

Maine Policy Review

Volume 30
Issue 2 *Impacts of COVID-19 Pandemic*

2021

Effect of the COVID-19 Pandemic on the Labor Market in 2020

Philip Trostel
University of Maine, philip.trostel@maine.edu

Follow this and additional works at: <https://digitalcommons.library.umaine.edu/mpr>

Recommended Citation

Trostel, Philip. "Effect of the COVID-19 Pandemic on the Labor Market in 2020." *Maine Policy Review* 30.2 (2021) : 26 -33, <https://digitalcommons.library.umaine.edu/mpr/vol30/iss2/4>.

This Article is brought to you for free and open access by DigitalCommons@UMaine.

Effect of the COVID-19 Pandemic on the Labor Market in 2020

by Philip Trostel

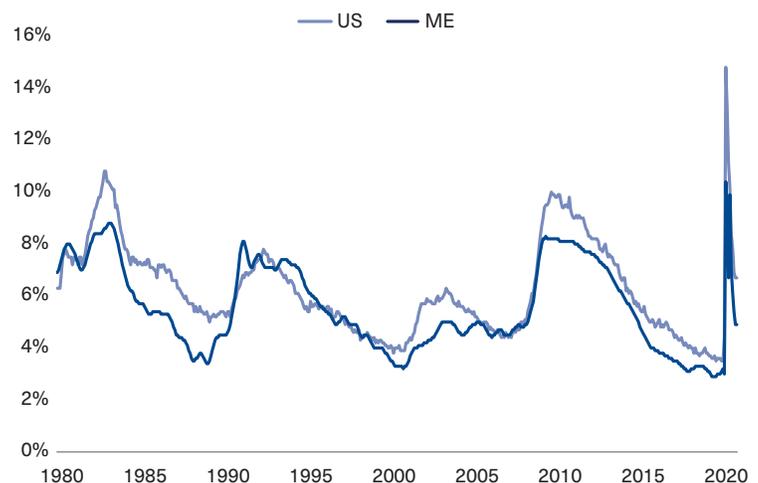
Abstract

The disruption of the labor market caused by the COVID-19 pandemic was unprecedented. The unemployment rate in February 2020, just before the pandemic spread to the United States, was 3.5 percent nationally and 3.2 percent in Maine; two months later, the unemployment rate jumped to 14.8 percent nationally and 10.4 percent in Maine. Although usually changes in the unemployment rate reliably indicate changes in the health of economy, that was not the case during the COVID-19 pandemic. The harm to the labor market in 2020 was even worse than indicated by the dramatic increase in unemployment. In addition to the unprecedented spike in unemployment, there was an unprecedented decrease in labor force participation. There were also an important increase in absence from work and an important decline in average weekly hours of work among those employed. This article takes an in-depth look at these trends both nationally and in Maine.

Despite several potential shortcomings with the measure of unemployment, usually changes in the unemployment rate reliably indicate changes in the health of economy. But that was not the case during the COVID-19 pandemic. The harm to the labor market in 2020 was even worse than indicated by the dramatic increase in unemployment. In addition to the unprecedented spike in unemployment, there was an unprecedented decrease in labor force participation. There were also an important increase in absence from work and an important decline in average weekly hours of work among those employed (both nationally and in Maine).⁴

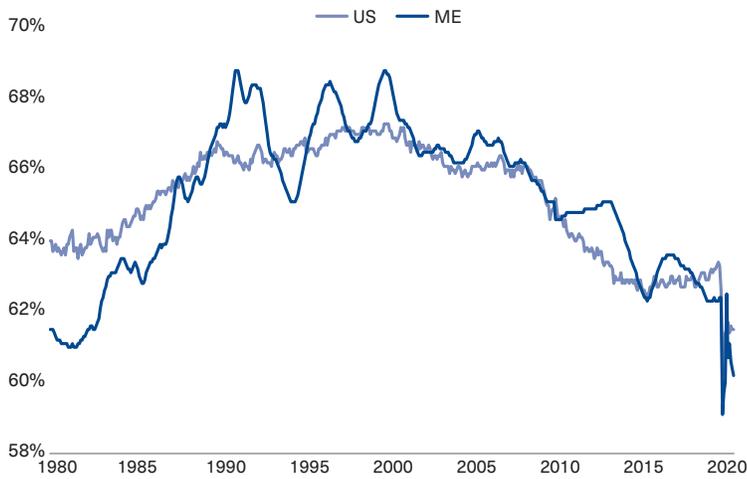
In February 2020, just before the pandemic spread to the United States, the unemployment rate was 3.5 percent nationally and 3.2 percent in Maine. Two months later, as parts of the economy closed to try to slow the spread of the virus, the unemployment rate jumped to 14.8 percent nationally and 10.4 percent in Maine, with most of this occurring between March and April.¹ This disruption of the labor market caused by the COVID-19 pandemic was unprecedented, as illustrated in Figure 1, which shows a 40-year history of the unemployment rate, the usual indicator of the health of the US labor market.² Unemployment of this magnitude was the highest since the Great Depression, but even then it did not rise so rapidly. Fortunately, as the economy started reopening, the unemployment rate fell considerably after April, reaching 6.7 percent nationally and 4.9 percent in Maine in November and in December.³

FIGURE 1: Monthly US and Maine Unemployment Rate (Seasonally Adjusted), 1980–2020



Source: Data from BLS as reported in FRED from the Federal Reserve Bank of St. Louis.

FIGURE 2: Monthly US and Maine Labor Force Participation Rate (Seasonally Adjusted), 1980–2020



Source: Data from BLS as reported in FRED from the Federal Reserve Bank of St. Louis.

LABOR FORCE PARTICIPATION

As shown in Figure 2, the national labor force participation rate, that is, percentage of the working-age (age 16 and older) population either employed or actively seeking employment, fell from 63.3 percent in February to 60.2 percent two months later (with most of this occurring between March and April). In these two months, Maine’s labor force participation rate fell from 62.4 percent to 59.1 percent.⁵ Although the national 3.1 percentage-point decrease in the labor force participation rate⁶ is several times smaller than the 11.3 percentage-point increase in the unemployment rate, the net number of people exiting the labor force in 2020 was comparable to the net number of people becoming unemployed. The working-age population out of the labor force was 5.5 million greater in December than in February, while the number of unemployed was 5.0 million greater in December 2020 than prior to the pandemic in February 2020.

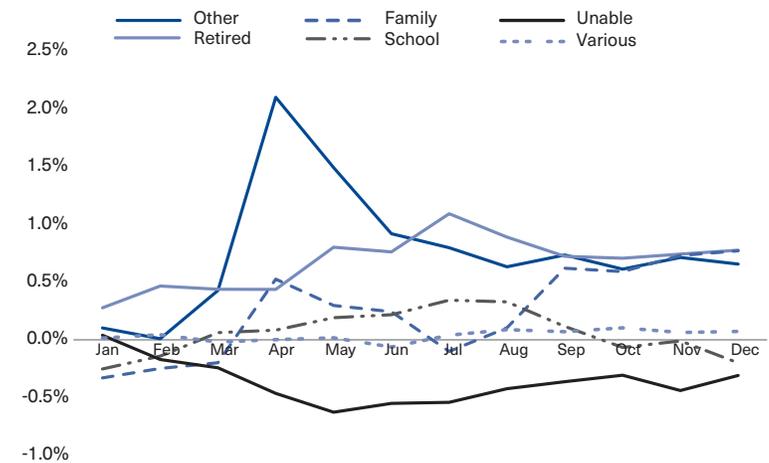
In addition to the extraordinary magnitude of the change, just the decline in the labor force participation rate is unusual for a recession. The reason that labor force participation is generally ignored when discussing the health of the economy is that recessions appear to

have no effect on it—people who are out of work in a recession are usually looking to get back into the labor force. Unlike Figure 1, which shows five clear spikes in the unemployment rate corresponding to recessions, Figure 2 shows only one clear downward jump in the labor force participation rate in 2020. Indeed, there were no significant changes in the labor force participation rate in the 11 previous recessions since 1948. Prior to the pandemic, there was no reason to focus on labor force participation when studying recessions.

The Current Population Survey (CPS) from the US Bureau of Labor Statistics (BLS) provides information on the reasons why people are not in the labor force. Figure 3 shows the yearly changes in these not-in-the-labor-force reasons for each month in 2020 derived using CPS data.⁷ More specifically, it shows the yearly change in the reasons

(according to the CPS categories) for being out of the labor force as percentages of the working-age population so that their sizes are directly comparable to the size of the changes in the labor force participation rate. The overall not-in-the-labor-force rates in January and February 2019 were 36.9 percent and 36.7 percent, respectively. In January and February 2020 the rates were 0.1 percentage points lower (36.8 percent and 36.6 percent), but the rate was 2.7

FIGURE 3: Change in Not-in-Labor-Force-Reason Rate from 2019



Source: Author’s calculations using CPS data.

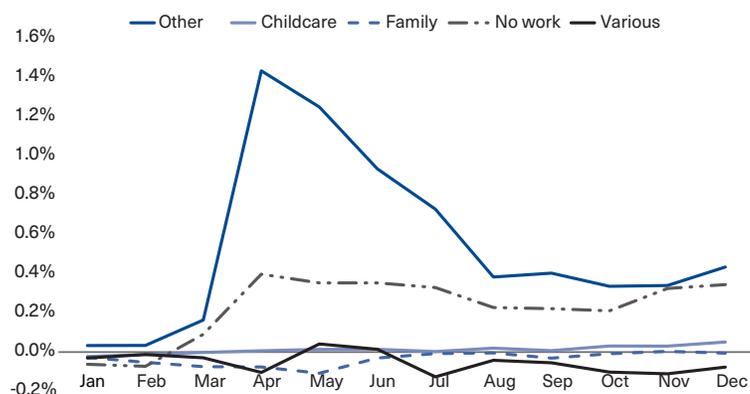
percentage points higher in April 2020 (39.9 percent) than in April 2019. The jump in the “other” category accounts for most of that April spike (2.1 percent of the 2.7 percent increase). In April 2019, the other category was 0.9 percent of the working-age population, but that category was 3.0 percent a year later, and it remained at or above 1.5 percent for the rest of 2020. Evidently fear of coronavirus exposure in the workplace fueled much of the precipitous decline in participation in the labor market. There was also a notable increase in the retired proportion of the adult population. Over the last nine months of 2020, it averaged 0.8 percentage points higher than in the corresponding months in 2019. It is probable that less than half of these retirements are due to the aging population. In the last decade, the retirement proportion of the population increased by an average of 0.3 percentage points per year (which is also how much increased in the first three months of 2020). Evidently, the fear of coronavirus exposure in the workplace also hastened some retirements.

Being out of the labor force because of family or household obligations also increased slightly (by 0.4 percentage points, on average) in the last nine months of 2020 compared to 2019. But being out of the labor force because of being “unable” decreased by an average of 0.4 percentage points during this time. And there was essentially no change in “various reasons” which includes being ill.

Further light can be shed on the substantial decline in labor force participation by examining the CPS data on why those not in the labor force are not looking for work. This question pertains only to people expressing a desire to work but who were not actively seeking work in the past month. Figure 4 shows the yearly changes in these not-looking-for-work reasons in 2020. To be directly comparable to the size of the changes in the labor force participation rate, these are expressed as percentages of the working-age population. On average in 2019, these reasons added together made up 1.66 percent of the working-age population, but this figure nearly doubled to 3.24 percent of the working-age population in April 2020.

The 1.6 percentage point jump in April in the number of people wanting a job but not actively looking for work was mostly in the “other” category, which increased by 1.4

FIGURE 4: Change in Not-Looking-for-Work-Reason Rate from 2019



Source: Author's calculations using CPS data.

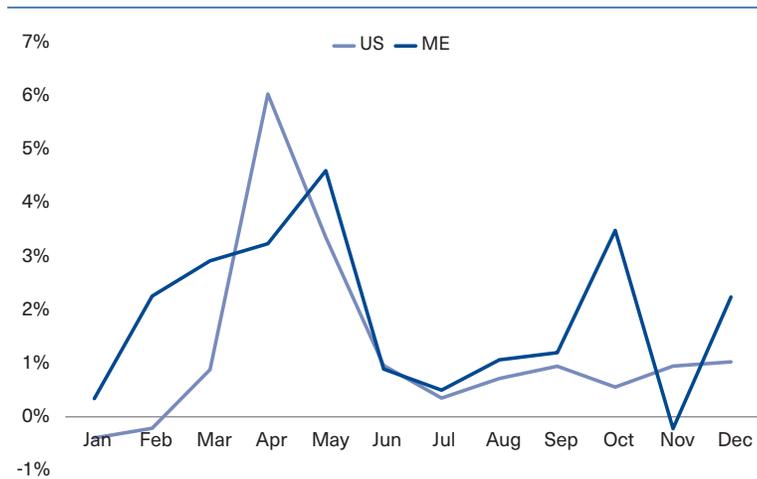
percentage points. This gradually fell through August, and then remained about double its 2019 level for the rest of 2020 (i.e., 0.8 percent compared to 0.4 percent the year before), presumably because of fear of workplace exposure to COVID-19. This was an unprecedented increase. The category “no work” (i.e., belief that there is no appropriate work available) was also about double its level from the previous year for the last nine months of 2020 (0.6 percent compared to 0.3 percent). This increase was comparable to that during the 2007–2009 recession.

EMPLOYED BUT NOT AT WORK

Prior to the coronavirus pandemic, there was also no reason to examine absence from work when studying recessions. Indeed, although the BLS has collected information on temporary absences from work in the CPS for nearly five decades, they do not generally publish these numbers. Prior to 2020, absences from work did not vary over the business cycle.

Figure 5 shows the yearly change in the percentage of employed workers temporarily absent from work (in the previous week) for each month in 2020. These numbers are derived from CPS data. Typically about 3 percent of employees are not at work, except for in summer months when it is about double that. The first two months of 2019 and 2020 were typical. The national absence rate in January and February 2019 were 3.2 percent and 2.8 percent, respectively. In January and February 2020, the rates were 2.8 percent and 2.6 percent, respectively. It then

FIGURE 5: Change in Absence from Work from 2019



Source: Author's calculations using CPS data.

jumped to 8.7 percent by April (compared to 2.6 percent in April 2019). In Maine, the absence rate in April 2020 was 8.1 percent. A national absence-from-work rate of 8.7 percent was not unprecedented, as it has often been higher than that in July and August. But that level it is considerably higher than in any non-summer month going back to at least 1976.

In terms of the numbers of workers affected, absence from work was comparable in magnitude to unemployment (and leaving the labor force). There were about 7.4 million more workers absent from work in April than in February 2020, compared to 17.4 million more unemployed (and 8.2 million more out of the labor force). Most of the increase in absence from work occurred in April and May, but it remained somewhat higher than in the corresponding month in 2019 throughout the rest of the year.⁸

As revealed in Figure 6, the contraction of economic activity associated with the pandemic is the reason for the increased absence from work. This chart shows for each month in 2020 the yearly change in the primary reason for being absent from work (as a percentage of those employed so that its measure is directly comparable to Figure 3).⁹ The other category mostly reflected employees who were

temporarily laid off from work but with an indefinite date for returning to work, which accounted for the vast majority of the increase absence from work in 2020.

There were essentially no changes from 2019 in work absences due to “childcare problems,” “other family/personal obligations,” and “various reasons” (including maternity/paternity leave, labor dispute, weather, school/training, civic military duty, etc.). There was a notable decrease in vacation/personal days, however, during the spring and summer of 2020.

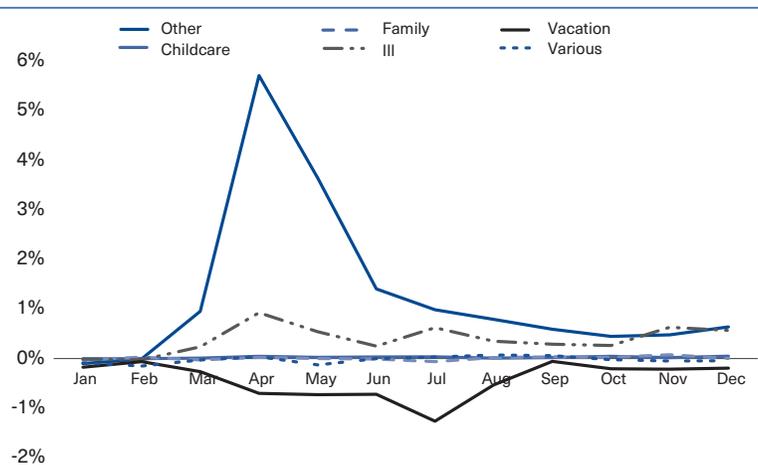
There was also an increase in “own illness/injury/medical problems,” suggesting a direct effect of COVID-19 on work. Over the last nine months of 2020, the illness category, which includes quarantining/self-isolating, averaged 0.5 percentage points higher than in the last nine months of 2019.¹⁰ That is, since

April 2020, evidently about half of 1 percent of those employed missed work either because they had the virus or were quarantining.

HOURS PER WORKER

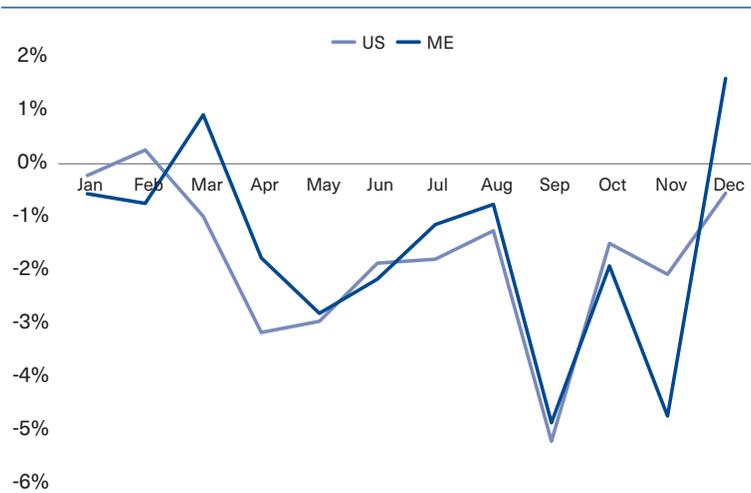
Yet another dimension significantly affected by the pandemic was in conditional hours of work; that is, average hours of work per week among those working (not counting those employed but absent from work).

FIGURE 6: Change in Reason for Absence for Work from 2019



Source: Author's calculations using CPS data.

FIGURE 7: Percentage Change in Conditional Work Hours from 2019



Source: Author's calculations using CPS data.

Although this is common in recessionary periods,¹¹ the reduction in hours per worker is considerably larger in 2020 than in recent recessions.

Figure 7 shows the percentage change in weekly hours per worker in 2020 compared to the corresponding month in 2019. The numbers are derived using CPS data on actual work hours from all jobs in the previous week, which is consistently measured since 1989. Over the last nine months of 2020, national hours per worker averaged 2.3 percent (0.88 hours per week) less than in the corresponding month in 2019. In Maine, hours per worker averaged 2.1 percent (0.79 hours) less. In comparison, during the nine-month recessions in 1990–1991 and 2001, national hours per worker respectively averaged 0.6 percent and 1.4 percent less than in the corresponding month one year earlier. During the 19-month recession in 2007–2009, hours per worker averaged 1.2 percent less.¹²

A decline of 2.3 percent, or 0.88 hours per work week, might not seem large. In absolute terms, however, the decrease in this dimension of work is of a magnitude that is comparable to the increase in unemployment (and the increase in absence from work and the decrease in labor force participation). As noted earlier, the number of unemployed (according to the official measure) rose by 17.4 million in the two months from February to April 2020. If those unemployed workers had the same average weekly hours as the national average in February (38.54), then

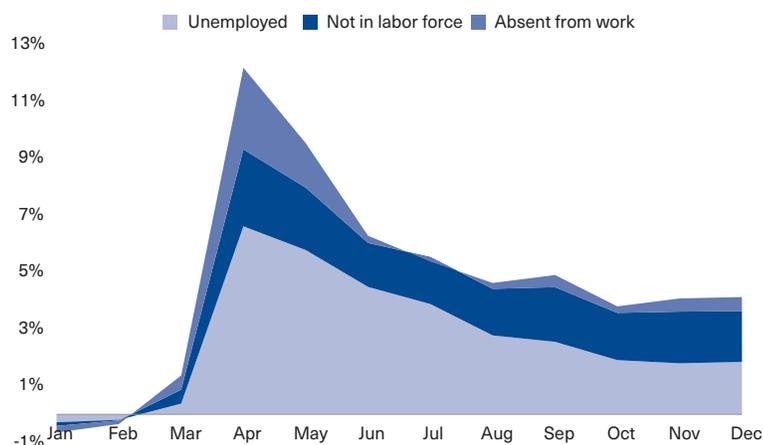
(officially measured) unemployment created a loss of 670 million in aggregate weekly hours of work. The decline in average hours of work from February to April was 0.91 per week. Multiplying this number times April employment (133.4) million less April absences from work (7.4 million) suggests that the reduction in weekly hours created a loss of 114 million in aggregate weekly hours of work. Moreover, as shown in Figure 7, this loss in work persisted more through the rest of 2020 than the spike in unemployment. The same calculations in November indicates a loss of 193 million in aggregate weekly hours of work from unemployment and 149 million from the decline in average weekly hours.

TOTAL WORK

Figure 8 shows the yearly change in the percentage of the US working-age population not working in 2020 compared to the corresponding month in 2019. The proportion of the working-age population not working was 12.2 percentage points higher in April 2020 than in April 2019. Indeed, the proportion went from less than 40.9 percent to more than 53.0 percent of the population not working. The majority of the (civilian noninstitutionalized) working-age population was not working in both April and May. This appears to be a first in American history. The proportion gradually fell back to 45.0 percent by September (compared to 40.1 percent in September 2019), but there was little improvement over the remainder of the year. In December 2020, 44.6 percent of the working-age population was not working, which was an increase of more than 4.1 percentage points from the end of 2019.

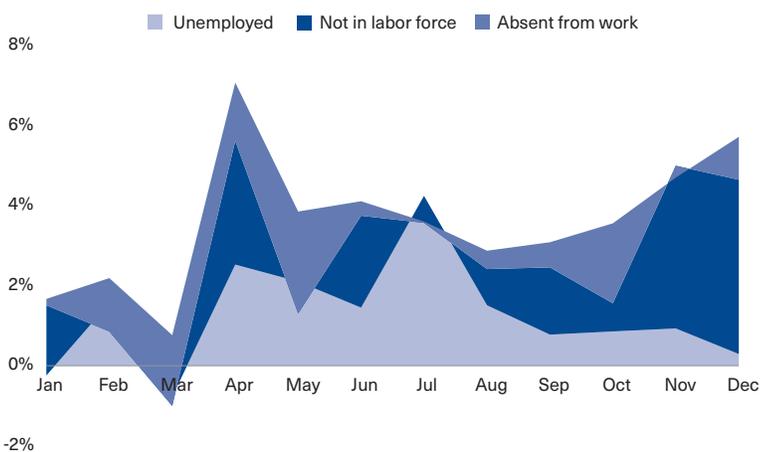
The pandemic's effects on the labor market in Maine were somewhat less severe than in the rest of country (although this is analogous to saying that a 150-car pileup on a freeway is somewhat less severe than a 250-car pile-up).¹³ Figure 9 shows the yearly change in the percentage of the Maine working-age population not working in 2020. In Maine this proportion was 7.1 percentage points higher in April, as the proportion went from 44.0 percent to more than 51.1 percent. As with the national proportion, the Maine not-working proportion gradually fell

FIGURE 8: National Change in People Not Working from 2019



Source: Author's calculations using CPS data.

FIGURE 9: Maine Change in People Not Working from 2019



Source: Author's calculations using CPS data.

back to 45.0 percent by September, and there was no improvement over the remainder of the year. In fact, the labor market in Maine appeared to worsen at the end of the year as the not-working proportion climbed to 48.1 percent in December, which was 5.7 percentage points higher than at end of 2019.

Figures 8 and 9 also illustrate the relative importance of the three reasons (unemployed, not in the labor force, and absent from work) for the increase in not working in 2020. Although nationally the increase in unemployment

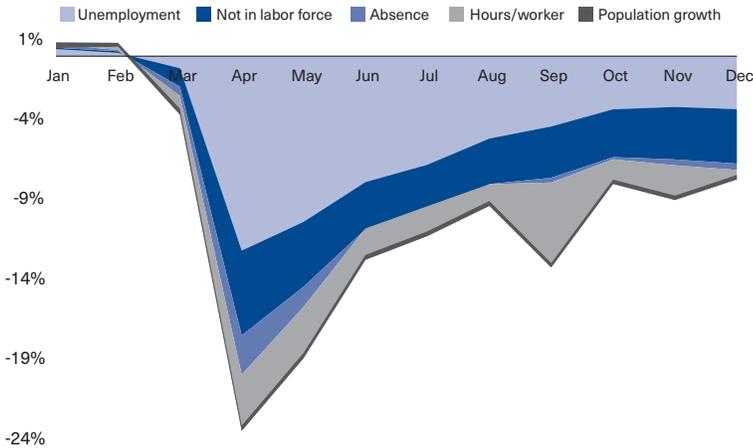
was generally the largest single reason through the year, this was not the case in every month. In March, the national increase in absence from work and the increase not in the labor force (both 0.5 percentage points higher than one year earlier) were both greater than the increase in unemployment (0.4 percentage points). In November, the annual increase in not in the labor force slightly exceeded the annual increase in unemployment (1.82 percent compared to 1.80 percent). Over the last ten months of 2020, the increase in measured unemployment accounted for an average of 54 percent of the increase in not working nationally.

In Maine, unemployment accounted for an even smaller part of the increase in not working in 2020. Overall in 2020, Maine's increase in not in the labor force was larger than its increase in unemployment. In terms of the proportion of the increase in not working in Maine over the last nine months of 2020, not in the labor force accounted for 40.5 percent of it on average while unemployment accounted for 38.1 percent. In addition, at the end of 2020, the increase in not in the labor force accounted for the vast majority of the increase in not working.

Figures 8 and 9 clearly indicate that the usual measure used to gauge the health of the economy, the unemployment rate, is inadequate in the current recession. Moreover, the unemployment rate became a more inadequate measure of labor market health in the latter part of 2020. Nationally, the increase in unemployment accounted for about 72 percent of the increase in not working in June and July, but it only accounted for 44 percent in November and December.

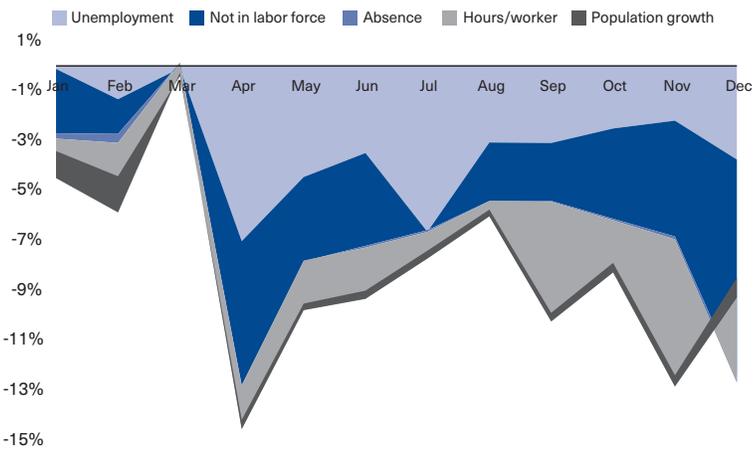
Figures 8 and 9, however, still fail to capture all of the contraction in the labor market in 2020 because average hours per worker also fell during the coronavirus recession. The full contraction in the US labor market in 2020 is shown in Figure 10. Compared to 12 months earlier, total hours of work fell by 23.1 percent in April.¹⁴ Over the last nine months of 2020, unemployment accounted for

FIGURE 10: National Change in Total Hours of Work from 2019



Source: Author's calculations using CPS data.

FIGURE 11: Maine Change in Total Hours of Work from 2019



Source: Author's calculations using CPS data.

slightly less than half (48.6 percent on average) of the overall contraction in work.¹⁵ And over the last four months unemployment accounted for an even smaller proportion (40.3 percent) of the labor market contraction.

As shown in Figure 11, unemployment appears to account for a still smaller proportion of the overall reduction in work in Maine.¹⁶ Moreover, because of this smaller proportion, the gradual improvement in the labor market over the last half of 2020 was slower in Maine than in the rest of nation. Although Maine's measured unemployment

rate was well below the national rate throughout the coronavirus pandemic, and the overall contraction in the labor market was somewhat smaller in Maine than in the rest of the nation during its deepest part last April and May, the overall contraction in Maine's labor market has been slightly worse than in the rest of the country over the last quarter of 2020.

In conclusion, it seems clear that focus on the measured unemployment rate is inadequate right now. The COVID-19 pandemic has created unique challenges for quantifying the consequences on the labor market. In particular, current circumstances (i.e., in early 2021) indicate that withdrawals from the labor market may be as important as measured unemployment.

NOTES

- 1 From 1948 through 2019, the largest two-month increase in the unemployment rate was 1.5 percentage points from November 1974 to January 1975. The national increase of 11.3 percentage points between last February and April was 7.5 times larger.
- 2 Actually, Figure 1 shows just the most commonly used measure (U-3) calculated by the US Bureau of Labor Statistics.
- 3 For further discussion about why Maine experienced less unemployment than the rest of the nation, see Gabe (2020).
- 4 For more on these issues, see Bartik et al. (2020), Hall and Kudlyak (2020), and Heffetz and Reeves (2020).
- 5 The numbers bounce around noticeably more for Maine than nationally because they are derived from much smaller samples, and hence are subject to more sampling variation.
- 6 From 1948 through 2019 the largest two-month decrease in the labor force participation rate was 1.0 percentage points in 1953.
- 7 The CPS is a monthly survey of about 95,000 civilian noninstitutionalized working-age adults in 2019 (in prior years the samples were generally a little over 100,000). The monthly samples from Maine averaged about 800 observations in 2019. The pandemic, however, noticeably reduced the sample sizes beginning in March 2020, and especially so in April through August. For more on this and related issues, see Ward and Edwards (2020) and Heffetz and Reeves

- (2020). The measure only allows for one main reason for not being in the labor force. The data in Figure 3 are available from Flood et al. (2020).
- 8 The BLS believes that much of the April and May spike in measured absence from work should have been categorized as unemployment (from temporary layoff), and they attempted to correct this beginning in June. This measurement issue suggests that the actual unemployment rate in April 2020 was about 19.5 percent (instead of 14.8 percent). If the increase in wanting-a-job-but-not-looking-for-work for “other” reasons is included, the unemployment rate in April was about 21 percent. For more on this issue see Bartik et al. (2020).
 - 9 The question allows for only one main reason for being employed but not at work in the previous week. The CPS samples were too small to calculate meaningful monthly results for reasons for work absences for Maine.
 - 10 This 0.5 percentage-point increase in missing work because of illness is an 84 percent increase from the corresponding months in 2019.
 - 11 For example, see Borowczyk-Martins and Lale (2019).
 - 12 For the months in the second year of that recession, the percentage changes are relative to the corresponding month two years earlier.
 - 13 For more on Maine’s labor-market experience during the pandemic see Gabe (2020).
 - 14 The contraction would have been 23.4 percent without population growth. The contribution on total hours from population growth is positive, hence the overall contraction shown in Figure 10 is where the light gray area meets the sliver of dark gray area. This estimate is quite close to the results in Cajner et al. (2020), which uses a different set of data.
 - 15 Figure 10 shows the estimated percentage change in weekly hours of work per (civilian noninstitutionalized) working-age person (denoted as h below). It is decomposed into the contributions from unemployment (U), not in the labor force (N), absence from work (A), hours per worker (c), and population (P) using the linear approximation

$$\% \Delta h \approx \% \Delta c - (N/E) \times \% \Delta N - (U/E) \times \% \Delta U - (A/E) \times \% \Delta A + (P/E - 1) \times \% \Delta P,$$
 where E denotes employment. The numbers used in the equation are from official BLS estimates, with the exception $\% \Delta h$, $\% \Delta c$, A , and $\% \Delta A$ which are estimated using CPS data. Because this linear approximation is applied to changes that are not infinitesimally small, it slightly understates the estimated $\% \Delta h$ (by 5.0 percent on average). Thus each of the right-hand-side terms is proportionally adjusted upward by the amount of the total understatement in each month to make the approximation hold with equality.
 - 16 But as noted earlier, the results for Maine are estimated much less precisely. Moreover, the decomposition is less precise.

REFERENCES

Bartik, Alexander W., Marianne Bertrand, Feng Lin, Jesse Rothstein, and Matt Unrath. 2020. *Measuring the Labor Market at the Onset of the COVID-19 Crisis*. National Bureau of Economic Research Working Paper 27613. <https://doi.org/10.3386/w27613>.

Borowczyk-Martins, Daniel, and Etienne Lale. 2019. “Employment Adjustment and Part-Time Work: Lessons from the United States and the United Kingdom.” *American Economic Journal: Macroeconomics* 11(1): 389–435. <https://doi.org/10.1257/mac.20160078>.

Cajner, Tomaz, Leland D. Crane, Ryan A. Decker, John Grigsby, Adrian Hamins-Puertolas, Erik Hurst, Christopher Kurz, and Ahu Yildirmaz. 2020. *The U.S. Labor Market during the Beginning of the Pandemic Recession*. National Bureau of Economic Research Working Paper 27159. <https://doi.org/10.3386/w27159>.

Flood, Sarah, Miriam King, Renae Rodgers, Steven Ruggles, and J. Robert Warren. 2020. Integrated Public Use Microdata Series, Current Population Survey: Version 8.0 [dataset]. Minneapolis: IPUMS.

Gabe, Todd. 2020. *Maine Employment Change during the Early Months of the COVID-19 Pandemic: A Shift-Share Analysis*. University of Southern Maine, Maine Center for Business and Economic Research. <https://digitalcommons.usm.maine.edu/impact/5/>.

Hall, Robert E., and Marianna Kudryak. 2020. *Unemployed With and Without Jobs*. National Bureau of Economic Research Working Paper 27886. <https://doi.org/10.3386/w27886>.

Heffetz, Ori, and Daniel Reeves. 2020. *Measuring Unemployment in Crisis: Effects of COVID-19 on Potential Biases in the CPS*. National Bureau of Economic Research Working Paper 28310. <https://doi.org/10.3386/w28310>.

Ward, Jason M., and Kathryn A. Edwards. 2020. *Statistics in the Time of Coronavirus: COVID-19-related Nonresponse in the CPS Household Survey*. Santa Monica, CA: RAND Corporation. <https://doi.org/10.7249/WRA842-1>.



Philip Trostel is a professor of economics at the University of Maine, where he holds a joint appointment in the Margaret Chase Smith Policy Center and the School of Economics. He is an applied microeconomist specializing in public finance, with a research focus on education policy, human capital, and labor markets.