



The Effects of the COVID-19 Pandemic on Maine's Labor Market and Workforce

Introduction

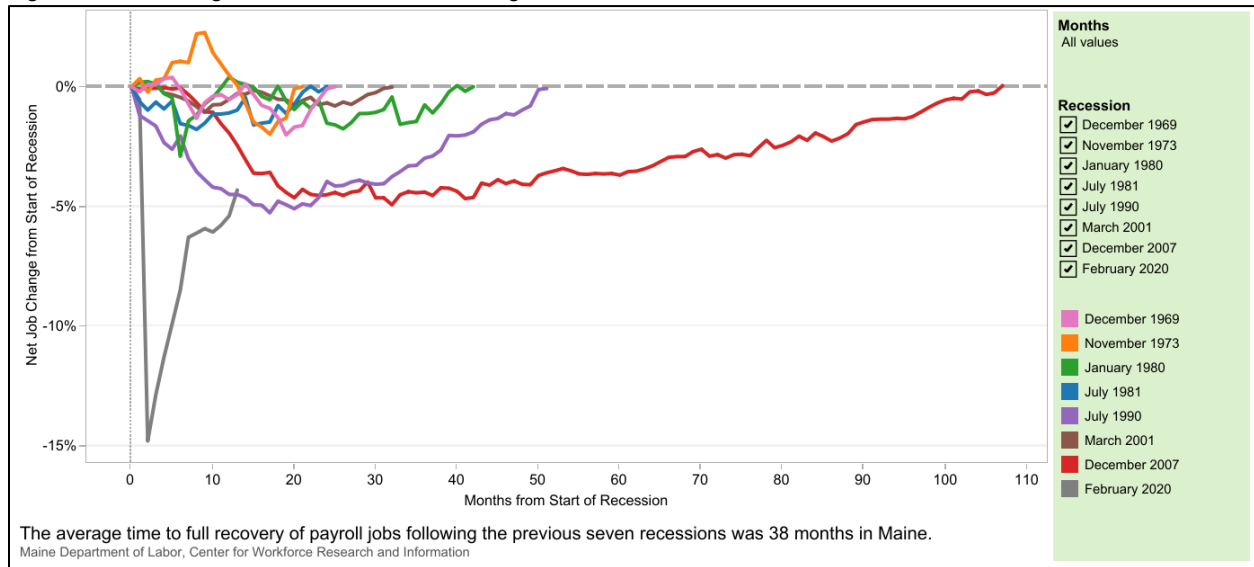
The COVID-19 pandemic led to unprecedented disruptions in the labor market with widespread job losses and dramatically changed how and where jobs are performed. These disruptions were spread throughout the labor market, though persistent job losses have been concentrated in a few sectors. Workers in certain occupations were able to transition to telework while workers in others were not. This article uses a variety of data sources to examine the pandemic's impact on the labor market in Maine, first by putting it in the context of past recessions, then by assessing telework suitability across occupations, and finally by exploring the differential job losses that occurred during the pandemic by sector and by gender and educational attainment. Taken together, these data sources shed light on the uneven impact of, and ongoing recovery from, the COVID-19 pandemic on workers and employers.

The COVID-19 Pandemic Recession in the Context of Past Recessions

The unique circumstance of the pandemic-induced recession differentiates it from past recessions in terms of severity, sectors affected, and pace of recovery. Job losses during the Great Recession that began in 2007 were severe, and the recovery from those losses was protracted; it took nearly nine years for total nonfarm jobs to return to prerecession levels. In contrast, the recession that began in February 2020 resulted in sharper initial job losses than

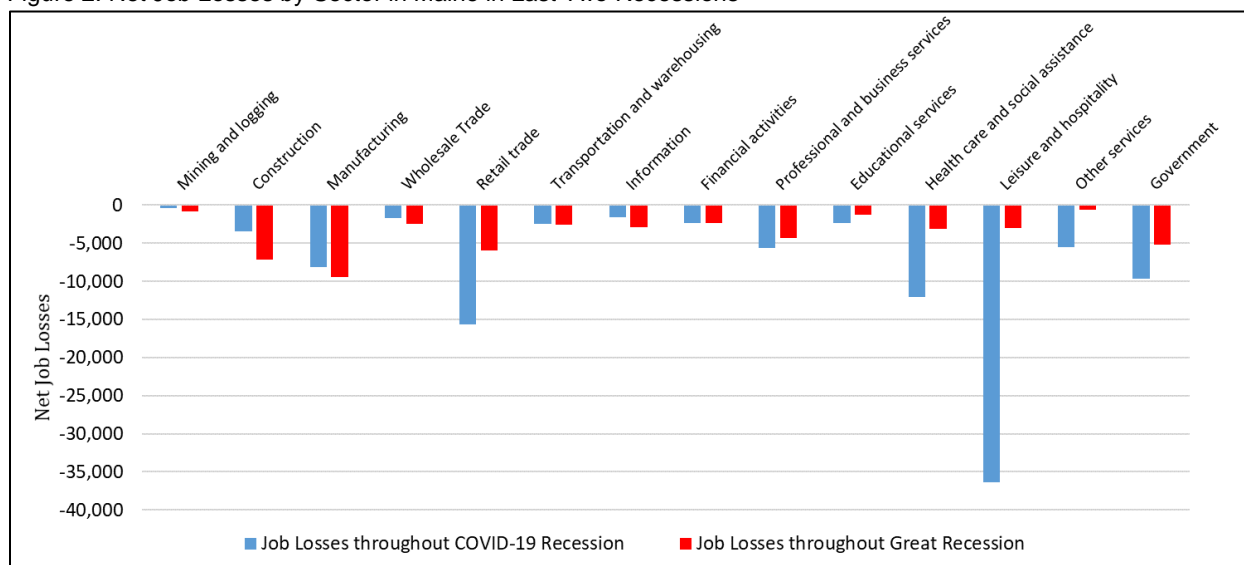
any of the past seven recessions, but a recovery that began at a much quicker pace. At the height of the Great Recession, approximately 5 percent of nonfarm jobs were lost. Approximately 15 percent of jobs were lost at the early onset of the pandemic, and jobs remain 4.3 percent below pre-pandemic levels as of April 2021 (Figure 1).

Figure 1: Job Change in Maine over the Last Eight Recessions



During the Great Recession, the construction and manufacturing sectors experienced the most substantial job losses as demand for housing and goods decreased. The total number of manufacturing jobs never fully recovered to levels seen before the Great Recession. While the construction sector did shed jobs in the spring of 2020, it has since rebounded with total jobs above pre-pandemic levels. The manufacturing sector too has recovered quickly with total staffing levels near, though slightly below, pre-pandemic levels (Figure 2). The sudden switch to remote work for many has decoupled place of work from place of residence, leading some to seek housing away from densely populated urban areas. This has led to increased demand for new residential construction in Maine. Demand for construction also increased because of renovation projects as people spent more time at home. During the COVID-19 recession, job losses have been concentrated in leisure and hospitality, retail trade, educational services (public and private, K–12, and higher education) and health care and social assistance.ⁱ

Figure 2: Net Job Losses by Sector in Maine in Last Two Recessions



Source: Maine Department of Labor, Center for Workforce Research and Information, Current Employment Statistics. <https://www.maine.gov/labor/cwri/ces.html>

Notes: Net job losses calculated using the minimum monthly job total by sector during the recession and subtracting the maximum monthly job total by sector for the time period prior to the recession.

Telework

The impact of the pandemic on employment differs from other periods of economic disruption not only in the pace of job loss and recovery, but also in the way it transformed how workers perform their jobs. Public safety measures associated with the pandemic, such as social distancing, led to the rapid implementation of telework across many, but not all, occupations. Telework flexibility may have prevented some pandemic-related job loss, but access to telework was unequal across occupations.

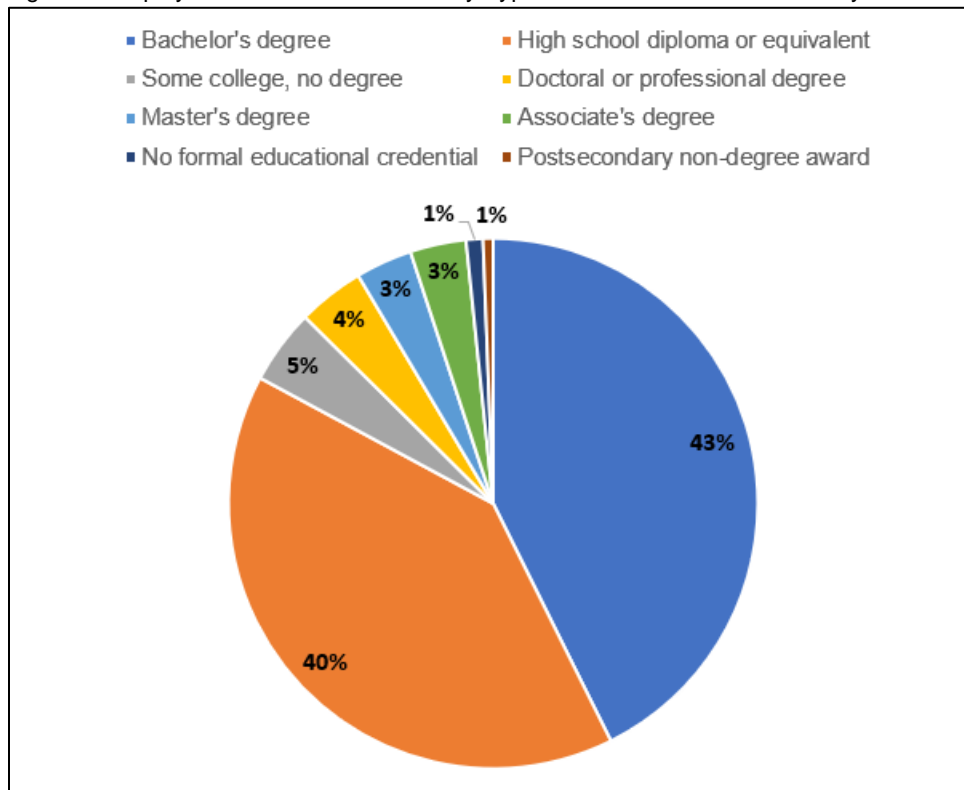
Using an occupational classification method created by Jonathan I. Dingel and Brent Neiman (2020) and Occupational Employment and Wage Statistics data, we identified over 172,000 Maine jobs for which telework may be substituted for in-person work; however, telework likely is not possible for over 400,000 additional Maine jobs (Table 1). Telework-suited jobs appear in management, business and financial, architecture and engineering, sales, office and administrative support, and education- and training-related occupations. Occupations in which goods or services are produced or delivered in person, including in production, construction, installation and repair, direct-service health care, and food service-related occupations were identified as not suited to telework. Many of the occupations identified as suited for telework are performed in an office environment and often require higher levels of educational attainment or skills for entry.

Major Occupation Group	Employment Suited to Telework
11 Management	26,992
13 Business and Financial Operations	16,060
15 Computer and Mathematical	12,380
17 Architecture and Engineering	5,544
19 Life, Physical, and Social Science	1,963
21 Community and Social Service	2,175
23 Legal	3,380
25 Education, Training, and Library	26,830
27 Art, Design, Entertainment, Sports, and Media	5,644
29 Healthcare Practitioners and Technical	1,022
31 Healthcare Support	278
33 Protective Service	185
35 Food Preparation and Serving Related	0
37 Building and Grounds Cleaning and Maintenance	0
39 Personal Care and Service	5,010
41 Sales and Related	9,810
43 Office and Administrative Support	55,175
45 Farming, Fishing, and Forestry	45
47 Construction and Extraction	0
49 Installation, Maintenance, and Repair	30
51 Production	136
53 Transportation and Material Moving	0
Total	172,659

Source: Maine Department of Labor, Center for Workforce Research and Information, *Occupational Employment and Wage Statistics*. <https://www.maine.gov/labor/cwri/oes.html>. Classification of occupations for which telework is possible is from Dingel and Neiman (2020).

Among the jobs identified as suited to telework, about 59 percent typically require educational attainment beyond a high school diploma, and about 51 percent require a bachelor's degree or higher for entry (Figure 3). There were no jobs in the construction and extraction, food service, buildings and grounds cleaning, and maintenance and transportation occupations identified as suited to telework. The overwhelming majority of jobs in protective service, installation maintenance and repair, and farming, fishing, and forestry occupations were also identified as not suited to telework.

Figure 3: Employment Suited to Telework by Typical Education Needed for Entry



Source: Typical education needed for entry for detailed occupations data comes from the U.S. Bureau of Labor Statistics, *Occupational Projections, Education and Training Assignments by Detailed Occupation* (<https://www.bls.gov/emp/tables/education-and-training-by-occupation.htm>).

Between July and September of 2020, the U.S. Bureau of Labor Statistics conducted a national survey of businesses to better understand how their operations were affected by the pandemic. The majority of Maine businesses, 57 percent, reported having no telework arrangements either before or during the pandemic, while about 27 percent of businesses reported that they increased telework during the pandemic, accounting for approximately 263,000 jobs in Maine.ⁱⁱ An additional 17 percent of businesses reported having some telework arrangements already in place before the pandemic.

<i>Area</i>	<i>Percentage of establishments</i>	<i>Number of establishments</i>	<i>Percentage of employment in establishments</i>	<i>Employment in establishments</i>
Increased telework arrangements				
United States	30.9%	2,611,007	54.3%	68,550,503
Maine	27.1%	12,003	50.5%	263,059
No change in existing telework arrangements				
United States	17.6%	1,489,250	9.8%	12,400,849
Maine	16.8%	7,468	10.6%	55,067
No telework at this location both before and after the coronavirus pandemic				
United States	52.3%	4,417,171	36.9%	46,555,019
Maine	56.7%	25,148	39.3%	204,717

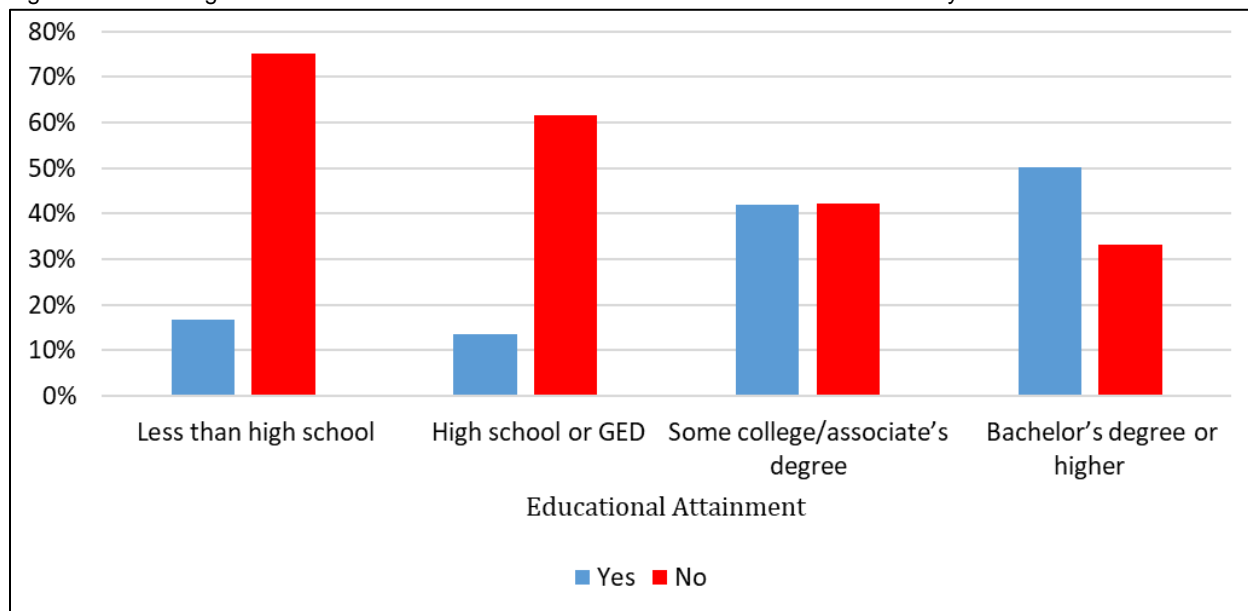
Source: U.S. Bureau of Labor Statistics, Business Response Survey, State Table 14. <https://www.bls.gov/brs/2020-results.htm>

Notes: These data were collected from July 20 through September 30, 2020. U.S. BLS notes: The reference period for the survey was from January 1, 2020 (before the pandemic) through the date that the survey was completed. The data were collected from private-sector establishments only; government establishments were not surveyed. As a result, the estimates of establishments and employment refer to private-sector establishments and employment.

The U.S. Census Bureau implemented a new, experimental Household Pulse Survey to quickly collect information about the impact of the pandemic on households.ⁱⁱⁱ Data collected between February 17 and March 1, 2021, show that 34 percent of households in Maine reported that at least one adult had substituted some or all of their in-person work for telework, which was similar to the national average of 36 percent. This data points to a dramatic change in work environments that persists one year into the pandemic, with one-third of households with an adult working in a different location, usually their home.

According to the February 17–March 1, 2021 Household Pulse Survey, Maine workers with higher levels of educational attainment were substantially more likely to report that they substituted telework for in-person work (Figure 4). Half of all workers with a bachelor’s degree or higher reported teleworking, while less than 15 percent of workers with a high school diploma, GED, or lower level of educational attainment reported teleworking. These responses mirror the occupational suitability to telework findings discussed earlier: occupations that typically require a higher level of educational attainment for entry were more suited for telework.

Figure 4: Percentage of Adults Who Substituted Some/All in-Person Work for Telework by Education Level



Source: U.S. Census Bureau Household Pulse Survey, Week 25. (<https://www.census.gov/programs-surveys/household-pulse-survey/data.html>). Data collected from February 17 through March 1, 2021

Note: Percentage Yes and No columns will not sum to 100% due to households that did not report the information.

Many jobs quickly switched to telework in March 2020, but the data presented here show that the majority of private Maine employers did not implement telework before or during the pandemic. Workers in occupations suited to telework were more likely have higher levels of educational attainment and were more likely to be insulated from the severe job losses of spring 2020, which were primarily concentrated within sectors not suited for telework.

Job Losses and Recovery in Maine by Sector, Gender, and Educational Attainment

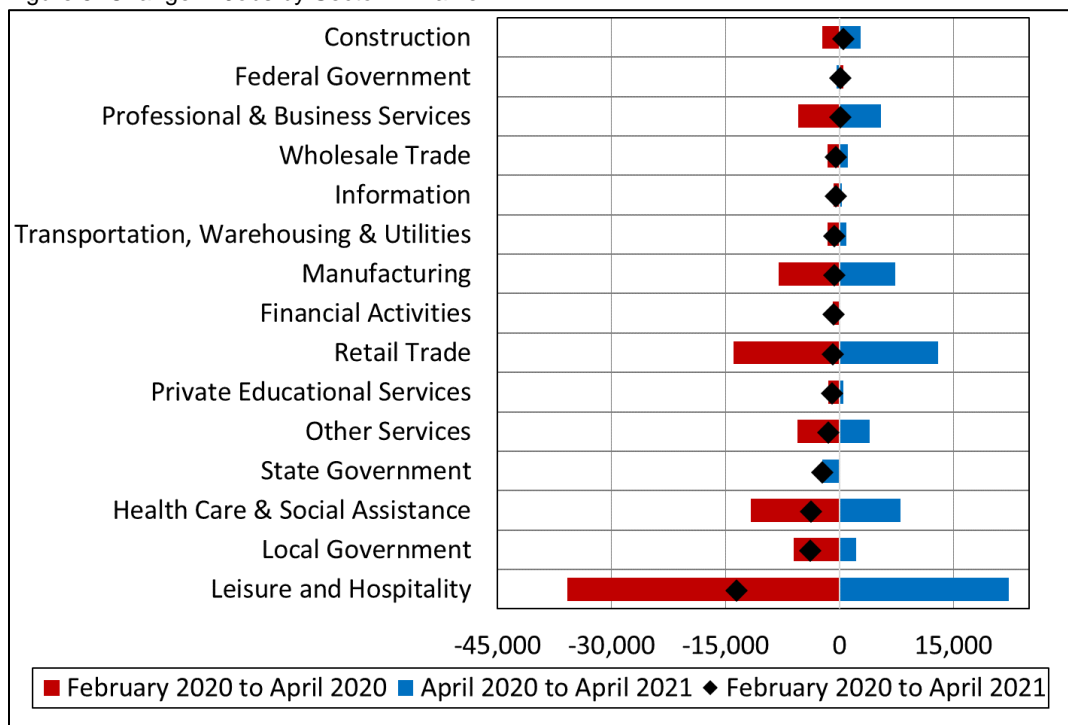
A total of 94,500 nonfarm jobs were lost in Maine from February to April 2020. The 545,400 nonfarm jobs in April was the lowest reported since October 1996. Because of the nature of the COVID-19 pandemic's restrictions, including social-distancing requirements, these losses were concentrated in sectors of the economy that typically require close contact with customers, clients, students, or coworkers. The leisure and hospitality, health care and social assistance and educational services (public and private, K–12 and higher education) sectors had the greatest net job losses after 14 months.

Nearly 50 percent of Maine's leisure and hospitality jobs were lost from February to April 2020, compared to 5 percent to 20 percent of jobs lost in most other sectors. Healthcare and social assistance providers, including childcare, and offices of dentists, chiropractors, and physical or massage therapists, closed or operated at a reduced capacity during the pandemic. Reductions in state and local government jobs occurred primarily in public schools and colleges due to the suspension or reduction of in-person learning, as was also the case in private educational services. As classes moved to online and hybrid models, the number of support staff at schools

and colleges was reduced. The retail environment has also been affected in many ways, including a shift to online shopping and an increased demand for groceries as more consumption took place at home.

A jobs recovery began in May 2020 and accelerated in June before gradually slowing throughout the fall. The recovery gained momentum again in early 2021 as the state added 9,600 jobs in the first four months of the year. Through April 2021, the total number of nonfarm jobs had increased 65,400 from a year prior, when the pandemic first forced many workplaces to close or reduce operations (Figure 5). The largest gains over the year were in the sectors that had the greatest job losses at the outset of the pandemic: leisure and hospitality, retail trade, health care and social assistance, and manufacturing.

Figure 5: Change in Jobs by Sector in Maine



Source: Maine Department of Labor, Center for Workforce Research and Information, Current Employment Statistics. <https://www.maine.gov/labor/cwri/ces.html>

Despite these gains, jobs remained down compared to the year prior in the most affected sectors. Overall, there were 4.6 percent fewer jobs than 14 months prior. This was similar to, but slightly lower than, the national net decrease of 5.4 percent of jobs over the same time. Some sectors, including the construction and professional and business services sectors, have fully recovered; retail trade, manufacturing, and a few other sectors have nearly returned to prepandemic staffing levels.

Differential Job Loss and Recovery Patterns by Gender and Educational Attainment

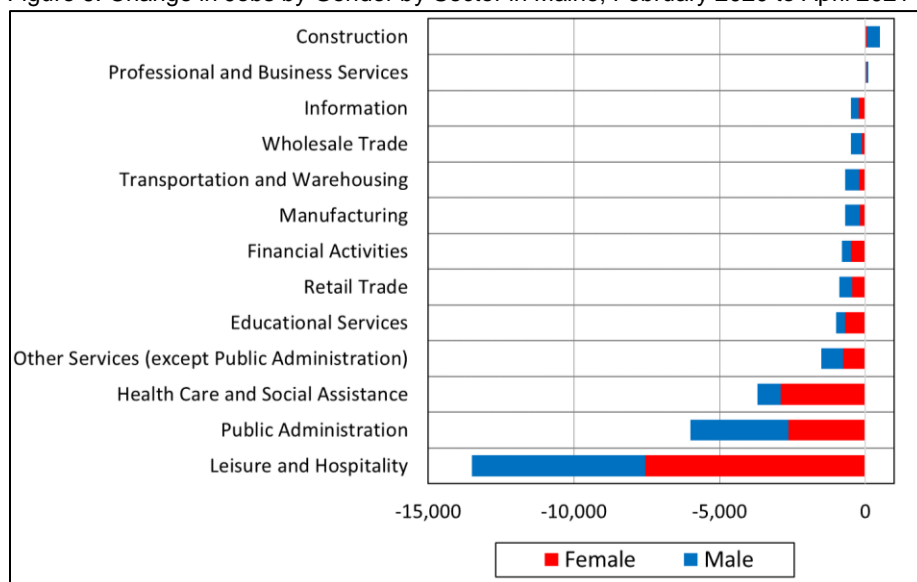
Rates of job loss and subsequent recovery differ across demographic groups. Women have experienced higher rates of job loss than men, and job recovery to date is uneven across sectors. Three data sources were employed to better understand these dynamics: Maine’s Current Employment Statistics (CES) data, the U.S. Census Bureau’s Quarterly Workforce Indicators (QWI), and continued unemployment insurance claims from the Maine Bureau of Unemployment Compensation.

First, QWI data were used to determine the share of employment by industry and by gender and educational attainment using annual average employment counts from the second quarter of 2019 through the first quarter of 2020. These shares by demographic characteristic were then applied to monthly CES job estimates from February 2020 to April 2021.

Unemployment insurance claims, which include demographic characteristics of claimants such as gender and educational attainment, were also used. For this analysis, we included continued unemployment insurance claims from the regular state unemployment system, state extended benefits (available during periods of high unemployment), and temporary federal unemployment programs established under the CARES Act (Pandemic Unemployment Assistance and Pandemic Emergency Unemployment Compensation).

From February 2020 through April 2021, there was a net decrease of 29,200 jobs across sectors. Of that, using QWI employment shares by gender, we estimate that 16,100 jobs were lost by women and 13,100 by men (Figure 6). This 55 to 45 percent disparity is explained by the fact that women held the majority of wage and salary jobs in sectors most affected by the pandemic: leisure and hospitality, educational services (public and private, K–12 and higher education), and health care and social assistance.

Figure 6: Change in Jobs by Gender by Sector in Maine, February 2020 to April 2021



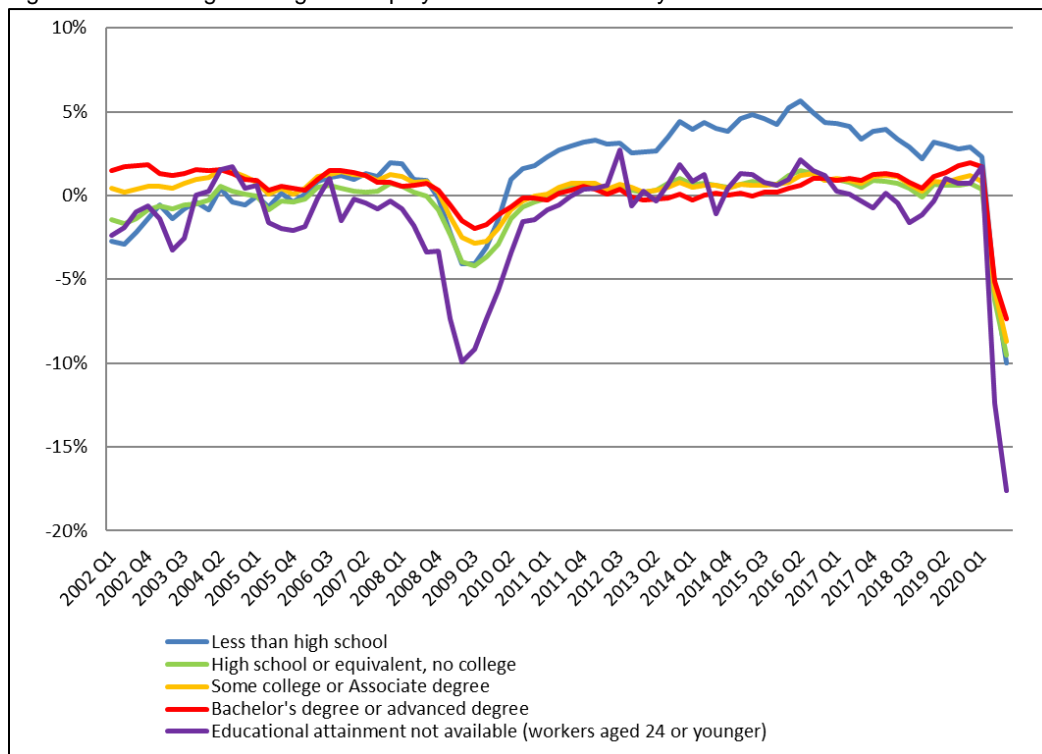
Source: Maine Department of Labor, Center for Workforce Research and Information, Current Employment Statistics. <https://www.maine.gov/labor/cwri/ces.html>

Share of employment by gender obtained from the Census Bureau Quarterly Workforce Indicators

Along with the decrease in jobs largely driven by reduced labor demand, labor supply sharply contrasted during the pandemic. The share of the population age 16 and over in the labor force remains 2.5 percentage points lower than in February 2020, although it has risen 1.5 points from spring 2020 to spring 2021. If labor force participation as of April 2021 matched that of 14 months earlier, 28,300 additional people would be in the labor force. Multiple pandemic-related factors are contributing to the decrease in labor force participation including fewer available job openings, personal safety concerns, school closures and hybrid learning models, and a lack of childcare.^{iv}

The QWI data provides information on jobs by educational attainment for workers age 25 and over. It does not provide that information for younger workers because many have not yet completed their high school or college education. At 17.6 percent, workers under 25 experienced the sharpest job reduction in the year between the third quarter of 2019 and the third quarter of 2020. Among those age 25 and over, the number of jobs was down 10 percent for those who had not attained a diploma, 9.5 percent for those with a high school diploma or equivalent, 8.7 percent for those with some college or an associate’s degree, and 7.4 percent for those with a bachelor’s degree or higher. Because young people are not included, the decreases cited for each level of education understate the total. That is especially the case for those whose highest level of attainment was a high school diploma or no diploma.

Figure 7: Percentage Change in Employment over the Year by Educational Attainment



Source: Census Bureau Quarterly Workforce Indicators, data from 2001 Q1 through 2020 Q3

More than in other sectors, staffing in the leisure and hospitality and retail trade sectors is more concentrated among young people under 25 and those with a diploma or less. During the 12-month period leading up to the pandemic, more than half of workers in the leisure and hospitality and retail trade sectors were under 25 or had a high school diploma or no diploma. Staffing in health care and social assistance, educational services, and professional and business services is less concentrated among young people and more concentrated among those with some college or a degree.

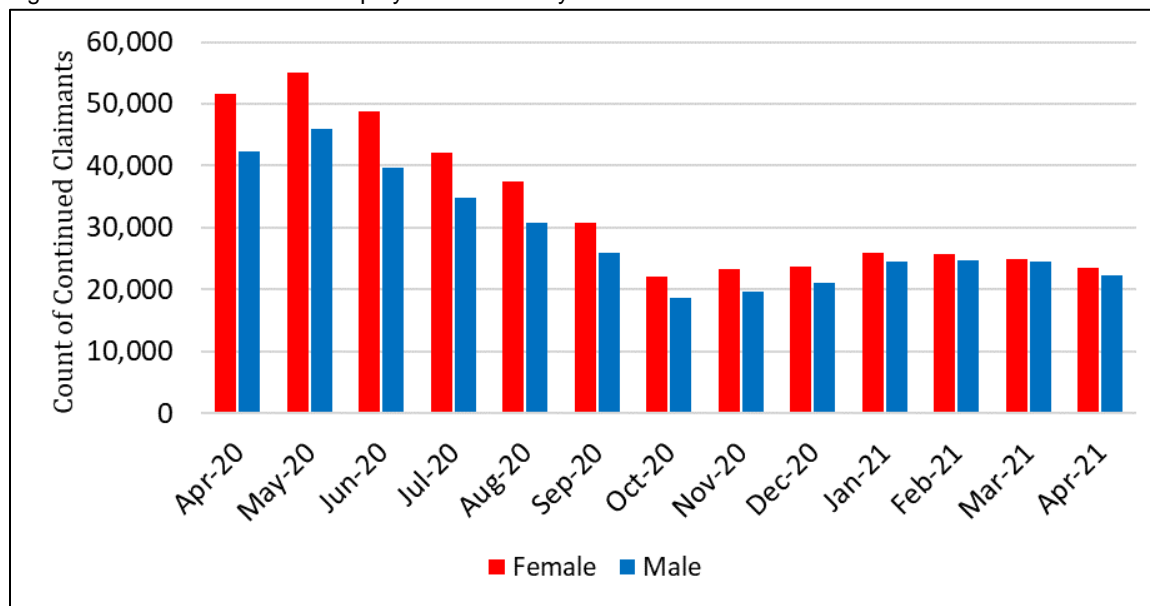
Despite initial declines across levels of educational attainment, job losses have persisted in greater numbers for younger workers and those with lower levels of educational attainment. Assuming that the staffing of industries by education has not changed from the 12-month period just before the pandemic, there would be about 5,320 (7.3%) fewer jobs among those under 25, 2,300 (5%) fewer among those with no high school diploma, 7,240 (4.5%) fewer among those with a high school diploma, 7,970 (4.6%) fewer among those with some college or associate's degree, and 6,080 (4.3%) fewer among those with a bachelor's degree or higher.

The reality, though, is that the staffing composition within industries has changed in ways that we cannot yet measure. Layoffs in educational services were more likely among bus drivers, crossing guards, cafeteria workers, janitorial and maintenance staff, and others who generally have lower levels of educational attainment than teachers and administrators, who were not laid off in large numbers. Similar patterns occurred in other industries: servers and housekeepers were laid off in larger proportions than managers in restaurants and hotels, and daycare workers were laid off in larger numbers than nurses in healthcare and social assistance.

Unemployment Insurance Claims by Gender and Educational Attainment

Claims from Maine's unemployment insurance system depict a similar pattern of job loss as shown in the preceding analysis. Since April 2020, 55 percent of claimants for unemployment insurance across all state and federal programs were women. The gender gap among claimants peaked in June 2020 with women making up 57 percent of total claimants, which gradually decreased to 51 percent in spring of 2021 (Figure 8).

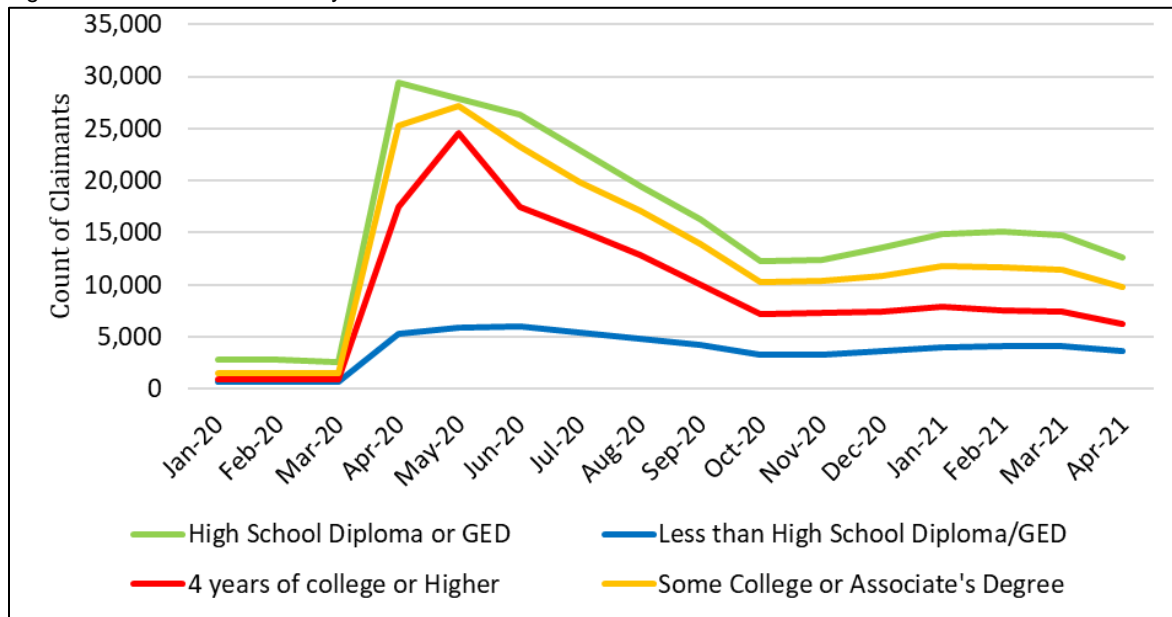
Figure 8: Maine Continued Unemployment Claims by Gender



Source: Maine Department of Labor, Bureau of Unemployment Compensation. Program to Measure Insured Unemployed Statistics (PROMIS). <https://www.maine.gov/labor/cwri/ui1.html>. These data come from a monthly snapshot of claimants filing a continued claim in any program described above, during the week that includes the 12th day of the month.

The unemployment claims data align with our earlier analysis with respect to job losses by educational attainment as well. However, unemployment insurance claims data may not capture certain labor market dynamics, for example, young people and those with lower educational attainment may be less likely to have the work history to qualify for benefits and therefore less likely to appear in the data. As such, better-educated people may be overrepresented in claims data relative to those with less education. The number of claimants with four years of college or higher decreased from 24,600 in May to just over 7,000 by October. Over the same period, the number of claimants with a high school diploma or less filing a continued claim decreased from about 34,000 to 15,500 (Figure 9). While the reduction in the number of claimants with lower levels of educational attainment indicates robust labor market recovery, the recovery has not occurred as quickly for this group.^v

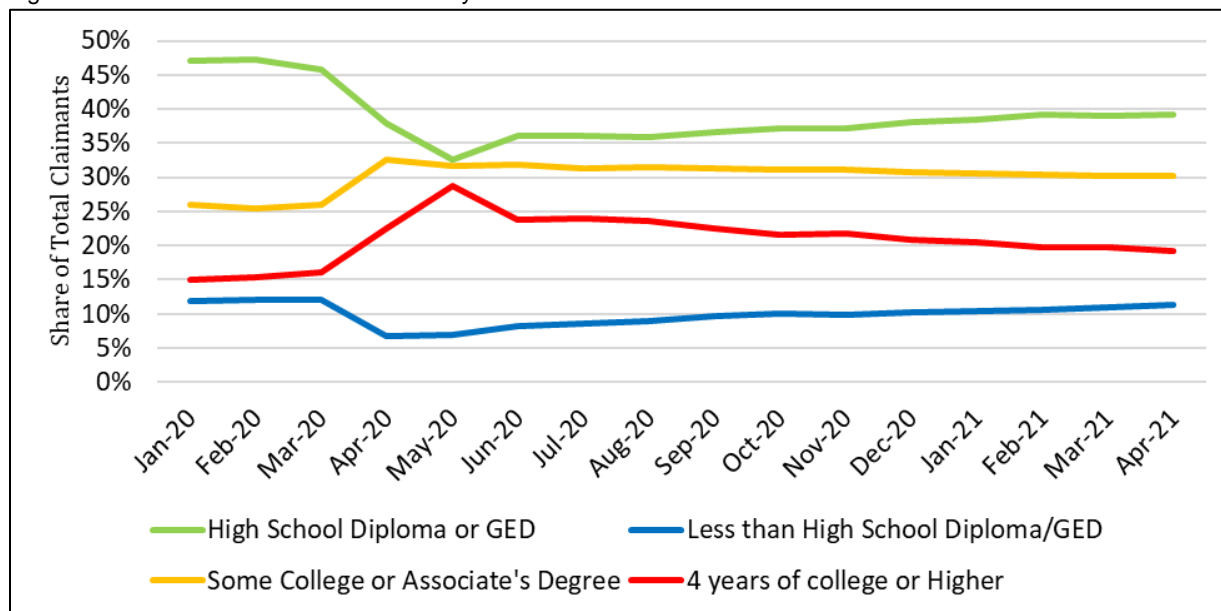
Figure 9: Count of Claimants by Educational Attainment



Source: Maine Department of Labor, Bureau of Unemployment Compensation. Program to Measure Insured Unemployed Statistics (PROMIS). <https://www.maine.gov/labor/cwri/ui1.html>. These data come from a monthly snapshot of claimants filing a continued claim in any program described above, during the week that includes the 12th day of the month.

The share of the total claimant population with four years of college or higher quickly increased from about 15 percent to 25 percent during the early months of the pandemic (Figure 10). Throughout the economic recovery that followed, the share of the total claimant population with four years of college or higher decreased while the share of claimants with a high school diploma or no diploma continued to climb, indicating that joblessness is persisting in this group at a higher rate than those with higher levels of educational attainment.

Figure 10: Distribution of Total Claimants by Educational Attainment



Source: Maine Department of Labor, Bureau of Unemployment Compensation. Program to Measure Insured Unemployed Statistics (PROMIS). <https://www.maine.gov/labor/cwri/ui1.html> These data come from a monthly snapshot of claimants filing a continued claim in any program described above, during the week that includes the 12th day of the month.

Implications

While the labor market recovery to date has been swift, substantial employment gaps remain compared to the period before the pandemic. Some of these employment gaps may persist in the long run, while other industries may see employment growth. Ice at al. (2021) identified how some potential long-term effects induced by the pandemic could change the landscape of employment in the US Bureau of Labor Statistics 10-year employment projections. These long-term effects would require some workers and employers to reevaluate their position in the economy.

One such example is the extent to which telework becomes a permanent part of the work environment for the types of jobs identified above. The permanent adoption of telework may result in decreased demand for commercial office spaces, as well as for a variety goods and services typically consumed by a commuting workforce near their place of work. This could affect coffee shops and restaurants, dry cleaners, fitness centers, and business that supply cleaning, construction, maintenance and repair services, serving clients with commercial workspaces. Workers permanently incorporating telework may reallocate spending away from centralized business districts. These changes in demand for goods and services would lead to longer-term reductions in demand for labor working in the provision of such goods and services. Some of this spending could be reallocated toward home renovations and a similar bundle of goods and services concentrated around the place of residence rather than place of employment for remote workers.

The continued labor market recovery of sectors most affected will depend upon the extent to which consumers and workers reengage in economic activities to the same capacity as before

the pandemic. The experience of the public health crisis could lead to other long-term economic changes if consumers prefer to avoid interpersonal contacts, incorporating a permanent substitution of e-commerce for in-person retail shopping and a reduction in spending on travel, hotels, restaurants and bars, at movie theaters, concerts, museums, sporting events, and casinos. Some workers, particularly those affected by job loss or who feel at risk at their place of work, will permanently alter their labor supply decision and seek to transition away from the sectors affected most. While leisure and business travel have recovered substantially, the continued use of virtual conferences and meetings may lead to long-lasting reductions in demand for business travel and related services. All of these potential changes could lead to longer-term reductions in demand for labor and affected workers may need to find employment in other sectors of the economy and may seek additional training or education to facilitate this transition.

While some industries may see long-term declines in employment due to the pandemic, other industries may experience employment gains. Research and development in the physical, engineering, and life sciences, and pharmaceutical and medicine manufacturing are industries that may see increases in employment. Continued integration of telework could lead to increased demand for certain skills in the labor market including increased demand for information technology and related occupations (Ice et al. 2021).

Conclusion

The COVID-19 pandemic led to unprecedented labor market disruptions in Maine, resulting in severe job losses and changes in how and where work is performed. Many jobs have since been regained, but many people remain jobless. Some workers have returned to the office, while others are permanently incorporating remote work. Many of the long-term effects of the pandemic on the labor market are not yet clear. Across data sources, a few patterns have emerged: sectors that rely on in-person interactions experienced the greatest number of net job losses over the past 14 months. Job losses have not affected men and women equally, and labor force participation has still not returned to its prepandemic level. Finally, individuals with higher levels of educational attainment appear to have experienced less economic hardship, either due to having an occupation better suited to telework or more quickly finding re-employment after initial layoffs.

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ⁱ The pandemic created a difficult environment for data collection and estimation which affected the Current Employment Statistics data program. Employer response rates to the monthly payroll survey were lower during the early months of the pandemic and preliminary estimates from April through December 2020 experienced substantial revision following annual benchmarking in early 2021 to the universe of covered employment derived from the Quarterly Census of Employment and Wages. For more information, see https://www.maine.gov/labor/cwri/blogs/2021_workforce_data_revisions.pdf

ⁱⁱ Businesses that increased telework did not necessarily offer telework arrangements to all employees.

ⁱⁱⁱ The Census Bureau notes that experimental data products may not meet the data quality standards of other Census Bureau data products. Some estimates in the experimental household pulse survey may be particularly imprecise with larger standard errors compared to other published Census Bureau data products. For more information, please see <https://www.census.gov/data/experimental-data-products.html>

^{iv} The labor force includes those who are employed and those who are not employed but are actively seeking and available for work—the unemployed. Retired and other people not employed who are not seeking or available for work are not in the labor force and not counted as unemployed.

^v It is believed that a substantial number of claims filed since the beginning of the COVID-19 pandemic involve imposter fraud and are likely included in these counts. The volume of fictitious claims filed was particularly high in May of 2020. Educational attainment information is self-reported. Claimants not reporting educational attainment information are not included in these tabulations.

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