> Furman, Jason, Melissa Schettini Kearny and Wilson Powell, "The Role of Childcare Challenges in the US Jobs Market Recovery During the COVID-19 Pandemic," National Bureau of Economic Research, Working Paper 28934 (Jun. 2021)

<sup>37</sup> Montes, Joshua, Christopher Smith, and Isabel Leigh, "Caregiving for Children and Parental Labor Force Participation During the Pandemic," FEDS Notes, Nov. 2021

<sup>38</sup> Forsythe, Eliza, Lisa B. Kahn, Fabian Lange, and David G. Wiczer, "Where Have All the Workers Gone? Recalls, Retirements, and Reallocation in the COVID Recovery," NBER Working Paper Series, Aug. 2022

pandemic and demand higher wages for work. The study also finds a lower number of desired work hours for people in jobs with a higher risk of potential exposure to COVID-19.<sup>39</sup>

Deaths and disability from COVID-19 also account for a substantial share of the decline in the labor force, particularly for older workers. Nationally, as of June 2022, the virus accounted for about 750,000 deaths among people ages 65 and older, and more than 250,000 pandemic-related deaths for those between age 18 and 64.<sup>40</sup> An even greater number are estimated to have persistent health problems known as Long COVID. Through January 2022, estimates of cases of Long COVID ranged from 22 million to more than 43 million cases, of which 7 to 14 million are expected to result in long-term disability. In South Carolina, an estimated 136,000 people (2.7% of the population) could have disabling Long COVID.<sup>41</sup>

Key findings from the literature reviewed in this section are summarized in the table below.

	Time Period	Finding
	COVID-19	
Quinby et al. (2021)	2019-2021	Workers between 55 and 70 who left the labor force during COVID likely to return when safer to work and after income sources such as stimulus checks and unemployment expire
Bauer et al. (2022)	2016-2022	Ages 16-24 had the largest positive contribution to LFPR over the pandemic COVID-19 virus accounts for more than 250,000 deaths for people ages 18 to 64
Forsythe et al. (2022)	2015-2019 and 2020-2022	Exits from older workers up the job ladder created more space for young workers to participate in the labor force Worker preferences shifted away from low-skilled and customer-facing jobs due to COVID
Daly et al. (2020)	2019-2020	LFPR for workers with a high school education or less -4 p.p. vs. -1.2 p.p. for bachelor's or higher
Falk et al. (2021)	2019-2021	By mid-2021, the only group at pre-pandemic levels was those with a high school diploma. Bachelor's degree or higher -3.6 p.p.
Lim et al. (2021)	2019-2021	Female Black and Hispanic workers had greater share of job losses and participation rates are still lower than pre-pandemic. In this group, about ¼ of additional labor force exits are in households with children.
Furman et al (2021)	2020-2021	Employment declines for mothers of young children driven by concerns about COVID-19 and additional income from unemployment insurance, not childcare challenges
Montes et al. (2021)	2020-2021	Caregiving concerns decreased LFPR -0.75 p.p. in 2020 and -0.4 p.p in early 2021
Faberman et al. (2022)	2013-2021	A decline in desired work hours during the pandemic contributes to LFPR declines over the pandemic
Dunne et al. (2022)	2020-2022	An estimated 2.7% of South Carolina's population could have disabling Long COVID

<sup>39</sup> Faberman, R. Jason, Andreas Mueller, and Ayşegül Şahin, "Has the Willingness to Work Fallen during the Covid Pandemic?" *NBER Working Paper Series*, No. 29784, Feb. 2022

<sup>40</sup> Bauer, Lauren, Aidan Creeron, Wendy Edelberg, and Sara Estep. "Can a hot but smaller labor market keep making gains in participation?" *Brookings*, August 4, 2022. <https://www.brookings.edu/2022/08/03/can-a-hot-but-smaller-labor-market-keep-making-gains-in-participation/>

<sup>41</sup> Dunne, Philippa, Melissa Smallwood, and Emily Taylor, "Long COVID Impact on Adult Americans: Early Indicators Estimating Prevalence and Cost," *Solve Long COVID Initiative*, Apr. 2022

### 3. Decomposition Analysis

Chmura performed a decomposition analysis to give the stakeholders in South Carolina a framework for policy and strategy design to improve their LFPR.<sup>42</sup> The purpose of this analysis is to understand the contribution to the changes in South Carolina's LFPR by different population groups. As the literature review in Section 2 shows, changes in LFPR in the nation can be attributed to many factors. While aging population is a major driver for declining labor force participation in the nation, there are also declines in LFPR within the group of prime-age population and young adults, which cannot be attributed to population shifts.

Following the methodology of Abraham and Kearny (2020),<sup>43</sup> this decomposition exercise provides insights into the decline in the South Carolina LFPR. That is, how much of the decline is due to the “real” decline in LFPR for each subgroup of the state's population, and how much of the decline is due to changes in the composition of various subgroups in the state's labor force. In order to perform the long-term decomposition analysis without the complicating factors of the COVID-19 pandemic, Chmura performed the decomposition analysis for two periods—from 1994 to 2019, and from 2019 to 2021. The year 1994 was chosen as a starting point because it is the year when LFPR of South Carolina and the United States started diverging (see Figure 1.1). Further, the decomposition analysis from 2019 to 2021 can shed light on the potential changes in LFPR during the COVID-19 pandemic. Chmura performed decomposition utilizing subgroups based on age and educational attainment. In addition, similar analysis were performed for the neighboring states of North Carolina and Georgia for comparison purposes.

In applying this model, the reader can think about the problem as two drivers of LFPR that are held constant while the other pieces of information are in continuous motion. The first driver is the composition of the population. For example, workers between the ages of 25 and 54 are more likely to be working or looking for work than younger adults, many of whom are still in school. The 25 through 54 cohort is also more likely to be working than older adults who are at or approaching retirement. If a large group, such as the baby boomer generation, ages without a similarly large group of younger adults in the next generation, then we can expect LFPR to decline because a greater share of the population is retiring.

The second driver of LFPR is from changes in participation within the groups themselves. This type of change occurred noticeably in women's labor force participation following World War II, when changing social norms and removal of barriers to female employment led a much greater share of women to enter the workforce.

We analyze these moving parts by “subgroups” across the observed populations, such as age, gender, and educational attainment. Some of these population subgroups have a relevant impact on LFPR, while others have little to no policy implications for improving LFPR. These two drivers may not account for the entire change in LFPR. The unexplained amount of change left over after analysis of these two drivers is attributed to interactions between the changes in participation in a subgroup and the subgroup population share.

As the literature review demonstrates, changes in LFPR in the nation can be attributed to many intrinsic factors in the population. Because we are interested in seeing the effects of population trends on subgroups' participation rates, we needed to compartmentalize those subgroups with negligible impacts due to composition differences from the other subgroups. For example, while the aging structure of the national population is a major driver in the nations' participation rate, specific declines within population subgroups are independent of drops in populations. Why does this matter? Accounting for changes outside of the realm of public policies such as composition of the population means stakeholders can more efficiently target policies and strategies to improve labor participation rates to the other factors affecting nonparticipants.

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<sup>42</sup> The main source of historical data came from the U.S. Census Bureau's Current Population Survey (CPS).

<sup>43</sup> Katherine Abraham and Melissa Kearney, Explaining the Decline in the US Employment-to-Population Ratio: A Review of the Evidence, *Journal of Economic Literature* 2020, 58(3), 585-643.

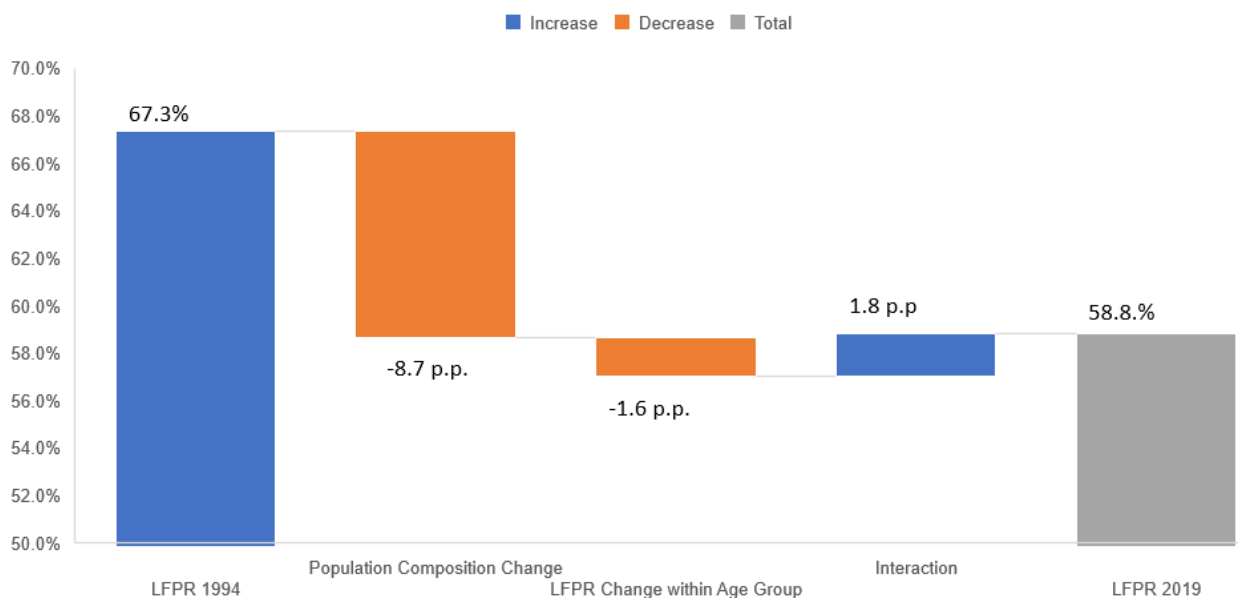
For South Carolina, stakeholders need to understand how much of the decline in LFPR is due to the “real” rates for each subgroup (state population) and how much is due to the changing composition among the subgroups across the state. For the dimensional comparison part, Chmura looked at the overall workforce and its male and female cohorts. Against these groups, Chmura chose age and educational attainment as the moving parts to allocate toward state population trends.

### What We Learned

The statewide LFPR declined from 67.3% in 1994 to 58.8% in 2019. To provide more context on how to think about a decomposition analysis, the chart below shows a high-level view of the decomposition of LFPR from an age perspective. The 8.5 percentage point drop (67.3% minus 58.8%) in LFPR from 1994 to 2019 can be decomposed into the composition of the population over that period and the participation within group. The changing composition of the age groups of the population reduced the participation rate by 8.7 percentage points. Over the same period, changes in participation within age groups reduced the participation rate by 1.6 percentage points. Finally, the interaction between population composition and participation within age groups increased the participation rate by 1.8 percentage points. Thus, the 8.5 p.p. change from 1994 through 2019 is mathematically represented as  $-8.7 + (-1.6) + 1.5$ .

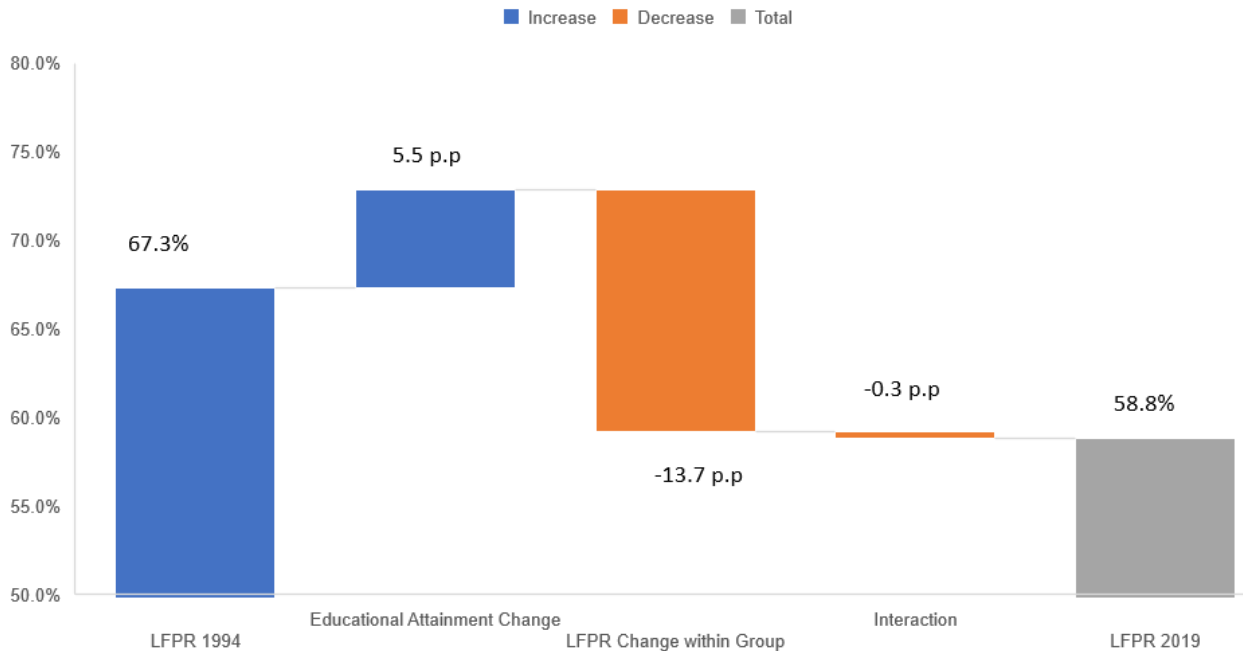
As discussed in the body of this study, a decomposition of the LFPR between 1994 and 2019 by age shows that most of the **decline is attributable to an aging population**. Changes in the population share of different age groups contributed 8.7 percentage points of decline to the state’s LFPR. Over this period, the share of population 65 years of age and over increased from 11.9% to 23.3%, and the share of population between 55 and 65 also increased. Assuming each group’s LFPR stayed at its 1994 levels, changes in population share accounted for more than 100% of the decline in the state LFPR (8.7 p.p., larger than 8.5 p.p. overall decline). In another words, if population shift is the only factor affecting LFPR, the state LFPR would be 58.6% in 2021, lower than the actual 2021 rate of 58.8%. Among all age groups, the increasing share of population 65 and older contributed most to the decline in state LFPR, at 72.8%. The positive news is that the decline in LFPR due to population share was partially offset by increasing participation of older workers 55 to 64, particularly women. An increasing population of men ages 16 to 24 also offset some of the LFPR decline.

**Figure 3.1: South Carolina's Labor Force Participation Rate (LFPR) by Population Age Groups Between 1994 and 2019**



By educational attainment, the decomposition analysis shows that increased educational attainment from 1994 to 2019 helped offset the state’s decline in LFPR due to population composition changes (see the chart below). For example, if the state’s overall educational attainment did not improve from 1994, the state’s LFPR would be 53.7% in 2019, much lower than the actual 58.8%. It is concerning, however, that within-group LFPR declined for all educational groups, meaning a smaller share of people in South Carolina are participating in the labor force at all levels of education now compared with the 1990s.

**Figure 3.2: South Carolina's Labor Force Participation Rate (LFPR) by Education Attainment Between 1994 and 2019**



Chmura compared decomposition results of South Carolina with neighboring states of North Carolina and Georgia between 1994 and 2019. While both North Carolina and Georgia also experienced declines in LFPR over the years, the degrees of decline were smaller than in South Carolina. The comparisons show that while an increase in the retirement age population (65+) also played a significant role in the declining LFPR in those two states, its effect in South Carolina is much more pronounced. In other words, South Carolina was affected by an aging population more than the other two states. This may be due to the fact that South Carolina attracts a higher percentage of retirees. It can also be that the state is less attractive to younger populations, especially young immigrant populations. Further research is needed to understand why South Carolina’s population has been aging faster than North Carolina’s and Georgia’s.

### 3.1. Decomposition from 1994 to 2019

The remainder of this section provides more detailed tables on the outcomes of the decomposition for the overall workforce, as well as for the male and female workforce following Abraham and Kearny (2020). While there are

multiple dimensions of evaluating changes in LFPR, Chmura chose to use age and educational attainment as two prominent dimensions to allocate state population in different groups.<sup>44</sup>

### 3.1.1. Changes in LFPR and Population Share

To perform the decomposition analysis, the first step is to compute the labor force participation rates for individual age or educational groups, as well the share of each group in the overall population.<sup>45</sup> These were computed for both 1994 and 2019 to facilitate the analysis as to whether the change in state LFPR is due to changes in population share (between group changes) or changes in LFPR in each subgroup (within-group changes).

The South Carolina data presented in Table 3.1 shows that labor force participation rates vary by age groups and educational attainment, and that there were significant changes over the 25 years from 1994 to 2019.<sup>46</sup> Overall, statewide LFPR declined from 67.3% in 1994 to 58.8% in 2019, a decrease of 8.5 percentage points.<sup>47</sup>

It is not surprising that LFPR is the highest for the prime-age group (between 25 and 54), as this population has typically finished obtaining education and is not yet approaching retirement. LFPR declined significantly for older workers aged between 55 to 64 and older than 65. In terms of educational attainment, for both 1994 and 2019, LFPR increased as individuals acquired more education. In 1994, for example, LFPR for individuals with bachelor’s and higher degree was 83.8%, while LFPR for those without a high school diploma was only 44.3%.

	Labor Force Participation Rate			Population Share		
	1994	2019	Change 1994-2019	1994	2019	Change 1994-2019
<b>By Age Group</b>						
Age 16-24	63.4%	51.9%	-0.115	17.5%	12.9%	-0.045
Age 25-54	83.1%	80.6%	-0.024	58.8%	47.2%	-0.116
Age 55-64	49.8%	60.5%	0.106	11.8%	16.6%	0.048
Age 65+	12.9%	17.4%	0.045	11.9%	23.3%	0.114
<b>By Educational Attainment</b>						
Less than High School	44.4%	33.4%	-0.110	26.1%	12.9%	-0.131
High School	71.5%	56.5%	-0.150	35.5%	29.3%	-0.062
Some College & Associate Degree	75.5%	60.7%	-0.148	21.8%	27.1%	0.053
Bachelor’s Degree and Higher	83.8%	70.2%	-0.136	16.5%	30.7%	0.141
<b>TOTAL</b>	<b>67.3%</b>	<b>58.8%</b>	<b>-0.085</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.000</b>

Source: Chmura Computation Based on CPS Data

There are some notable changes in South Carolina’s LFPR from 1994 to 2020. For LFPR in each age group, while it declined 11.5 p.p. for the younger population (age between 16 and 24); and 2.4 p.p. for prime-age population, LFPR increased for those between 55 and 65 (an increase of 10.6 p.p.) and those over 65 years old (an increase of 4.5

<sup>44</sup> Other dimensions can be disability status, marriage status, and number of children at home. Those were not used in decomposition analysis to avoid it being too complicated.

<sup>45</sup> In this analysis, the population is defined as adults (16 and above) and civilian population. This is consistent with the official definition of the labor force participation rate.

<sup>46</sup> Same data for male and female population are presented in Appendix 1.

<sup>47</sup> Please note that this is the LFPR computed by Chmura using data from Census Current Population Survey. It may not match LFPR published by the Bureau of Labor Statistics.

p.p). It is also evident that the population in South Carolina is older than the nation.<sup>48</sup> From 1994 to 2019, the share of population over 65 years of age increased from 11.9% to 23.3%, and the share of population between 55 and 65 also increased. The population shares of those below 55 decreased.

In terms of educational attainment, LFPR decreased for all educational groups from 1994 to 2019, with declines ranging from 11.0 p.p. for those without a high school diploma to 15.0 p.p for high school graduates. There were also significant changes in the overall educational attainment of the state population, with noticeable increases in the population with bachelor's and higher degrees, and those with some college, including associates degree. For example, adult population with bachelor's and higher degrees rose from 16.5% in 1994 to 30.7% in 2019, an increase of 14.1 percentage points. Improving educational attainment may have a positive effect on overall LFPR in the state.

### 3.1.2. Decomposition Results by Age Group

Table 3.2 present the results from the decomposition analysis based on age group. The decomposition results separate the contributions to the change in state LFPR into three categories.<sup>49</sup> Please note that since overall LFPR in the state declined, a positive percentage in this table means this factor reduces the state LFPR.

For the within group change (top panel), Chmura held the population share constant at the 1994 level. As a result, the changes in LFPR in this panel are caused by LFPR changes within each age group, as if the mix of ages of workers had remained constant. The analysis indicates that changes in LFPR in each population group contributed 19.4% of the decline in overall state LFPR (top panel, first column). This is a small percentage, suggesting that the majority of changes are not caused by changes in each age group, but by changes in population share. Not every group saw LFPR decline from 1994 to 2019. It is worth noting that LFPR for both young and prime-age workers declined, contributing to 23.7% and 16.7% of the overall decline in the state's LFPR. The increasing LFPR for older workers (age 55 and over) offset, however, to some degree, those decline.

The second panel estimates the contributions of population share changes. It was computed by assuming each group's LFPR stays at its 1994 levels. The analysis shows that changes in population share accounted for more than 100% of the decline in the state LFPR. In another words, if population shift is the only factor affecting LFPR, the state LFPR would be 58.6% in 2021, lower than the actual 2021 value of 58.8%.

<sup>48</sup> According to the American Community Survey 2016-2020, the median age of the population in South Carolina is 39.7 compared with 38.2 in the nation.

<sup>49</sup> Please see Abraham and Kearney (2020) for a detailed formula of decomposition.



Among all age groups, the increasing share of population 65 and older contributed the most to decline in state LFPR, at 72.8%. Decline in shares of prime-age population contributed to 21.6% of the LFPR decline. Since this group typically has the highest LFPR of all age groups, its declining share reduces the overall state LFPR.

The interaction panel captures the impact of changes in both within-group LFPR and population share. Taking age group “Age 65 and over” as an example, the within-group increase in LFPR alone contributed to an increase in overall LFPR (-6.4%). In addition, since this group has the lowest LFPR among all age groups, the increasing population share, even if the LFPR does not change from the 1994 value, had a negative effect on overall LFPR (72.8%). Finally, the increase in population share for this group, combined with the increase in LFPR, provided an additional boost to LFPR (-6.0%).

In summary, based on the decomposition analysis of the overall state LFPR change from 1994 to 2019, the largest contributor to the decline is the increased share of the population that is over 65 years old, which accounted for 72.8% of LFPR decline. The second largest factor is the decline in young workers’ LFPR, contributing to 23.7% of the LFPR decline. The next two factors are related to the prime-age population. Since this group typically has the highest LFPR, its declining share contributed to 21.6% of the overall decline in LFPR. In addition, the decline of LFPR for this particular group accounted for 16.7% of the overall decline in LFPR. Those results are consistent with literature review findings that the population shift, especially the aging population, is the main driver for overall declines in labor force participation.

Comparing the decomposition results for the male and female population, it can be concluded that the increase in population share of those over 65 made similar contributions to the decline in both male and female participation (72.3% and 72.4%). There are some differences for other age groups. It appears the decline in LFPR for young male workers (age 16 to 24) contributed more to the LFPR decline (24.9%) than female workers did in this group (21.9%). In addition, the increase in LFPR for the 55 to 64 age group made a larger positive impact (-22.5%) on female LFPR change than male LFPR (-7.5%).

**Table 3.2: Shares of LFPR Changes Attributable to Within-Group LFPR Changes and Changes in Population Composition 1994-2019**

	South Carolina		North Carolina		Georgia
	Overall	Male	Female	Overall	Overall
<b>Contribution of Within-Group Change</b>					
Age 16-24	23.7%	24.9%	21.9%	34.1%	25.8%
Age 25-54	16.7%	16.5%	17.6%	25.1%	22.0%
Age 55-64	-14.7%	-7.5%	-22.5%	-12.9%	-8.9%
Age 65+	-6.4%	-5.6%	-5.6%	-10.1%	-6.6%
<b>Total Within-Group</b>	<b>19.4%</b>	<b>28.3%</b>	<b>11.4%</b>	<b>36.2%</b>	<b>32.3%</b>
<b>Contribution of Population Share Change</b>					
Age 16-24	-2.1%	-5.6%	0.1%	-0.1%	-3.1%
Age 25-54	21.6%	18.4%	25.1%	20.1%	19.4%
Age 55-64	9.9%	7.7%	11.8%	9.1%	8.5%
Age 65+	72.8%	72.3%	72.4%	54.2%	58.8%
<b>Total Population Share</b>	<b>102.2%</b>	<b>92.8%</b>	<b>109.4%</b>	<b>83.2%</b>	<b>83.6%</b>
<b>Contribution of Interactions</b>					
Age 16-24	-6.2%	-7.6%	-4.6%	-6.1%	-4.4%
Age 25-54	-3.3%	-3.2%	-3.5%	-3.7%	-3.3%
Age 55-64	-6.0%	-3.5%	-8.3%	-4.9%	-4.0%
Age 65+	-6.0%	-6.8%	-4.4%	-4.8%	-4.2%
<b>Total Interactions</b>	<b>-21.5%</b>	<b>-21.1%</b>	<b>-20.8%</b>	<b>-19.5%</b>	<b>-15.9%</b>
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: Chmura Computation Based on CPS Data

Chmura also compared decomposition results of South Carolina with the neighboring states of North Carolina and Georgia.<sup>50</sup> While both North Carolina and Georgia also experienced declines in LFPR over the years, the degrees of decline were smaller than in South Carolina. The comparisons show that while an increase in the retirement age population (65+) also played a significant role in the declining LFPR in those two states, its effect in South Carolina is much more pronounced. In other words, South Carolina was affected by an aging population more than the other two states. This may be due to the fact that South Carolina attracts a higher percentage of retirees. It can also be that the state is less attractive to younger populations, especially young immigrant populations. Further research is needed to understand why South Carolina’s population has been aging faster than North Carolina’s and Georgia’s.

### 3.1.3. Decomposition Results by Educational Attainment

Table 3.3 present the results from a decomposition analysis based on educational attainment.

The overall decomposition analysis indicates that within-group changes drive the results. LFPR for all educational levels declined from 1994 to 2019, which can explain more than 100% of the LFPR decline in South Carolina. In another words, if the state’s overall educational attainment did not change from 1994, state LFPR would be 53.7% in 2019, much lower than the actual 58.8% LFPR. However, the improvement in educational attainment, as more workers receive college degrees and higher, partially offset those declines in LFPR in each group.

From the educational perspective, the largest contributor of decline in the overall state LFPR is the decreased

LFPR for high school graduates, which accounted for 62.7% of LFPR decline. The second largest factor is the decline in LFPR for those with some college and associate degrees, contributing to 38.2% of the LFPR decline. The third largest factor is the decline in LFPR for those without a high school diploma or equivalent. On the other hand, the increased population share with a bachelor’s degree or higher, as well as a declining share of population without a high school diploma, helped increase the LFPR.

**Table 3.3: Shares of LFPR Changes Attributable to Within-Group LFPR Changes and Changes in Population Composition 1994-2019**

	South Carolina			North Carolina	Georgia
	Overall	Male	Female	Overall	Overall
<b>Contribution of Within-Group Change</b>					
Less than High School	33.8%	33.9%	37.6%	21.7%	26.8%
High School	62.7%	51.7%	83.5%	73.3%	52.1%
Some College & Associate Degree	38.2%	27.7%	48.5%	45.3%	43.0%
Bachelor’s Degree and Higher	26.4%	29.3%	21.0%	17.0%	31.9%
<b>Total Within-Group</b>	<b>161.1%</b>	<b>142.6%</b>	<b>190.6%</b>	<b>157.3%</b>	<b>153.9%</b>
<b>Contribution of Population Share Change</b>					
Less than High School	-35.4%	-26.9%	-46.0%	-32.7%	-35.3%
High School	3.0%	1.5%	4.8%	2.9%	0.4%
Some College & Associate Degree	-5.1%	-2.0%	-9.9%	-3.1%	-1.3%
Bachelor’s Degree and Higher	-27.3%	-18.5%	-35.6%	-20.7%	-23.2%
<b>Total Population Share</b>	<b>-64.8%</b>	<b>-46.0%</b>	<b>-86.7%</b>	<b>-53.6%</b>	<b>-59.4%</b>
<b>Contribution of Interactions</b>					
Less than High School	-17.0%	-15.7%	-20.3%	-9.3%	-11.6%
High School	-11.0%	-4.5%	-20.7%	-11.2%	-2.1%
Some College & Associate Degree	9.2%	4.6%	14.7%	5.3%	2.1%
Bachelor’s Degree and Higher	22.5%	19.0%	22.5%	11.5%	17.1%
<b>Total Interactions</b>	<b>3.7%</b>	<b>3.4%</b>	<b>-3.8%</b>	<b>-3.7%</b>	<b>5.5%</b>
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: Chmura Computation Based on CPS Data

<sup>50</sup> Appendices 2 and 3 contain data for North Carolina and Georgia.

Comparing the decomposition results for the male and female population, data show that improving educational attainment for female workers played a larger role in increasing the LFPR, but the declining LFPR for each individual group is still the dominating factor in driving the decline in female LFPR. For the male population, while overall educational attainment is improving—which can increase LFPR—the improving educational attainment plays a relatively smaller role in increasing male LFPR.

Chmura also compared decomposition results of South Carolina with North Carolina and Georgia, based on educational attainment. The results for the three states are similar. It can be concluded that educational attainment changes play a similar role in influencing the LFPR in all three states.

### 3.2. Recent Changes during COVID-19 Pandemic

With the COVID-19 pandemic starting in the first quarter of 2020 and continuing today, it has impacted the labor markets significantly, including the labor force participation rates across the country. Since the drivers for decline during the pandemic may be different from the long-term decline in LFPR, Chmura performed a decomposition analysis for changes in LFPR from 2019 to 2021 for South Carolina and its neighboring states.

#### 3.2.1. Changes in LFPR and Population Share

Table 3.4 shows that labor force participation rates vary by age groups and educational attainment for 2019 and 2021.<sup>51</sup> Overall, statewide LFPR declined from 58.5% in 2019 to 56.6% in 2021, a decline of 2.2 p.p. As the literature review in Section 2 indicates, possible reasons for such a decline include fear of infections, difficulty arranging child-care or elder-care, and generous government pandemic financial assistance.

	Labor Force Participation Rate			Population Share		
	2019	2021	Change 2019-2021	2019	2021	Change 2019-2021
<b>By Age Group</b>						
Age 16-24	51.9%	54.8%	0.030	12.9%	13.5%	0.006
Age 25-54	80.6%	79.6%	-0.010	47.2%	46.0%	-0.012
Age 55-64	60.5%	58.4%	-0.020	16.6%	15.6%	-0.010
Age 65+	17.4%	14.2%	-0.032	23.3%	24.9%	0.016
<b>By Educational Attainment</b>						
Less than High School	33.4%	35.3%	0.018	12.9%	12.3%	-0.007
High School	56.5%	54.0%	-0.025	29.3%	31.7%	0.024
Some College & Associate Degree	60.7%	59.9%	-0.008	27.1%	25.9%	-0.011
Bachelor's Degree and Higher	70.2%	65.4%	-0.048	30.7%	30.1%	-0.006
<b>TOTAL</b>	<b>58.8%</b>	<b>56.6%</b>	<b>-0.022</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.000</b>

Source: Chmura Computation Based on CPS Data

Comparing 2019 and 2021, data in Table 3.4 show that the LFPR for most age groups declined, with the exception of younger workers between the ages of 16 and 24. LFPR for that group increased by 0.3 percentage points. The declines in older age groups were more severe. For example, LFPR declined by 3.2 p.p for the population over 65 years old, and 2.0 p.p for the population between 55 and 64 years old. For population share, from 2019 to 2021, the share of population over 65 and those between 16 and 24 increased, while population shares of the other two groups (primed-age and those between 55 and 64) declined.

<sup>51</sup> Same data for male and female population are presented in Appendix 1.

In terms of educational attainment, from 2019 to 2021, LFPR decreased for all groups, except for those without a high school diploma, whose LFPR rose 1.8 percentage points. The population group with bachelor’s degree and higher suffered the largest degree of decline of 4.8 percentage points. There were also some changes in the overall educational attainment of the state population, with a noticeable increase in the population with a high school diploma.

### 3.2.2. Decomposition Results by Age Group

Table 3.5 presents the results from a decomposition analysis for South Carolina, North Carolina, and Georgia LFPR changes from 2019 to 2021 based on age group. For the within-group change (top panel), Chmura held the population share constant at the 2019 level. The analysis indicates that changes in LFPR in each group contributed to 54.0% of the decline in overall state LFPR in the past two years.

An increase in LFPR for younger workers improved the overall LFPR, but LFPR declines in all other age groups brought down the state LFPR.

For impact from the population share changes, Chmura held LFPR for each group at its 2019 level. The analysis shows that changes in population share accounted for 46.0% of the decline in the state LFPR. It appears that population aging still continues. The increasing share of population 65 and older contributed most to the decline in state LFPR, at 31.1%. A decline in prime-age population contributed to 12.2% of the overall LFPR decline.

The interactions of within-group and population shares only impact LFPR marginally.

Overall, it appears both population share changes and within-group changes contributed roughly equally to the LFPR decline during the pandemic. Specifically, the largest contributor to the decline in state LFPR during the pandemic is the within-group decline in LFPR for population 65 years old and over, which accounted for 33.7% of the LFPR decline. The second largest factor is the increased share of population that is over 65 years old, contributing to 31.1% of the LFPR decline. The next largest factor is the decline in LFPR in prime-age population, contributing to 22.4% of decline.

**Table 3.5: Shares of LFPR Changes Attributable to Within-Group LFPR Changes and Changes in Population Composition 2019-2021**

	South Carolina			North Carolina	Georgia
	Overall	Male	Female	Overall	Overall
<b>Contribution of Within-Group Change</b>					
Age 16-24	-17.6%	-10.2%	-37.6%	-3.4%	30.3%
Age 25-54	22.4%	32.2%	2.7%	43.7%	1.1%
Age 55-64	15.4%	27.1%	-14.9%	13.2%	-39.6%
Age 65+	33.7%	34.5%	29.1%	-8.0%	56.5%
<b>Total Within-Group</b>	<b>54.0%</b>	<b>83.6%</b>	<b>-20.7%</b>	<b>45.5%</b>	<b>48.3%</b>
<b>Contribution of Population Share Change</b>					
Age 16-24	1.9%	1.7%	1.6%	1.3%	7.6%
Age 25-54	12.2%	3.6%	34.2%	18.2%	25.6%
Age 55-64	0.8%	0.4%	1.7%	0.1%	0.0%
Age 65+	31.1%	11.4%	81.6%	37.6%	17.0%
<b>Total Population Share</b>	<b>46.0%</b>	<b>17.1%</b>	<b>119.1%</b>	<b>57.1%</b>	<b>50.1%</b>
<b>Contribution of Interactions</b>					
Age 16-24	-0.8%	-0.4%	-2.2%	-0.1%	1.2%
Age 25-54	-0.6%	-0.4%	-0.1%	-1.6%	0.0%
Age 55-64	-0.9%	-1.4%	1.1%	-0.2%	-0.5%
Age 65+	2.4%	1.4%	2.8%	-0.7%	0.9%
<b>Total Interactions</b>	<b>0.0%</b>	<b>-0.7%</b>	<b>1.5%</b>	<b>-2.6%</b>	<b>1.6%</b>
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: Chmura Computation Based on CPS Data

Comparing the decomposition results for male and female populations, it seems the changes in population share are a much more dominant factor in driving down female LFPR in South Carolina from 2019 to 2021. The large increase in female population over 65, and large decrease in prime-age female population drove the changes. On the other hand, changes in male population shares are modest, and only accounted for a total of 17.1% of the decline in male LFPR. Another difference is that for women between the age of 55 and 64, LFPR during the pandemic increased, which had a positive effect on the female LFPR in South Carolina.

**Table 3.6: Shares of LFPR Changes Attributable to Within-Group LFPR Changes and Changes in Population Composition 2019-2021**

	South Carolina			North Carolina	Georgia
	Overall	Male	Female	Overall	Overall
<b>Contribution of Within Group Change</b>					
Less than High School	-10.9%	3.9%	-47.5%	13.2%	-3.9%
High School	33.8%	26.9%	53.6%	33.9%	100.2%
Some College & Associate Degree	9.9%	8.1%	6.0%	50.3%	64.5%
Bachelor's Degree and Higher	67.1%	60.4%	86.0%	18.5%	-7.7%
<b>Total Within-Group</b>	<b>99.9%</b>	<b>99.4%</b>	<b>98.1%</b>	<b>115.9%</b>	<b>153.0%</b>
<b>Contribution of Population Share Change</b>					
Less than High School	-8.0%	-2.7%	-23.8%	-14.5%	-36.9%
High School	2.6%	0.0%	10.4%	4.4%	0.1%
Some College & Associate Degree	1.0%	1.5%	0.8%	1.2%	-0.2%
Bachelor's Degree and Higher	2.9%	1.0%	8.5%	-5.9%	-16.3%
<b>Total Population Share</b>	<b>-1.6%</b>	<b>-0.2%</b>	<b>-4.0%</b>	<b>-14.8%</b>	<b>-53.3%</b>
<b>Contribution of Interactions</b>					
Less than High School	0.6%	-0.1%	3.9%	-1.3%	0.3%
High School	2.8%	2.3%	4.1%	2.4%	0.1%
Some College & Associate Degree	-0.4%	-0.6%	-0.1%	-2.7%	0.1%
Bachelor's Degree and Higher	-1.2%	-0.8%	-2.0%	0.6%	-0.3%
<b>Total Interactions</b>	<b>1.7%</b>	<b>0.8%</b>	<b>5.9%</b>	<b>-1.1%</b>	<b>0.3%</b>
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: Chmura Computation Based on CPS Data

Chmura also compared decomposition results of South Carolina with neighboring North Carolina and Georgia.<sup>52</sup> Overall, the results are similar between the states. About half of the changes in LFPR in the neighboring states during the pandemic can be attributed to changes in population shares, and about half can be attributed to within-group changes. There are some differences, though. For example, the LFPR for the population 65 and older increased for North Carolina, which was opposite to South Carolina and Georgia. On the other hand, for Georgia, the LFPR for the population age 55 to 64 increased, which had a positive effect on the statewide LFPR. Also in Georgia, the decline in prime-age population played a larger role than rising 65 and over population in driving down LFPR during the pandemic. In South Carolina and North Carolina, the rising share of the 65 and over population played a more prominent role in driving down LFPR.

### 3.2.3. Decomposition Results by Educational Attainment

Table 3.6 presents the results from a decomposition analysis based on educational attainment from 2019 to 2021. The overall decomposition analysis indicates that since educational attainment for the state population changed little during the pandemic, education did not substantially contribute to the decline in LFPR during the pandemic. Almost all of the decline is the result of within-group changes in LFPR. Specifically, the decline in LFPR for those with a bachelor's degree or higher was the largest contributor, accounting for 67.1% of the decline in state LFPR. In addition,

<sup>52</sup> Appendices 2 and 3 contain data for North Carolina and Georgia.

the decline of LFPR for high school graduates contributed to 33.8% of the overall decline. LFPR for the population with less than a high school education increased during the pandemic.

Comparing the decomposition results for the male and female population, the overall findings are similar in that almost all changes are due to within-group changes. In addition, changes in LFPR in the population with a bachelor's degree or higher played the largest role in declining LFPRs for both the male and female population, followed by the decline of LFPR for high school graduates.

Some differences exist when comparing South Carolina results with those from North Carolina and Georgia. For example, LFPR for North Carolina's population with a bachelor's degree or higher did not decline as much as South Carolina, and that for Georgia actually increased. As a result, the main drivers for LFPR decline in those two states are from the within-group declines in LFPR for those with some college and associate degrees, and high school graduates.

### 3.3. Implications

As mentioned previously, the limitations of decomposition analysis are that while it sheds light on what type of changes contributed to the variations in LFPR, it does not identify what caused those changes. For example, in South Carolina, the decomposition analysis indicates population aging is the driving factor for the decline in LFPR from 1994 to 2019, reflected by the rising share in those over 65 years old, and declining share of prime-age population. But further research is needed to understand why the aging process in South Carolina is faster than in neighboring North Carolina and Georgia. In addition, declines in youth labor force participation are an important factor driving down overall LFPR, and further research is needed to understand the barriers to youth labor force participation.

In terms of educational attainment, while it is positive that the improving educational attainment has boosted overall state LFPR from 1994 to 2019, it is concerning that within-group LFPR declined across the board for all educational groups. It is likely that those within-group declines are driven by different factors for college graduates as opposed to high school graduates. Additional analysis beyond decomposition will help to answer those questions.

During the COVID-19 pandemic, it is likely that changes in both population share and within-group LFPR for different age groups brought down South Carolina LFPR. Once again, further research is needed to understand the barriers to youth labor force participation. Decomposition analyses, however, helps identify which population group should be the focus of additional research, and which policy instruments can be effective in improving LFPR in the state.



there is an 8.4 percentage point difference between LFPR in rural areas compared with urban areas, with rural areas having lower participation. The largest percentage point difference in LFPR between rural and urban areas is for men, with a LFPR of 71.8% in rural and 82.2% in urban areas of South Carolina (a difference of 10.3 p.p.). The next largest differences are for the Black or African American population (10.0 p.p. lower in rural areas), people with a disability (9.8 p.p.), the Hispanic population (9.3 p.p.), and those with less than a high school diploma or equivalent (9.2 p.p.). These differences suggest policies in rural areas should be targeted at why these populations (male, black, with a disability, Hispanic, and/or with less than a high school diploma) are not participating. Urban areas also represent a much larger share of the population not in the labor force (NILF) than rural areas, at almost 1.24 million and nearly 393,400, respectively. Strategies to raise participation in more urban areas may be able to reach a larger number of people to help raise the statewide participation rate.

**Table 4.1: Male, Black, With a Disability, Hispanic, and Less than High School Account For Largest Differences in Rural and Urban LFPRs**

	Rural		Urban		Difference (p.p.)
	LFPR	NILF	LFPR	NILF	
Male	71.8%	80,540	82.2%	203,966	10.3
Black or African American alone	53.9%	144,952	63.9%	270,357	10.0
With any disability	31.5%	60,340	41.3%	159,014	9.8
Hispanic or Latino origin (of any race)	62.0%	11,068	71.3%	49,233	9.3
Less than high school graduate	47.4%	40,069	56.5%	88,690	9.2
45 to 54 years	71.6%	37,916	80.7%	98,812	9.0
<b>Population 16 years and over</b>	<b>53.8%</b>	<b>393,354</b>	<b>62.2%</b>	<b>1,233,880</b>	<b>8.4</b>
55 to 59 years	62.3%	28,309	70.4%	78,766	8.1
White alone	53.3%	235,398	61.1%	895,866	7.8
60 to 64 years	46.1%	41,827	53.3%	121,784	7.2
35 to 44 years	76.1%	27,980	83.0%	84,721	7.0
16 to 19 years	34.8%	34,607	41.2%	126,644	6.4
High school graduate (includes equivalency)	66.1%	64,366	71.9%	152,418	5.8
Female	67.2%	98,395	72.7%	330,761	5.5
Below poverty level	43.7%	58,163	49.0%	145,598	5.3
20 to 24 years	71.5%	17,681	76.7%	62,478	5.3
30 to 34 years	79.0%	11,860	83.9%	42,801	4.9
At or above the poverty level	77.5%	105,020	82.3%	357,141	4.9
25 to 29 years	79.4%	13,303	83.9%	45,638	4.5
Some college or associate's degree	74.9%	41,551	79.4%	136,103	4.5
65 to 74 years	20.6%	101,849	23.2%	325,270	2.6
With own children under 6 years only	70.8%	5,873	73.4%	26,006	2.6
Bachelor's degree or higher	83.5%	15,218	86.0%	95,176	2.5
75 years and over	6.3%	78,101	6.8%	247,511	0.5
With own children under 18 years	75.3%	23,506	75.3%	102,721	0.0
With own children under 6 years and 6 to 17 years	67.5%	6,167	67.4%	26,988	-0.1
With own children 6 to 17 years only	79.5%	11,475	78.9%	49,707	-0.6

Source: Chmura, American Community Survey 5 Year Estimates (2016-2020), U.S. Census Bureau



Key factors identified in the literature review were modeled with the LFPRs of each county in South Carolina to estimate the contribution of each factor, holding all others constant. This is conducted through a multiple linear regression analysis with variables for gender, age, key local industries, disability, opioid dispensing, and an indication of rural or urban area.

As expected, approaching retirement age has a large (though not statistically significant) negative effect on participation, and a 1 percentage point increase in population ages 55 and older is associated with a 0.5 percentage point decline in county LFPR. The largest significant result is for the percentage of the population that is male, as a 1 percentage point increase in male population is associated with a 0.9 percentage point decline in LFPR in a county. The next largest significant factor is whether a county is rural or not, where a rural county is associated with a 0.06 percentage point decline in participation. While the interaction of higher concentrations of manufacturing employment in rural areas was not statistically significant, the estimated positive relationship may indicate rural areas that were able to retain manufacturing employment and job opportunities for manufacturing workers could be somewhat insulated from some of the larger reductions in LFPR in other rural areas. The percentage of the population with a disability also has a negative but relatively small coefficient, associated with a 0.005 percentage point decline in LFPR for each percentage point increase in population with a disability.

Results were not significant for young adults, concentration of industries such as retail and accommodation and food services, or opioid dispensing rates. These findings suggest strategies for increasing labor force participation in rural areas should concentrate on increasing training and job opportunities, including strategies specifically for men, rural areas, people with disabilities, and likely people who may have lost manufacturing jobs and have not been able to find opportunities with similar skills and level of pay.

**Table 4.2: Model Results Indicate Importance of Age, Manufacturing in Rural Areas, and Disability in Lower LFPRs**

LFPR	Coef.	Robust Std. Err.	t	P>t	[95% Conf. Interval]	
Male <sup>1</sup>	-0.89646*	0.4973938	-1.80	0.08	-1.90729 0.114362	
Ages 18-24 <sup>1</sup>	-0.30796	0.5598215	-0.55	0.586	-1.44565 0.8297382	
Ages 25-54 <sup>1</sup>	-0.00897	0.7174302	-0.01	0.99	-1.466961 1.449026	
Ages 55+ <sup>1</sup>	-0.52201	0.4310204	-1.21	0.234	-1.397952 0.3539257	
Percent Manufacturing <sup>2</sup>	-0.08932	0.1606923	-0.56	0.582	-0.415891 0.2372412	
Percent Retail <sup>2</sup>	-0.02358	0.3561954	-0.07	0.948	-0.747459 0.7002928	
Percent Accommodation and Food Services <sup>2</sup>	0.01167	0.2545499	0.05	0.964	-0.505642 0.528973	
With a Disability <sup>1</sup>	-0.00514***	0.0017327	-2.97	0.005	-0.008664 -0.001621	
Opioid Dispensing per 100 Population <sup>3</sup>	-0.00012	0.0002665	-0.46	0.651	-0.000663 0.00042	
Rural	-0.05609*	0.0307929	-1.82	0.077	-0.118673 0.0064843	
Rural x Percent Manufacturing <sup>2</sup>	0.14172	0.1668478	0.85	0.402	-0.197356 0.4807957	
Constant	1.31077***	0.3669989	3.57	0.001	0.5649404 2.056603	
legend: * p<.1; ** p<.05; *** p<.01						

Sources:

<sup>1</sup> ACS 2016-2020

<sup>2</sup> Chmura's JobsEQ®

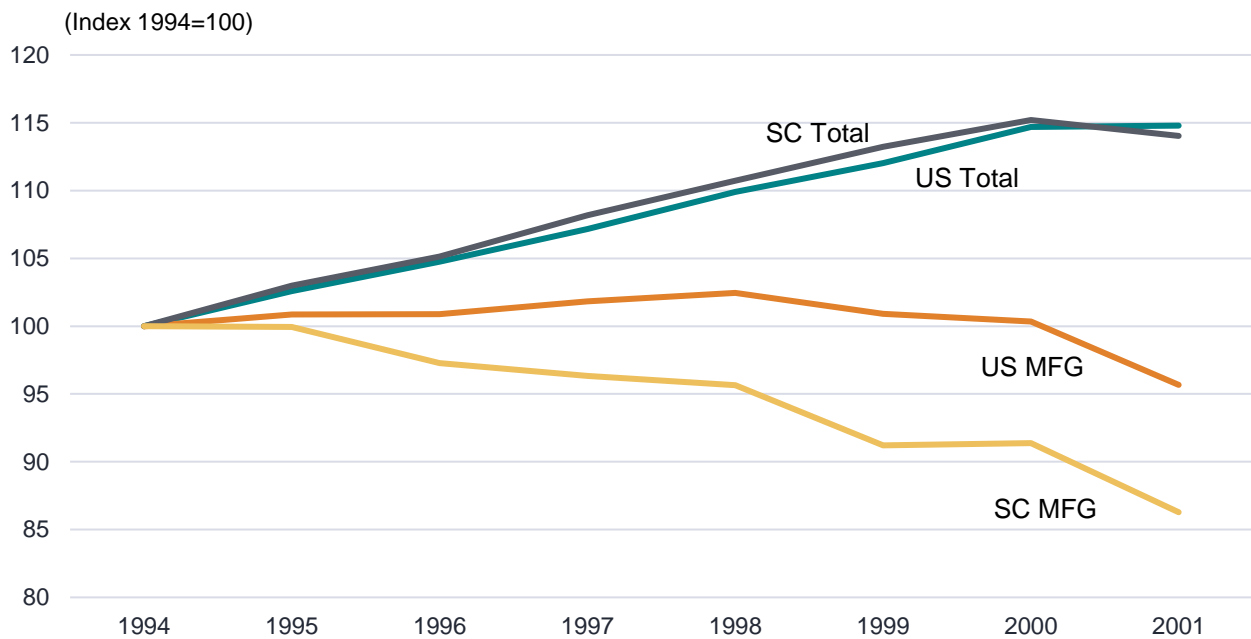
<sup>3</sup>CDC, National Center for Injury Prevention and Control, U.S. County Opioid Dispensing Rates, 2020

## 4.2 Industry Analysis

The industry mix in South Carolina likely contributed to the participation rate falling below that of the nation since 1994. Employment in the chart below, from the Bureau of Economic Analysis (BEA), ends with 2001 because that is the latest year that industry data are available under the Standard Industry Classification (SIC) system. The transition to NAICS codes altered some of the industries classified as manufacturing thereby making it difficult to have a consistent series through 2022.

As shown in Figure 4.2, while overall employment in South Carolina grew at a similar pace compared to the nation between 1994 and 2001, employment in the manufacturing industry declined steeply in South Carolina. Manufacturing employment fell 14% in South Carolina over this period, compared with a 4% decline in the nation. As examined in figure 2.11, most of this loss was in textile mills and apparel manufacturing, which combined lost nearly 104,000 jobs between 1990 and 2010. While transportation equipment manufacturing has grown in the state since the 1990s, that growth has not been sufficient to offset losses in textiles and apparel manufacturing.

Figure 4.2: Manufacturing Employment Dropped 14% in South Carolina From 1994-2001



Source: BEA and Chmura

It is likely that textile and apparel manufacturing workers who lost their jobs during this period were unable to transfer those skills to other manufacturing industries due to limited job availability or skill mismatch. Based on the typical staffing pattern of textile and apparel industries<sup>54</sup> in South Carolina, for example, sewing machine operators would make up over 25,000 of the 104,000 laid off workers. Textile winding, twisting and drawing out machine setters, operators, and tenders make up the second largest occupation at almost 7,200 people. Workers that lost their jobs may have chosen to migrate to other areas with work opportunities, changed careers if possible, retired if eligible, or pursued a disability claim. Increased retirements and disabilities related to layoffs would lower the labor force participation rate in a region.

<sup>54</sup> Textile and apparel industries are defined by combining textile mills (NAICS 313), textile product mills (NAICS 314), and apparel manufacturing (NAICS 315).

To test the possible contributions of textile and apparel manufacturing and other industries to changes in LFPR, Chmura conducted a cross-sectional regression analysis for all states (excluding Alaska, Hawaii, and the District of Columbia) modeled with key demographic variables such as gender and age, as well as employment change (from 2001 to 2019) in key industry sectors that are available in Chmura’s JobsEQ®. Results are summarized in table 4.3 below.

**Table 4.3: Model Results Indicate Changes in Industry Sectors Contribute to Change in LFPRs**

Percentage of Population or Employment	Coef.	Robust Std. Err.	t	P>t	[95% Conf. Interval]	
Male <sup>1</sup>	1.684358***	0.4262354	3.95	0	0.8199125 2.548803	
Ages 55+ <sup>1</sup>	-0.0746551	0.1499209	-0.5	0.622	-0.378709 0.2293986	
With a Disability <sup>1</sup>	-1.071774***	0.2538885	-4.22	0	-1.586684 -0.556865	
Opioid Dispensing per 100 Population <sup>3</sup>	0.0000983	0.0464925	0	0.998	-0.094193 0.0943896	
Transportation and Warehousing <sup>2</sup>	-3.395394***	0.9521491	-3.57	0.001	-5.326442 -1.464346	
Professional, Scientific, and Technical <sup>2</sup>	-0.375392	0.5512832	-0.68	0.5	-1.493446 0.7426622	
Healthcare and Social Assistance <sup>2</sup>	1.93627*	0.9607793	2.02	0.051	-0.012281 3.88482	
Accommodation and Food Services <sup>2</sup>	0.4528305***	0.1664193	2.72	0.01	0.1153165 0.7903446	
Textile and Apparel Manufacturing <sup>2</sup>	-0.2323907*	0.1233595	-1.88	0.068	-0.482575 0.0177939	
Pharmaceutical Manufacturing	-0.0411497	0.0307326	-1.34	0.189	-0.103478 0.0211788	
Printing	0.4774281	0.3549943	1.34	0.187	-0.242534 1.19739	
Constant	-0.0715857	0.2642792	-0.27	0.788	-0.607569 0.4643973	
legend: * p<.1; ** p<.05; *** p<.01						

Sources:

<sup>1</sup> ACS 2016-2020

<sup>2</sup> Industry Percent Change in Employment 2001 to 2019, Chmura’s JobsEQ®

<sup>3</sup> CDC, National Center for Injury Prevention and Control, U.S. County Opioid Dispensing Rates, 2020

The model results indicate a higher percentage of the population that is male contributes to higher labor force participation, which could be related to the historical trend that male population tend to have higher LFPR than female population. The results also indicate that a higher percentage with a disability lowers LFPRs, as expected from previous analysis and the literature review.

Industry-specific differences are significant for the transportation and warehousing sector and accommodation and food services sector, but in opposite directions. Growth in transportation and warehousing is associated with a decline in LFPR, which could be linked to locating warehouses in more rural or economically distressed areas. Growth in accommodation and food services has a positive contribution to LFPR, as might be expected given the generally low education and training barriers for job opportunities in this sector which provide more opportunities for people to enter the workforce. Healthcare and social assistance and textile and apparel manufacturing are weakly significant. Results show growth in textile and apparel negatively impacting LFPR, which provides some support for the theory of greater concentration of employment in this industry contributing to LFPR declines. Other industries such as printing, which declined nationally over this period, and pharmaceutical manufacturing, which grew rapidly, did not show significant impacts on LFPR.

Table 4.4 below shows the estimated effects from the cross-sectional regression analysis along with the values of the independent variables for South Carolina, North Carolina, and Georgia for comparison. For example, South Carolina has a higher percentage of those 55 and over, and a higher percentage of the population with a disability, which help to explain the fact that the LFPR for South Carolina is lower than its neighboring states. From an industry perspective, the growth of healthcare and social services, and accommodation and food services industries in South Carolina lagged behind North Carolina and Georgia, which also contributed to the lower LFPR for the state, as those two industries provided opportunities for low-skilled workers and female workers to participate in the labor market. While employment declines in textile and apparel manufacturing contributed to lower participation rates in all three

states, employment declined more in North Carolina than in South Carolina. Employment opportunities in other manufacturing industries in North Carolina, such as food manufacturing and chemical manufacturing, may have helped partially offset these losses in textile and apparel manufacturing and mitigated impacts on the LFPR in the state.

**Table 4.4: Industry Mix in South Carolina and Neighboring States Contributes to LFPR**

Percentage of Population or Employment	Coef. From Regression	SC	NC	GA	Notes
Male <sup>1</sup>	1.684358***	48.5%	48.6%	48.6%	Slightly lower percentage male in SC, lower LFPR
Ages 55+ <sup>1</sup>	-0.0746551	31.0%	29.2%	26.1%	SC has older population, lower LFPR
With a Disability <sup>1</sup>	-1.071774***	12.2%	11.2%	10.6%	Greater percentage with a disability, lower LFPR
Opioid Dispensing per 100 Population <sup>3</sup>	0.0000983	56.6%	52.8%	53.9%	
Transportation and Warehousing <sup>2</sup>	-3.395394***	0.4%	0.6%	0.4%	Slightly slower growth in SC, could raise LFPR
Professional, Scientific, and Technical <sup>2</sup>	-0.375392	0.8%	1.1%	0.8%	
Healthcare and Social Assistance <sup>2</sup>	1.93627*	0.9%	1.2%	1.6%	Slower growth in SC, lower LFPR
Accommodation and Food Services <sup>2</sup>	0.4528305***	2.2%	2.6%	2.3%	Slower growth in SC, lower LFPR
Textile and Apparel Manufacturing <sup>2</sup>	-0.2323907*	-5.1%	-6.9%	-3.5%	Greater decline in SC relative to GA but not NC, lower LFPR
Pharmaceutical Manufacturing	-0.0411497	4.7%	0.4%	3.9%	
Printing	0.4774281	-3.1%	-3.9%	-2.3%	
Constant	-0.0715857	48.5%	48.6%	48.6%	

Sources:

<sup>1</sup> ACS 2016-2020

<sup>2</sup> Industry Percent Change in Employment 2001 to 2019, Chmura's JobsEQ®

<sup>3</sup>CDC, National Center for Injury Prevention and Control, U.S. County Opioid Dispensing Rates, 2020

## 5. Policy and Strategy Implications

### 5.1. Policy Implications from Literature Review

The decomposition analysis for South Carolina shows that the driving force of the long-term decline in the state's labor force participation rate (LFPR) is population aging. Between 1994 and 2019, the state had a rising share of its population ages 65 and over and a declining share of prime-age population, and the shares of age groups shifted to a larger degree in South Carolina than in neighboring states.

Research shows some policies likely have a negative impact on labor force participation. Researchers widely agree that early retirement age and large disability assistance can strongly entice older workers to permanently exit the workforce. One study estimated retirement and disability were responsible for the majority (65%) of the decline in labor force participation rates in the United States between 2003 and 2013.<sup>55</sup> The decomposition analysis showed an increase in participation for those 55 and older in South Carolina that helped partially offset some of the decline, and the state should pursue policies that further increase participation of older workers, particularly in manual jobs, and individuals with a disability. Strategies may include developing job placement programs specifically for this population, having staff at workforce job centers to assist older workers with their specific needs, encouraging self-employment for older adults, and updating skills to help transfer to new jobs.<sup>56</sup> The timing of these strategies will be particularly important as health concerns about COVID-19 wane, government stimulus declines, and older adults—especially those not yet eligible for full Social Security retirement benefits—consider reentering the workforce.

Strategies to assist workers with disabilities include adopting a framework of employment as the first and preferred option for working-age individuals with a disability, modeling recruitment of and accommodations for people with disabilities in state jobs, and encouraging private sector employment with tax credits, refunds, and/or procurement preferences for businesses employing or owned by workers with disabilities.<sup>57</sup> Employment First is a national framework for increasing the labor force participation of individuals with a disability which South Carolina has not signed onto, though the Employment First Initiative Act has been introduced in the South Carolina General Assembly.<sup>58</sup> The expected increase in disability due to Long COVID further underscores the importance of developing and implementing these kinds of policies.

Based on the decomposition analysis, the second largest factor contributing to the decrease in LFPR is in the within-group decline of the LFPR for young workers, contributing to 23.7% of the overall decline. The within-group variation means young workers have been less likely to participate in the labor force over time. Research summarized in the literature review suggests this coincides with higher school enrollment and increasing focus on schooling, leaving students less time and energy for non-school activities including work. Over the COVID-19 pandemic, though, participation by young adults increased, as more job opportunities opened up that older workers were unwilling or unable to fill. Given the returns to education, particularly completing a high school degree, and clear pattern of increasing LFPR with increasing education, strategies to increase participation in this age group should avoid decreasing educational attainment outcomes as well as ensure the educational outcomes are tied to local job opportunities. Potential state strategies to improve young adult labor force participation include strengthening guidance and coursework connected to careers in middle school and high school, improving access and encouraging employers to offer high-quality work experiences such as paid internships and job shadowing, and supporting summer youth employment

<sup>55</sup> Shigeru Fujita, "On the causes of declines in the labor force participation rate," *Research Rap Special Report*, Federal Reserve Bank of Philadelphia, (2014).

<sup>56</sup> Abraham, Katharine, and Susan Houseman, "Policies to Improve Workforce Services for Older Americans," *Brookings*, (Nov. 2020)

<sup>57</sup> Reed, James, "State Policy Options for Employing People with Disabilities," *National Conference of State Legislatures*, (Feb 2015).

<sup>58</sup> Employment First Initiative Act, South Carolina General Assembly, 124<sup>th</sup> Session, (2021-2022)

programs.<sup>59</sup> These policies should include specific outreach and tracking for young adults who are out of school and not working as a particularly vulnerable population likely to benefit the most from these efforts.

Research also revealed a variety of strategies for states to increase participation for populations touched upon in the literature review. Policy options range from reducing incarceration and improving labor force reentry for former prisoners<sup>60</sup> to expanding policies that help people balance employment and caregiving.<sup>61</sup> Workforce flexibility improvements may also increase participation,<sup>62</sup> as shown by the increase in LFP after the introduction of ridesharing platforms that allowed for flexible hours.<sup>63</sup> Policies that restrict hiring formerly incarcerated individuals or bar them from occupational licensing have been shown to negatively affect the LFPR, specifically for black men, and easing these policies may be expected to improve LFPRs.<sup>64</sup>

While often framed as an option to increase female labor force participation, easing caregiving barriers may improve LFPR for male caregivers as well. Krueger (2017) explained that a large number of women between 25 and 44 reported “home responsibilities” as a barrier for workforce. Those can be both the need to care for children as well as elderly, as baby boomer generations enter retirement age. The study also pointed out differences between the United States, Canada, and OECD (Organization for Economic Cooperation and Development) countries and proposed that lack of family friendly policies in the United States may be inhibiting labor force participation.<sup>65</sup> Similarly, a 2017 study by Black, Schanzenbach, and Breitwieser suggested policies such as a paid family leave program and a more robust public jobs program and job search assistance similar to those in other developed nations may help improve the LFPR, especially for prime-age women.<sup>66</sup> Similar policies are credited with the rise of LFPR for women in Japan.<sup>67</sup>

Many of the above strategies would be beneficial for both rural and urban areas, but specific strategies are needed for unique barriers in rural areas. A key difference between rural and urban areas is distance and connectivity to job opportunities. Researchers suggested policymakers can increase labor participation in rural areas through low-cost and accessible transportation projects that connect workers to urban areas.<sup>68</sup> Stephens and Deskins (2018) suggested educational attainment and other human capital improvements have a more significant impact in rural areas, possibly due to fewer job opportunities.<sup>69</sup> They also find a higher share of employment in manufacturing is associated

<sup>59</sup> Ross, Martha and Thomas Showalter, “Millions of Young Adults are Out of School or Work. We need an Education and Employment Promise,” *Brookings*, (Dec 2020).

<sup>60</sup> Keith Hennessey and Bruce Reed, “A Policymaker’s Guide to Labor Force Participation,” *Aspen Economic Strategy Group*, February 4, 2019

<sup>61</sup> Ryan Nunn, Jana Parsons, and Jay Shambaugh, “Labor Force Nonparticipation: Trends, Causes, and Policy Solutions,” *The Hamilton Project*, October 2019

<sup>62</sup> A.B. Krueger, “Where have all the workers gone? An inquiry into the decline of the U.S. labor force participation rate,” *Brookings Papers on Economic Activity*, (2017): 55.

<sup>63</sup> Li, Ziru, Yili Hong and Zhongju Zhang, “The Empowering and Competition Effects of the Platform-Based Sharing Economy On the Supply and Demand Sides of the Labor Market,” *Journal of Management Information Systems* 38, no. 1 (1 Jan. 2021): 140 - 165.

<sup>64</sup> Devah Pager, “The mark of a criminal record,” *American Journal of Sociology* 108, no. 5 (2003): 937–975.

<sup>65</sup> Alan B. Krueger, “Where Have All the Workers Gone? An Inquiry into the Decline of the U.S. Labor Force Participation Rate,” *Brookings Papers on Economic Activity*, Fall 2017, Page 1-87.

<sup>66</sup> Black, Sandra, Diane Schanzenbach, and Audrey Breitwieser, “The Recent Decline in Women’s Labor Force Participation,” *The Hamilton Project*, (Oct. 2017).

<sup>67</sup> Shambaugh, Jay, Ryan Nunn, and Becca Portman, “Lessons from the Rise of Women’s Labor Force Participation in Japan,” *Brookings*, (Nov. 2017)

<sup>68</sup> Marta Lachowska and Stephen A. Woodbury with the assistance of Jing Cai, Francesca Fazio, and Brian Pittelko, “Labor Force Participation in Mississippi and other Southern States: Final Report.” *Upjohn Institute Technical Report*, no. 12-027 (Kalamazoo, MI: W.E. Upjohn Institute for Employment Research, 2012).

<sup>69</sup> Heather M. Stephens, and John Deskins, “Economic Distress and Labor Market Participation,” *American Journal of Agricultural Economics*, no. 5, (2018): 1336 - 1356.

with higher LFPRs, consistent with the regression analysis for South Carolina counties performed in Section 4. These results suggest rural areas are more heavily impacted by declines in manufacturing, and policies and programs to better help rural workers transfer skills to growing industries can help expand their job opportunities as well as help attract new employers who need a skilled workforce and established training pipeline.

As evidenced in this literature review, South Carolina faces many challenges in improving labor force participation, but they are not wholly unique geographically or historically. Programs and policies described above show evidence of improving participation across the United States and in other nations, and the nation’s reevaluation of work following the COVID-19 pandemic presents a valuable opportunity for South Carolina to turn the findings and recommendations of this study into actions that realign the state’s labor participation trends.

**Table 5.1: Strategies Should Adapt to Populations with Lower Participation in South Carolina**

Target Population	Recommendations	Local Influence
Ages 55 and Older	Develop job placement programs	√
	Staff workforce job centers to assist older workers	√
	Encourage self-employment	
	Update skills to help transfer to new jobs	√
Workers with Disabilities	Frame employment as the first and preferred option for individuals with a disability (Employment First Initiative Act)	
	Encourage private sector employment (tax credits, refunds, procurement preferences)	
Young Adults (16-24)	Avoid decreasing educational attainment outcomes	
	Strengthen guidance and coursework connected to careers in middle and high school	√
	Improve access and encourage employers to offer paid internships and job shadowing	
	Support summer youth employment programs	√
Prime-Age Workers	Include specific outreach for young adults not in school and not working	√
	Expand policies that help people balance employment and caregiving	
	Enhance paid family leave	
	Strengthen public jobs programs and job search assistance	√
Black and Hispanic Workers	Reduce incarceration and improve labor for reentry for former prisoners	
	Relax policies that restrict hiring formerly incarcerated individuals	
Rural Areas	Review occupational licensing to reduce prohibitive restrictions	
	Improve transportation connecting workers to jobs	√
	Increase educational attainment to access greater job opportunities	
	Attract and retain jobs aligned with local education and skills	√

Some of the policies discussed above, such as using tax credits, tax policies, and incentives to encourage hiring of the disabled or previously incarcerated individuals, as well as encouraging family-friendly and flexible policies, fall within the authority of state and federal governments. Policies related to occupational license requirements are typically developed at the state level. Those policies cannot be implemented by local authorities, especially workforce development boards. There are certain areas, however, that can be influenced by workforce development boards. As illustrated in Table 5.1, those strategies focus on providing training for older workers, offering various youth programs such as career outreach and guidance, as well as providing job search assistance for all workers. In addition, local workforce development boards can serve as an advocacy for populations with barriers to employment, including

disabled, previously incarcerated, rural, and minority populations, which can bring policy changes at the federal and state levels that can improve labor force participation.

## 5.2. Regional Policy Implications

While the policy recommendations summarized in Table 5.1 offer various strategies to address low LFPR issues for different demographic groups, it needs to be emphasized that regions in South Carolina may face their own unique challenges and policies may be customized for each region.

In 2022, the South Carolina Department of Employment and Workforce commissioned a labor force participation survey (DEW Survey) with a target population of those individuals who were employed in 2019, filed for unemployment benefits in 2020, but were not in state’s wage and salaried employment database in 2021. This survey collected data on the current working status of respondents and their barriers to employment. Importantly, this survey included respondents from all counties in South Carolina. Examining regional differences in the survey responses can help formulate regional-specific labor force policies.<sup>70</sup>

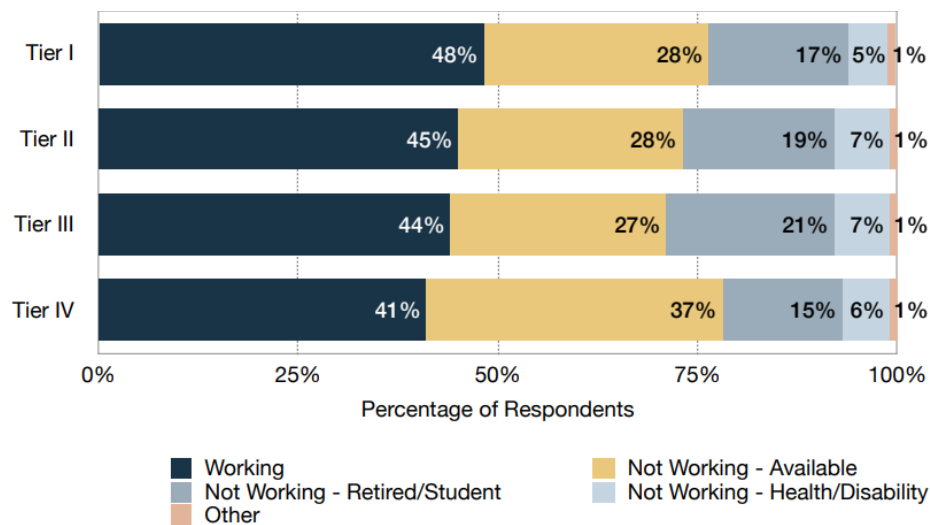
While the survey data included respondents from each county, the published report provided limited data at the county or eleven workforce development area levels. The most relevant data are tabulated based on the four tiers of regions, based on the classification by South Carolina Department of Revenue. As a result, the discussion below related to regional LFPR policies are based on survey results by four different tiers.

Each year, South Carolina Department of Revenue classifies all counties in the state into four different tiers for job credit purposes. This ranking is based on the county’s unemployment rate and per capita income. In 2022, each new full-time job created in South Carolina can receive a tax credit ranging from \$1,500 to \$25,000 per year, with \$1,500 for Tier I counties, \$2,750 for Tier II counties, \$20,250 for Tier III counties, and \$25,000 for Tier IV counties.<sup>71</sup>

Those tier rankings imply that counties in lower tiers, such as Tier III and IV, have higher unemployment rates and lower per-capita incomes while those in higher tiers are more affluent counties with lower unemployment rates. Not surprisingly, many Tier I counties are clustered in the state’s large metropolitan areas of Columbia, Charleston and Greenville, which have experienced robust economic growth lately. Many low tier counties are located in rural areas in South Carolina.

The DEW survey shows that there is a higher percentage of individuals not working in lower

Figure 5.1: Work Status by Tiers



Source: SC DEW Survey

<sup>70</sup> Millan Group Chicago LLC, “South Carolina Labor Force Participation”, for South Carolina Department of Employment and Workforce, accessed November 7, 2022, <https://www.dew.sc.gov/sites/dew/files/Documents/FinalReportSEP30.pdf>

<sup>71</sup> Elliot Davis, “2022 SC Job Tax Credit County Tier Ranking”, accessed November 8, 2022, <https://www.elliottdavis.com/2022-sc-job-tax-credit-county-tier-rankings/>. SC DEW Survey report also includes a list of counties in four tiers.



tier counties. On average, 48% of respondents in Tier I counties were working at the time of survey (Figure 5.1). This percentage declined to 45% for Tier II counties, 44% for Tier III counties, and 41% for Tier IV counties. These results indicate that low labor force participation is a more serious problem for Tier IV counties.

For respondents not working, there are some regional differences in the reasons they are not working. In Tier IV counties, with examples like Orangeburg, Barnwell, Bamberg, and Allendale Counties, there is a large percentage of respondents (37%) who are not working, but available for work. This presents the largest opportunities for those counties to improve their labor force participation, if those individuals' barriers to employment can be overcome with the right policy tools. In Tier III counties such as Horry, there is a noticeably higher percentage of respondents who are not working due to their being retired or students. The Myrtle Beach (in Horry County) area is a popular retirement destination. For counties with a large concentration of retirees, it may be difficult to entice them back into the workforce.

The DEW survey reports that barriers to work are also different for counties in various tiers. Table 5.2 provides a snapshot of the top 10 barriers by different regions. In Tier IV counties, where there is a large number of individuals not working but available, the top barrier is the lack of transportation. This was the largest percentage reason given for any tier, as 27% of respondents cited this reason. In counties in other tiers, less than 20% of respondents consider this as a barrier. In other tiers, the top barrier is lack of high paying jobs. Though not cited as one of the top 10 barriers, a disproportionately high percentage of respondents in Tier IV counties (11%) reported that they lacked information of jobs, compared with 5% to 7% for counties in the three other tiers.

Table 5.2.: Top 10 Barriers to Getting a Jobs, by Tiers

Barrier	I	II	III	IV
Low pay jobs	22%	24%	25%	23%
Health	20%	22%	23%	17%
Gaps in employment history	19%	23%	18%	15%
Optimal hours not available	17%	17%	15%	12%
Disabilities	17%	13%	14%	19%
Lack of transportation	16%	18%	16%	27%
Lack of child care	14%	15%	11%	12%
Stay with child	14%	13%	13%	12%
Age (too old)	13%	11%	10%	11%
Criminal record	11%	12%	12%	11%

Source: SC DEW Survey

In Tier II counties, more respondents (23%) reported that gaps in employment history is one of the top barriers, while this percentage is only 15% for Tier IV counties, 18% for Tier I counties, and 18% for Tier III counties. The exact reasons for employment gaps are not collected by the survey. It could be that individuals left work to care for children or other family members, went back to school, or were incarcerated. Different policies can be formulated to address those issues areas. Counties in Tier II also have a relatively higher percentage of respondents reporting lack of childcare as one of the top barriers. Combining those two reasons, it can be inferred that one important factor for gaps in employment history in Tier II counties is likely due to leaving work to take care of children.

At a first glance, there appear to be differences related to health and disabilities as two separate barriers. Tier III counties have a higher percentage of respondents citing health as a barrier, while more respondents in Tier IV counties cited disabilities as a barrier. Since those two barriers are related, however, it is recommended that the combined results of those two barriers be examined. When combined, there are fewer regional differences among the four tiers related to health or disabilities as employment barriers.

A review of the survey data indicate that there are opportunities for region-specific policies to increase labor force participation. In Tier IV counties, which tend to be low income and rural, lack of transportation is the main barrier to

employment. This is also the region with the largest number of “not-working but available” individuals. It is possible to increase labor participation in Tier IV counties through low-cost and accessible transportation projects that connect workers to job centers. Programs such as organized car-pooling should be encouraged. While establishing public transit in rural areas can be expensive, regions should explore federal or state grants to study the feasibility of such a transit system. In addition, subsidies and discounts on gasoline or other travel expenses may also help individuals overcome the transportation barrier.

Survey results also show that there are information barriers, as a high percentage of respondents in Tier IV counties reported that they lacked information of jobs. To bridge the gap between jobs and workers, local workforce development organizations can maintain a centralized jobs database, and make it easily accessible online, via smart phone or tablet. Workforce centers can be strategically located so that job seekers find it convenient to go there and look for employment. This information can also be distributed through libraries to assist individuals without access to a computer.

In Tier II counties, family friendly policies can be explored to increase labor force participation. More than any other region, this region cited “lack of childcare” and “gaps in employment history” as barriers to employment. Possible policies may include tax credits and procurement preference to encourage private sector employers to offer more family friendly policies, such as flexible work schedules, paid family leave, and financial assistance to offset childcare cost. In addition, the same incentives can be used to encourage hiring workers with gaps in their employment histories.

In Tier III counties, where there is a relatively larger concentration of retirees who are out of the labor force, policies can be implemented to target retirees to incentivize some to return to the workforce. Examples of those measures include encouraging self-employment and providing training opportunities to upgrade skills. Those policies may have limited efficacy, however, as many retirees choose to exit the workforce permanently.

Finally, providing high paying jobs will help improve labor force participation in all regions—urban and rural, lower and higher tiers. This is commonly cited by respondents as the most important barrier to employment. Since there are little regional differences in this response, statewide policy to stimulate economic growth and job creation can be more effective. Examples of those policies include a tax credit for new jobs, incentives for business expansion and relocation, assistance in business start-up and generation, and tax reduction and exemption to reduce business costs.

## Appendix 1: Literature Review Summary Table

The literature about labor force participation rates in the nation identifies several factors that have contributed to its decline. The main factor driving the decline since the year 2000 points to an aging population, contributing as much as two-thirds to the overall drop (from 67.1% in 2000 to 63.3% in 2013).

In addition to aging trends, other factors changed participation rates among age cohorts and gender. As noted below:

- increased school enrollment combined with a focus on educational attainment among young adults;
- globalization and loss of manufacturing jobs, disabilities, addictions, and increased leisure activities for men; and
- increasing educational attainment and caregiving responsibilities for women.

Many of these impacts are concentrated in certain regions, particularly rural areas, and contribute to persistently lower LFPR. In addition to these long-term trends, the COVID-19 pandemic introduced factors such as increased household income from stimulus checks and expanded unemployment benefits, shifts in worker preferences away from low-skilled and customer-facing jobs, increasing disability from Long COVID symptoms, and an increasing focus on the need for childcare support. These results are summarized in the table below.

**Literature Identifies Various Factors that Created Changes in the Labor Force Participation Rate (LFPR) Over the Long-Term and During the Recent Pandemic**

Age		
	Time Period	Finding
	1976-1990	Population age contributed +0.7 percentage points in LFPR
Aaronson et al. (2014)	1990-2000	Population age contributed -0.1 percentage points in LFPR
	2007-2014	Population age contributed -1.3 percentage points in LFPR
Fujita (2014)	2000-2013	Retirements account for 65% of decline in LFPR
Krueger (2017)	1990-2017	School enrollment offset declining participation for young adults
Bauer et al. (2019)	1993-1998 and 2000-2018	Young adults spend more time on school, less time on non-school activities like work
Gender		
	Time Period	Finding
Borjas (2013)	1945-1990	Educational opportunities, changes in social attitude, and technology contributed to rapid rise in women's LFPR
Krueger (2017)	1990-2017	About half of prime-age (25-54) men not in the labor force take pain medication
Dotsey et al. (2017)	1980-2017	Wage gap between high- and low-skilled workers and globalization decreased LFPR for low-skilled male workers, especially in manufacturing
Aquiar et al. (2022)	2004-2015	Improvements in video game technology raised value of leisure over work for young men
Ullrich (2021)	1976-2021	Aging population, illness, disability, addiction, declining manufacturing employment, and cultural factors like delayed marriage, incarceration, and video games contribute to declining male LFPR
Black et al. (2017)	2000-2016	Female LFPR declines driven by prime-age women, likely family responsibilities, lack of paid maternity leave, and unsupportive unemployment insurance programs
Regional Variation		
	Time Period	Finding
Stephens and Deskins (2018)	2000 and 2010	Demographics, industrial makeup, and economic opportunity impact county LFPR, as do educational attainment, health, and disability in rural areas
Dotsey et al. (2017)	1980-2017	Increased globalization affected low-skilled male workers the most as manufacturing jobs moved overseas

### Literature Identifies Various Factors that Created Changes in the Labor Force Participation Rate (LFPR) Over the Long-Term and During the Recent Pandemic

COVID-19		
	Time Period	Finding
Krueger (2017)	1990-2017	LFPR declined more in counties with relatively more opioid prescriptions, causing a greater impact in rural areas
Quinby et al. (2021)	2019-2021	Workers between 55 and 70 who left the labor force during COVID likely to return when safer to work and after income sources such as stimulus checks and unemployment expire
Bauer et al. (2022)	2016-2022	Ages 16-24 had the largest positive contribution to LFPR over the pandemic COVID-19 virus accounts for more than 250,000 deaths for people ages 18 to 64
Forsythe et al. (2022)	2015-2019 and 2020-2022	Exits from older workers up the job ladder created more space for young workers to participate in the labor force Worker preferences shifted away from low-skilled and customer-facing jobs due to COVID
Daly et al. (2020)	2019-2020	LFPR for workers with a high school education or less -4 p.p. vs. -1.2 p.p. for bachelor's or higher
Falk et al. (2021)	2019-2021	By mid-2021, the only group at pre-pandemic levels was those with a high school diploma. Bachelor's degree or higher -3.6 p.p.
Lim et al. (2021)	2019-2021	Female Black and Hispanic workers had greater share of job losses and participation rates are still lower than pre-pandemic. In this group, about 1/4 of additional labor force exits are in households with children.
Furman et al. (2021)	2020-2021	Employment declines for mothers of young children driven by concerns about COVID-19 and additional income from unemployment insurance, not childcare challenges
Montes et al. (2021)	2020-2021	Caregiving concerns decreased LFPR -0.75 p.p. in 2020 and -0.4 p.p in early 2021
Faberman et al. (2022)	2013-2021	A decline in desired work hours during the pandemic contributes to LFPR declines over the pandemic
Dunne et al. (2022)	2020-2022	An estimated 2.7% of South Carolina's population could have disabling Long COVID

## Appendix 2: Additional South Carolina Data

Changes in LFPR and Population Shares: Total, by Age and Education, 1994-2019, South Carolina, Men						
	Labor Force Participation Rate			Population Share		
	1994	2019	Change 1994-2019	1994	2019	Change 1994-2019
<b>By Age Group</b>						
Age 16-24	65.7%	53.1%	-0.125	19.4%	13.5%	-0.059
Age 25-54	90.6%	87.8%	-0.027	59.3%	47.8%	-0.115
Age 55-64	60.4%	66.9%	0.065	11.3%	16.5%	0.052
Age 65+	17.1%	22.6%	0.055	10.0%	22.3%	0.122
<b>By Educational Attainment</b>						
Less than High School	53.5%	41.0%	-0.125	26.4%	14.2%	-0.123
High School	79.9%	65.2%	-0.147	34.3%	31.3%	-0.030
Some College & Associate Degree	80.6%	67.8%	-0.128	21.2%	24.7%	0.035
Bachelor's Degree and Higher	90.4%	74.5%	-0.158	18.1%	29.8%	0.117
<b>By Age and Educational Attainment</b>						
Age 16-24						
Less than High School	52.6%	31.8%	-0.208	7.7%	5.3%	-0.025
High School	82.0%	67.7%	-0.143	6.3%	4.1%	-0.022
Some College & Associate Degree	63.5%	64.7%	0.013	4.4%	3.3%	-0.011
Bachelor's Degree and Higher	74.0%	70.5%	-0.035	0.9%	0.8%	-0.001
Age 25-54						
Less than High School	75.9%	69.4%	-0.066	11.0%	3.9%	-0.071
High School	91.9%	85.0%	-0.069	20.7%	14.7%	-0.060
Some College & Associate Degree	93.8%	87.0%	-0.068	13.7%	12.2%	-0.015
Bachelor's Degree and Higher	97.0%	95.2%	-0.018	13.9%	17.0%	0.030
Age 55-64						
Less than High School	40.4%	47.4%	0.070	3.2%	2.1%	-0.011
High School	64.1%	65.4%	0.013	3.9%	6.1%	0.022
Some College & Associate Degree	60.6%	66.6%	0.060	2.0%	4.0%	0.019
Bachelor's Degree and Higher	83.2%	79.1%	-0.042	2.1%	4.2%	0.021
Age 65+						
Less than High School	9.9%	14.0%	0.041	4.5%	2.8%	-0.017
High School	21.5%	18.3%	-0.033	3.4%	6.4%	0.030
Some College & Associate Degree	15.1%	25.1%	0.100	1.0%	5.2%	0.042
Bachelor's Degree and Higher	34.8%	27.6%	-0.072	1.1%	7.8%	0.067
<b>TOTAL</b>	<b>75.0%</b>	<b>65.2%</b>	<b>-0.098</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.000</b>

Source: Chmura Computation Based on CPS Data

Changes in LFPR and Population Shares: Total, by Age and Education, 1994-2019, South Carolina, Women						
	Labor Force Participation Rate			Population Share		
	1994	2019	Change 1994-2019	1994	2019	Change 1994-2019
<b>By Age Group</b>						
Age 16-24	60.9%	50.6%	-0.102	15.8%	12.5%	-0.033
Age 25-54	76.3%	74.0%	-0.022	58.4%	46.6%	-0.118
Age 55-64	41.2%	54.8%	0.136	12.2%	16.7%	0.045
Age 65+	10.1%	13.2%	0.031	13.6%	24.2%	0.106
<b>By Educational Attainment</b>						
Less than High School	36.1%	25.4%	-0.108	25.8%	11.8%	-0.139
High School	64.4%	47.6%	-0.168	36.6%	27.5%	-0.091
Some College & Associate Degree	71.3%	55.3%	-0.160	22.4%	29.2%	0.068
Bachelor's Degree and Higher	76.7%	66.5%	-0.102	15.2%	31.4%	0.162
<b>By Age and Educational Attainment</b>						
Age 16-24						
Less than High School	41.1%	16.5%	-0.245	6.1%	4.0%	-0.021
High School	71.2%	66.1%	-0.051	4.3%	3.0%	-0.013
Some College & Associate Degree	69.8%	60.6%	-0.092	4.1%	4.0%	-0.002
Bachelor's Degree and Higher	92.3%	82.9%	-0.093	1.3%	1.5%	0.003
Age 25-54						
Less than High School	56.2%	48.8%	-0.075	9.2%	3.4%	-0.058
High School	77.9%	67.0%	-0.109	22.9%	12.0%	-0.109
Some College & Associate Degree	79.9%	75.7%	-0.041	14.8%	13.7%	-0.011
Bachelor's Degree and Higher	84.4%	82.4%	-0.020	11.5%	17.6%	0.061
Age 55-64						
Less than High School	25.6%	29.7%	0.041	4.3%	1.8%	-0.025
High School	46.1%	48.6%	0.024	4.8%	4.8%	0.000
Some College & Associate Degree	54.5%	54.4%	-0.002	1.8%	4.6%	0.028
Bachelor's Degree and Higher	55.8%	69.1%	0.133	1.2%	5.4%	0.042
Age 65+						
Less than High School	8.7%	5.5%	-0.031	6.2%	2.6%	-0.035
High School	10.1%	10.0%	-0.001	4.6%	7.8%	0.032
Some College & Associate Degree	15.6%	12.8%	-0.028	1.6%	7.0%	0.053
Bachelor's Degree and Higher	10.3%	20.1%	0.098	1.2%	6.9%	0.056
<b>TOTAL</b>	<b>60.5%</b>	<b>53.2%</b>	<b>-0.074</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.000</b>

Source: Chmura Computation Based on CPS Data

Changes in LFPR and Population Shares: Total, by Age and Education, 2019-2021, South Carolina, Men

	Labor Force Participation Rate			Population Share		
	2019	2021	Change 2019-2021	2019	2021	Change 2019-2021
<b>By Age Group</b>						
Age 16-24	53.1%	55.7%	0.026	13.5%	13.9%	0.005
Age 25-54	87.8%	85.6%	-0.023	47.8%	47.3%	-0.005
Age 55-64	66.9%	61.3%	-0.056	16.5%	15.6%	-0.008
Age 65+	22.6%	17.4%	-0.052	22.3%	23.2%	0.009
<b>By Educational Attainment</b>						
Less than High School	41.0%	40.1%	-0.009	14.2%	13.8%	-0.004
High School	65.2%	62.3%	-0.029	31.3%	34.0%	0.027
Some College & Associate Degree	67.8%	66.7%	-0.011	24.7%	22.8%	-0.019
Bachelor's Degree and Higher	74.5%	67.7%	-0.068	29.8%	29.4%	-0.004
<b>By Age and Educational Attainment</b>						
Age 16-24						
Less than High School	31.8%	30.6%	-0.012	5.3%	4.9%	-0.004
High School	67.7%	71.9%	0.042	4.1%	4.9%	0.008
Some College & Associate Degree	64.7%	59.8%	-0.049	3.3%	3.2%	-0.002
Bachelor's Degree and Higher	70.5%	86.3%	0.158	0.8%	1.0%	0.002
Age 25-54						
Less than High School	69.4%	69.3%	-0.001	3.9%	4.7%	0.008
High School	85.0%	82.5%	-0.025	14.7%	16.6%	0.019
Some College & Associate Degree	87.0%	89.7%	0.027	12.2%	10.7%	-0.015
Bachelor's Degree and Higher	95.2%	91.0%	-0.042	17.0%	15.2%	-0.018
Age 55-64						
Less than High School	47.4%	33.1%	-0.143	2.1%	1.7%	-0.005
High School	65.4%	56.2%	-0.092	6.1%	5.4%	-0.007
Some College & Associate Degree	66.6%	65.8%	-0.008	4.0%	4.0%	0.001
Bachelor's Degree and Higher	79.1%	73.8%	-0.052	4.2%	4.5%	0.003
Age 65+						
Less than High School	14.0%	9.0%	-0.051	2.8%	2.5%	-0.003
High School	18.3%	13.1%	-0.051	6.4%	7.1%	0.007
Some College & Associate Degree	25.1%	20.2%	-0.049	5.2%	4.8%	-0.004
Bachelor's Degree and Higher	27.6%	21.7%	-0.059	7.8%	8.7%	0.009
<b>TOTAL</b>	<b>65.2%</b>	<b>61.8%</b>	<b>-0.034</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.000</b>

Source: Chmura Computation Based on CPS Data

Changes in LFPR and Population Shares: Total, by Age and Education, 2019-2021, South Carolina, Women

	Labor Force Participation Rate			Population Share		
	2019	2021	Change 2019-2021	2019	2021	Change 2019-2021
<b>By Age Group</b>						
Age 16-24	50.6%	54.0%	0.034	12.5%	13.2%	0.007
Age 25-54	74.0%	74.0%	-0.001	46.6%	44.8%	-0.018
Age 55-64	54.8%	55.8%	0.010	16.7%	15.5%	-0.012
Age 65+	13.2%	11.8%	-0.014	24.2%	26.5%	0.023
<b>By Educational Attainment</b>						
Less than High School	25.4%	29.9%	0.045	11.8%	10.9%	-0.010
High School	47.6%	45.4%	-0.022	27.5%	29.7%	0.021
Some College & Associate Degree	55.3%	55.1%	-0.002	29.2%	28.8%	-0.004
Bachelor's Degree and Higher	66.5%	63.4%	-0.031	31.4%	30.7%	-0.007
<b>By Age and Educational Attainment</b>						
Age 16-24						
Less than High School	16.5%	33.0%	0.165	4.0%	3.8%	-0.002
High School	66.1%	62.0%	-0.041	3.0%	4.0%	0.010
Some College & Associate Degree	60.6%	57.4%	-0.032	4.0%	4.3%	0.003
Bachelor's Degree and Higher	82.9%	82.8%	-0.001	1.5%	1.1%	-0.004
Age 25-54						
Less than High School	48.8%	47.5%	-0.013	3.4%	3.1%	-0.003
High School	67.0%	65.6%	-0.014	12.0%	11.6%	-0.004
Some College & Associate Degree	75.7%	75.8%	0.000	13.7%	12.8%	-0.009
Bachelor's Degree and Higher	82.4%	83.0%	0.006	17.6%	17.3%	-0.003
Age 55-64						
Less than High School	29.7%	28.9%	-0.007	1.8%	1.3%	-0.005
High School	48.6%	52.4%	0.038	4.8%	4.8%	0.000
Some College & Associate Degree	54.4%	63.6%	0.092	4.6%	4.4%	-0.002
Bachelor's Degree and Higher	69.1%	59.1%	-0.101	5.4%	5.0%	-0.004
Age 65+						
Less than High School	5.5%	6.5%	0.010	2.6%	2.8%	0.001
High School	10.0%	9.3%	-0.007	7.8%	9.3%	0.015
Some College & Associate Degree	12.8%	12.0%	-0.008	7.0%	7.3%	0.003
Bachelor's Degree and Higher	20.1%	16.9%	-0.032	6.9%	7.3%	0.004
<b>TOTAL</b>	<b>53.2%</b>	<b>52.0%</b>	<b>-0.011</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.000</b>

Source: Chmura Computation Based on CPS Data



## Appendix 3: North Carolina Data

Changes in LFPR and Population Shares: Total, by Age and Education, 1994-2019, North Carolina, All Workers						
	Labor Force Participation Rate			Population Share		
	1994	2019	Change 1994-2019	1994	2019	Change 1994-2019
<b>By Age Group</b>						
Age 16-24	68.4%	54.4%	-0.140	16.6%	13.7%	-0.029
Age 25-54	85.2%	82.2%	-0.030	57.4%	49.0%	-0.083
Age 55-64	55.1%	62.5%	0.075	11.8%	16.4%	0.045
Age 65+	14.0%	18.9%	0.049	14.2%	21.0%	0.068
<b>By Educational Attainment</b>						
Less than High School	47.3%	41.2%	-0.061	24.2%	13.8%	-0.104
High School	72.7%	57.3%	-0.154	32.5%	27.5%	-0.050
Some College & Associate Degree	76.0%	63.5%	-0.124	24.8%	27.7%	0.029
Bachelor's Degree and Higher	80.1%	73.8%	-0.063	18.5%	30.9%	0.125
<b>By Age and Educational Attainment</b>						
Age 16-24						
Less than High School	53.9%	30.0%	-0.238	6.2%	4.7%	-0.015
High School	79.7%	70.5%	-0.092	4.6%	3.9%	-0.007
Some College & Associate Degree	72.5%	62.3%	-0.102	4.8%	4.2%	-0.006
Bachelor's Degree and Higher	86.2%	75.7%	-0.106	1.1%	0.9%	-0.002
Age 25-54						
Less than High School	71.4%	66.0%	-0.055	8.3%	4.9%	-0.034
High School	85.5%	77.1%	-0.084	19.9%	12.1%	-0.078
Some College & Associate Degree	87.2%	84.0%	-0.032	15.6%	12.9%	-0.027
Bachelor's Degree and Higher	90.9%	88.4%	-0.025	13.5%	19.1%	0.056
Age 55-64						
Less than High School	42.1%	42.3%	0.001	3.5%	1.7%	-0.018
High School	58.7%	58.3%	-0.004	4.1%	4.9%	0.009
Some College & Associate Degree	63.6%	65.4%	0.019	2.3%	4.5%	0.022
Bachelor's Degree and Higher	60.3%	70.5%	0.103	2.0%	5.2%	0.032
Age 65+						
Less than High School	11.5%	12.8%	0.013	6.2%	2.5%	-0.037
High School	15.5%	12.9%	-0.025	4.0%	6.6%	0.026
Some College & Associate Degree	15.4%	19.7%	0.043	2.1%	6.1%	0.040
Bachelor's Degree and Higher	17.9%	27.6%	0.097	1.8%	5.7%	0.039
<b>TOTAL</b>	<b>68.7%</b>	<b>61.9%</b>	<b>-0.068</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.000</b>

Source: Chmura Computation Based on CPS Data

<b>Shares of LFPR Changes Attributable to Within-Group LPFR Changes and Changes in Population Composition 1994-2019, North Carolina</b>			
	Overall	Male	Female
<b>Contribution of Within Group Change</b>			
Age 16-24	34.1%	37.4%	30.9%
Age 25-54	25.1%	23.9%	26.9%
Age 55-64	-12.9%	-7.3%	-18.9%
Age 65+	-10.1%	-10.4%	-9.8%
<b>Total Within-Group</b>	<b>36.2%</b>	<b>43.6%</b>	<b>29.1%</b>
<b>Contribution of Population Share Change</b>			
Age 16-24	-0.1%	-1.5%	1.7%
Age 25-54	20.1%	18.5%	21.6%
Age 55-64	9.1%	8.0%	10.2%
Age 65+	54.2%	48.1%	59.6%
<b>Total Population Share</b>	<b>83.2%</b>	<b>73.1%</b>	<b>93.0%</b>
<b>Contribution of Interactions</b>			
Age 16-24	-6.1%	-5.5%	-6.3%
Age 25-54	-3.7%	-3.4%	-4.0%
Age 55-64	-4.9%	-2.8%	-7.1%
Age 65+	-4.8%	-5.0%	-4.6%
<b>Total Interactions</b>	<b>-19.5%</b>	<b>-16.7%</b>	<b>-22.1%</b>
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: Chmura Computation Based on CPS Data

<b>Shares of LFPR Changes Attributable to Within-Group LPFR Changes and Changes in Population Composition 1994-2019, North Carolina</b>			
	Overall	Male	Female
<b>Contribution of Within Group Change</b>			
Less than High School	21.7%	20.1%	28.5%
High School	73.3%	57.6%	101.9%
Some College & Associate Degree	45.3%	39.7%	50.7%
Bachelor's Degree and Higher	17.0%	18.0%	13.8%
<b>Total Within-Group</b>	<b>157.3%</b>	<b>135.3%</b>	<b>194.9%</b>
<b>Contribution of Population Share Change</b>			
Less than High School	-32.7%	-26.1%	-41.7%
High School	2.9%	1.3%	3.6%
Some College & Associate Degree	-3.1%	-2.0%	-4.8%
Bachelor's Degree and Higher	-20.7%	-10.1%	-33.5%
<b>Total Population Share</b>	<b>-53.6%</b>	<b>-36.9%</b>	<b>-76.3%</b>
<b>Contribution of Interactions</b>			
Less than High School	-9.3%	-7.8%	-13.4%
High School	-11.2%	-2.9%	-24.2%
Some College & Associate Degree	5.3%	4.0%	6.6%
Bachelor's Degree and Higher	11.5%	8.4%	12.4%
<b>Total Interactions</b>	<b>-3.7%</b>	<b>1.6%</b>	<b>-18.6%</b>
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: Chmura Computation Based on CPS Data

Changes in LFPR and Population Shares: Total, by Age and Education, 2019-2021, North Carolina, All Workers

	Labor Force Participation Rate			Population Share		
	2019	2021	Change 2019-2021	2019	2021	Change 2019-2021
<b>By Age Group</b>						
Age 16-24	54.4%	54.9%	0.005	13.7%	14.0%	0.003
Age 25-54	82.2%	80.4%	-0.018	49.0%	47.2%	-0.018
Age 55-64	62.5%	60.9%	-0.016	16.4%	16.1%	-0.003
Age 65+	18.9%	19.7%	0.008	21.0%	22.7%	0.018
<b>By Educational Attainment</b>						
Less than High School	41.2%	39.3%	-0.019	13.8%	12.4%	-0.014
High School	57.3%	54.8%	-0.025	27.5%	29.4%	0.019
Some College & Associate Degree	63.5%	59.9%	-0.037	27.7%	26.2%	-0.015
Bachelor's Degree and Higher	73.8%	72.6%	-0.012	30.9%	32.0%	0.010
<b>By Age and Educational Attainment</b>						
Age 16-24						
Less than High School	30.0%	29.9%	-0.002	4.7%	4.0%	-0.007
High School	70.5%	65.4%	-0.051	3.9%	4.1%	0.002
Some College & Associate Degree	62.3%	59.2%	-0.031	4.2%	4.6%	0.004
Bachelor's Degree and Higher	75.7%	82.7%	0.070	0.9%	1.3%	0.005
Age 25-54						
Less than High School	66.0%	63.8%	-0.022	4.9%	4.4%	-0.006
High School	77.1%	74.1%	-0.030	12.1%	12.5%	0.004
Some College & Associate Degree	84.0%	81.1%	-0.029	12.9%	11.8%	-0.011
Bachelor's Degree and Higher	88.4%	88.1%	-0.003	19.1%	18.6%	-0.005
Age 55-64						
Less than High School	42.3%	42.7%	0.004	1.7%	1.4%	-0.003
High School	58.3%	55.3%	-0.030	4.9%	5.3%	0.004
Some College & Associate Degree	65.4%	58.3%	-0.071	4.5%	3.9%	-0.006
Bachelor's Degree and Higher	70.5%	73.0%	0.025	5.2%	5.4%	0.002
Age 65+						
Less than High School	12.8%	11.1%	-0.017	2.5%	2.6%	0.001
High School	12.9%	16.5%	0.036	6.6%	7.5%	0.009
Some College & Associate Degree	19.7%	19.7%	0.000	6.1%	6.0%	-0.001
Bachelor's Degree and Higher	27.6%	26.5%	-0.011	5.7%	6.6%	0.009
<b>TOTAL</b>	<b>61.9%</b>	<b>59.9%</b>	<b>-0.020</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.000</b>

Source: Chmura Computation Based on CPS Data

**Shares of LFPR Changes Attributable to Within-Group LFPR Changes and Changes in Population Composition 2019-2021, North Carolina**

	Overall	Male	Female
<b>Contribution of Within Group Change</b>			
Age 16-24	-3.4%	-3.9%	-3.2%
Age 25-54	43.7%	45.0%	45.1%
Age 55-64	13.2%	6.4%	21.6%
Age 65+	-8.0%	5.0%	-24.9%
<b>Total Within-Group</b>	<b>45.5%</b>	<b>52.5%</b>	<b>38.5%</b>
<b>Contribution of Population Share Change</b>			
Age 16-24	1.3%	-1.0%	1.3%
Age 25-54	18.2%	11.8%	26.9%
Age 55-64	0.1%	-0.2%	0.1%
Age 65+	37.6%	37.8%	37.0%
<b>Total Population Share</b>	<b>57.1%</b>	<b>48.4%</b>	<b>65.3%</b>
<b>Contribution of Interactions</b>			
Age 16-24	-0.1%	0.1%	-0.2%
Age 25-54	-1.6%	-1.3%	-2.0%
Age 55-64	-0.2%	-0.2%	-0.1%
Age 65+	-0.7%	0.6%	-1.5%
<b>Total Interactions</b>	<b>-2.6%</b>	<b>-0.9%</b>	<b>-3.9%</b>
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: Chmura Computation Based on CPS Data

<b>Shares of LFPR Changes Attributable to Within-Group LPFR Changes and Changes in Population Composition 2019-2021, North Carolina</b>			
	Overall	Male	Female
<b>Contribution of Within Group Change</b>			
Less than High School	13.2%	22.6%	-0.8%
High School	33.9%	44.1%	19.0%
Some College & Associate Degree	50.3%	47.7%	52.9%
Bachelor's Degree and Higher	18.5%	2.3%	43.2%
<b>Total Within-Group</b>	<b>115.9%</b>	<b>116.7%</b>	<b>114.4%</b>
<b>Contribution of Population Share Change</b>			
Less than High School	-14.5%	-11.3%	-20.2%
High School	4.4%	0.3%	11.3%
Some College & Associate Degree	1.2%	0.7%	2.6%
Bachelor's Degree and Higher	-5.9%	-4.1%	-8.1%
<b>Total Population Share</b>	<b>-14.8%</b>	<b>-14.5%</b>	<b>-14.4%</b>
<b>Contribution of Interactions</b>			
Less than High School	-1.3%	-2.3%	0.1%
High School	2.4%	3.1%	1.3%
Some College & Associate Degree	-2.7%	-3.0%	-2.5%
Bachelor's Degree and Higher	0.6%	0.1%	1.1%
<b>Total Interactions</b>	<b>-1.1%</b>	<b>-2.2%</b>	<b>0.0%</b>
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: Chmura Computation Based on CPS Data

## Appendix 4: Georgia Data

Changes in LFPR and Population Shares: Total, by Age and Education, 1994-2019, Georgia, All Workers						
	Labor Force Participation Rate			Population Share		
	1994	2019	Change 1994-2019	1994	2019	Change 1994-2019
<b>By Age Group</b>						
Age 16-24	62.0%	52.0%	-0.099	17.3%	14.4%	-0.030
Age 25-54	83.2%	80.8%	-0.024	60.8%	51.7%	-0.091
Age 55-64	56.7%	62.5%	0.058	10.3%	14.9%	0.046
Age 65+	15.9%	19.6%	0.038	11.7%	19.1%	0.074
<b>By Educational Attainment</b>						
Less than High School	47.2%	40.0%	-0.071	25.1%	14.3%	-0.108
High School	71.3%	60.0%	-0.113	30.8%	29.5%	-0.013
Some College & Associate Degree	76.8%	64.7%	-0.121	23.7%	24.8%	0.011
Bachelor's Degree and Higher	83.1%	72.7%	-0.104	20.4%	31.4%	0.109
<b>By Age and Educational Attainment</b>						
Age 16-24						
Less than High School	47.8%	25.4%	-0.224	7.4%	5.2%	-0.022
High School	77.3%	67.4%	-0.100	4.4%	4.3%	-0.001
Some College & Associate Degree	64.7%	62.7%	-0.020	4.3%	3.8%	-0.005
Bachelor's Degree and Higher	83.5%	83.1%	-0.004	1.2%	1.0%	-0.002
Age 25-54						
Less than High School	66.8%	66.5%	-0.002	9.5%	5.1%	-0.044
High School	81.8%	75.9%	-0.060	19.4%	14.4%	-0.050
Some College & Associate Degree	87.9%	82.8%	-0.052	15.9%	12.7%	-0.032
Bachelor's Degree and Higher	89.9%	86.8%	-0.031	16.0%	19.5%	0.035
Age 55-64						
Less than High School	48.2%	45.5%	-0.028	3.0%	1.5%	-0.015
High School	55.6%	60.4%	0.048	3.5%	4.8%	0.013
Some College & Associate Degree	55.4%	60.4%	0.050	2.0%	3.8%	0.018
Bachelor's Degree and Higher	75.2%	71.7%	-0.035	1.7%	4.8%	0.030
Age 65+						
Less than High School	9.7%	12.9%	0.032	5.2%	2.5%	-0.027
High School	20.4%	16.2%	-0.042	3.5%	6.0%	0.025
Some College & Associate Degree	22.0%	18.7%	-0.033	1.5%	4.5%	0.030
Bachelor's Degree and Higher	20.5%	26.5%	0.059	1.5%	6.1%	0.046
<b>TOTAL</b>	<b>69.0%</b>	<b>62.3%</b>	<b>-0.067</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.000</b>

Source: Chmura Computation Based on CPS Data

**Shares of LFPR Changes Attributable to Within-Group LFPR Changes and Changes in Population Composition 1994-2019, Georgia**

	Overall	Male	Female
<b>Contribution of Within Group Change</b>			
Age 16-24	25.8%	30.4%	18.1%
Age 25-54	22.0%	34.0%	2.2%
Age 55-64	-8.9%	-8.4%	-11.2%
Age 65+	-6.6%	-8.2%	-2.0%
<b>Total Within-Group</b>	<b>32.3%</b>	<b>47.9%</b>	<b>7.1%</b>
<b>Contribution of Population Share Change</b>			
Age 16-24	-3.1%	-3.6%	-2.6%
Age 25-54	19.4%	15.5%	25.5%
Age 55-64	8.5%	6.7%	12.3%
Age 65+	58.8%	53.7%	67.9%
<b>Total Population Share</b>	<b>83.6%</b>	<b>72.3%</b>	<b>103.1%</b>
<b>Contribution of Interactions</b>			
Age 16-24	-4.4%	-5.3%	-3.1%
Age 25-54	-3.3%	-5.1%	-0.3%
Age 55-64	-4.0%	-3.3%	-5.8%
Age 65+	-4.2%	-6.6%	-1.0%
<b>Total Interactions</b>	<b>-15.9%</b>	<b>-20.2%</b>	<b>-10.2%</b>
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: Chmura Computation Based on CPS Data



**Shares of LFPR Changes Attributable to Within-Group LPFR Changes and Changes in Population Composition 1994-2019, Georgia**

	Overall	Male	Female
<b>Contribution of Within Group Change</b>			
Less than High School	26.8%	22.6%	38.8%
High School	52.1%	49.1%	71.8%
Some College & Associate Degree	43.0%	29.4%	62.1%
Bachelor's Degree and Higher	31.9%	28.2%	34.0%
<b>Total Within-Group</b>	<b>153.9%</b>	<b>129.3%</b>	<b>206.6%</b>
<b>Contribution of Population Share Change</b>			
Less than High School	-35.3%	-23.7%	-56.3%
High School	0.4%	-2.0%	1.0%
Some College & Associate Degree	-1.3%	0.4%	-5.9%
Bachelor's Degree and Higher	-23.2%	-9.9%	-46.7%
<b>Total Population Share</b>	<b>-59.4%</b>	<b>-35.2%</b>	<b>-107.9%</b>
<b>Contribution of Interactions</b>			
Less than High School	-11.6%	-9.1%	-17.8%
High School	-2.1%	6.0%	-12.5%
Some College & Associate Degree	2.1%	-0.8%	6.9%
Bachelor's Degree and Higher	17.1%	9.7%	24.7%
<b>Total Interactions</b>	<b>5.5%</b>	<b>5.9%</b>	<b>1.3%</b>
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: Chmura Computation Based on CPS Data

Changes in LFPR and Population Shares: Total, by Age and Education, 2019-2021, Georgia, All Workers

	Labor Force Participation Rate			Population Share		
	2019	2021	Change 2019-2021	2019	2021	Change 2019-2021
<b>By Age Group</b>						
Age 16-24	52.0%	50.5%	-0.016	14.4%	14.9%	0.006
Age 25-54	80.8%	80.8%	0.000	51.7%	50.6%	-0.010
Age 55-64	62.5%	64.5%	0.020	14.9%	15.1%	0.002
Age 65+	19.6%	17.4%	-0.022	19.1%	19.4%	0.003
<b>By Educational Attainment</b>						
Less than High School	40.0%	40.2%	0.002	14.3%	13.0%	-0.012
High School	60.0%	57.4%	-0.025	29.5%	29.6%	0.000
Some College & Associate Degree	64.7%	62.7%	-0.019	24.8%	24.9%	0.001
Bachelor's Degree and Higher	72.7%	72.9%	0.002	31.4%	32.5%	0.012
<b>By Age and Educational Attainment</b>						
Age 16-24						
Less than High School	25.4%	26.3%	0.009	5.2%	5.1%	-0.001
High School	67.4%	64.1%	-0.033	4.3%	4.4%	0.001
Some College & Associate Degree	62.7%	56.8%	-0.060	3.8%	4.3%	0.005
Bachelor's Degree and Higher	83.1%	85.7%	0.026	1.0%	1.0%	0.000
Age 25-54						
Less than High School	66.5%	70.3%	0.038	5.1%	4.4%	-0.007
High School	75.9%	75.0%	-0.009	14.4%	13.8%	-0.007
Some College & Associate Degree	82.8%	78.9%	-0.039	12.7%	12.3%	-0.004
Bachelor's Degree and Higher	86.8%	88.1%	0.013	19.5%	20.2%	0.007
Age 55-64						
Less than High School	45.5%	40.2%	-0.052	1.5%	1.4%	-0.001
High School	60.4%	60.8%	0.005	4.8%	4.6%	-0.002
Some College & Associate Degree	60.4%	69.3%	0.088	3.8%	3.8%	0.000
Bachelor's Degree and Higher	71.7%	70.5%	-0.012	4.8%	5.3%	0.005
Age 65+						
Less than High School	12.9%	12.5%	-0.004	2.5%	2.2%	-0.003
High School	16.2%	15.2%	-0.010	6.0%	6.8%	0.008
Some College & Associate Degree	18.7%	17.9%	-0.008	4.5%	4.4%	-0.001
Bachelor's Degree and Higher	26.5%	21.3%	-0.052	6.1%	6.0%	-0.001
<b>TOTAL</b>	<b>62.3%</b>	<b>61.5%</b>	<b>-0.007</b>	<b>100.0%</b>	<b>100.0%</b>	<b>0.000</b>

Source: Chmura Computation Based on CPS Data

**Shares of LFPR Changes Attributable to Within-Group LFPR Changes and Changes in Population Composition 2019-2021, Georgia**

	Overall	Male	Female
<b>Contribution of Within Group Change</b>			
Age 16-24	30.3%	10.2%	42.4%
Age 25-54	1.1%	-19.3%	9.0%
Age 55-64	-39.6%	-45.0%	-26.2%
Age 65+	56.5%	137.1%	6.8%
<b>Total Within-Group</b>	<b>48.3%</b>	<b>83.0%</b>	<b>32.0%</b>
<b>Contribution of Population Share Change</b>			
Age 16-24	7.6%	26.8%	1.2%
Age 25-54	25.6%	43.1%	16.1%
Age 55-64	0.0%	-2.9%	-0.8%
Age 65+	17.0%	-43.9%	49.7%
<b>Total Population Share</b>	<b>50.1%</b>	<b>23.2%</b>	<b>66.2%</b>
<b>Contribution of Interactions</b>			
Age 16-24	1.2%	0.6%	0.7%
Age 25-54	0.0%	0.5%	-0.1%
Age 55-64	-0.5%	-2.8%	0.9%
Age 65+	0.9%	-4.4%	0.4%
<b>Total Interactions</b>	<b>1.6%</b>	<b>-6.1%</b>	<b>1.8%</b>
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: Chmura Computation Based on CPS Data

<b>Shares of LFPR Changes Attributable to Within-Group LPFR Changes and Changes in Population Composition 2019-2021, Georgia</b>			
	Overall	Male	Female
<b>Contribution of Within Group Change</b>			
Less than High School	-3.9%	42.5%	-13.6%
High School	100.2%	57.1%	99.1%
Some College & Associate Degree	64.5%	78.5%	65.9%
Bachelor's Degree and Higher	-7.7%	-36.7%	8.0%
<b>Total Within-Group</b>	<b>153.0%</b>	<b>141.4%</b>	<b>159.4%</b>
<b>Contribution of Population Share Change</b>			
Less than High School	-36.9%	-15.7%	-57.4%
High School	0.1%	-2.4%	7.3%
Some College & Associate Degree	-0.2%	-4.1%	2.1%
Bachelor's Degree and Higher	-16.3%	-16.9%	-17.0%
<b>Total Population Share</b>	<b>-53.3%</b>	<b>-39.2%</b>	<b>-65.0%</b>
<b>Contribution of Interactions</b>			
Less than High School	0.3%	-1.3%	2.0%
High School	0.1%	-2.5%	4.9%
Some College & Associate Degree	0.1%	2.9%	-1.5%
Bachelor's Degree and Higher	-0.3%	-1.3%	0.3%
<b>Total Interactions</b>	<b>0.3%</b>	<b>-2.2%</b>	<b>5.6%</b>
<b>Total</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

Source: Chmura Computation Based on CPS Data