Comments and Discussion

COMMENT BY

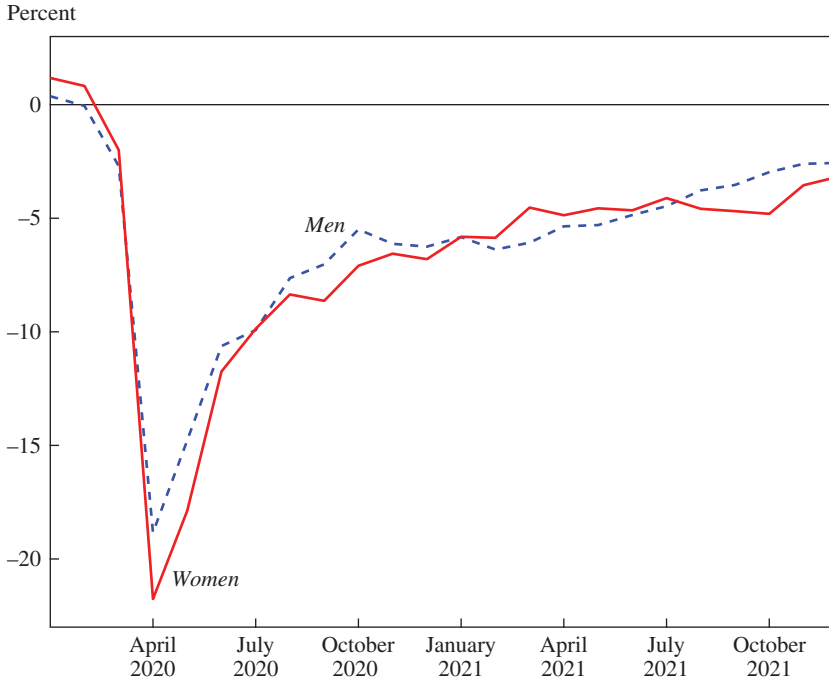
STEFANIA ALBANESI The COVID-19 pandemic has upended our lives and disrupted the economy and labor markets in many different ways. One reason it has been hard to grapple with the labor market impacts of the COVID-19 recession is its unique nature. Economic downturns in the United States are usually associated with a larger employment drop for men than for women, but during the COVID-19 recession, employment losses were larger for women (Albanesi and Kim 2021).

This is illustrated in figure 1 which reports the percentage change in the employment-to-population ratio by gender relative to the same month in 2019 for each month in 2020 and 2021. In April 2020, employment was 18 percent lower for men and 23 percent lower for women relative to April 2019. In October 2020, employment was 6 percent lower than in October 2019 for men and 8 percent lower for women. By December 2021, employment was still 3 percent lower relative to December 2019 for men and 4 percent lower for women.

There are demand-side and supply-side reasons for the gender differences in employment changes during typical recessions and during the COVID-19 recession. On the demand side, the asymmetry is partly explained by gender differences in the occupation distribution, with men primarily employed in production occupations and women concentrated in service occupations, which tend to be less cyclical (Albanesi and Şahin 2018). During the pandemic, however, there has been a sizable drop in the demand for services as a result of both the mitigation measures initially enacted to contain the pandemic and consumers' response to the risk of infection (Chetty and others 2020). Given the concentration of women in service

Brookings Papers on Economic Activity, Spring 2022: 111–139

Figure 1. Change in the Employment-to-Population Ratio Relative to the Same Month in 2019



Source: Author's calculations from the Bureau of Labor Statistics Current Population Survey.
Note: Population age 25–54 years old.

occupations, they have been disproportionately hit by the corresponding employment losses.

On the supply side, married women historically tend to increase their attachment to the labor force during economic downturns relative to expansions as a form of family-level insurance against the risk of employment loss for their husbands (Ellieroth 2019). This mechanism acts as an automatic stabilizer, and as the share of women in the labor force increased in the postwar period, it contributed to a reduction in the business cycle volatility of aggregate employment (Albanesi 2019). By contrast, during the pandemic, limited availability of in-person childcare and schooling options led some parents—and mothers in particular—to exit the labor force (Albanesiand Kim 2021).

Goldin challenges the notion that women experienced a disproportionate impact in the COVID-19 recession. She argues that differences by education were much larger than differences by gender and that some mothers may have been able to continue working due to the switch to working from

home, whereas they might have exited the labor force without the pandemic. In my discussion, I will qualify and contextualize these statements. I show that during the pandemic, employment did fall more for women, mostly because women were more likely to be working in jobs that could not be performed remotely. These in-person occupations mostly employ workers without a college degree, so college workers were mostly spared. I also find that Black and Hispanic workers are overrepresented in occupations that must be performed in-person, and this can account for racial disparities in employment outcomes. The distribution of workers across occupations does not fully account for the gender differences in employment losses, and labor supply also plays a role. I show that mothers did leave the labor force more than comparable fathers, but the rise in nonparticipation was mainly driven by workers who became unemployed first. So while the limited in-person childcare and schooling options likely contributed to the decline in labor force participation of mothers, those who were able to remain employed managed to continue working despite these challenges.

The decline in women's employment during the COVID-19 recession has raised concerns that the pandemic may lead to a long-lasting setback in women's employment going forward. To end my discussion, I will examine the potential for a jobless recovery as we exit the pandemic.

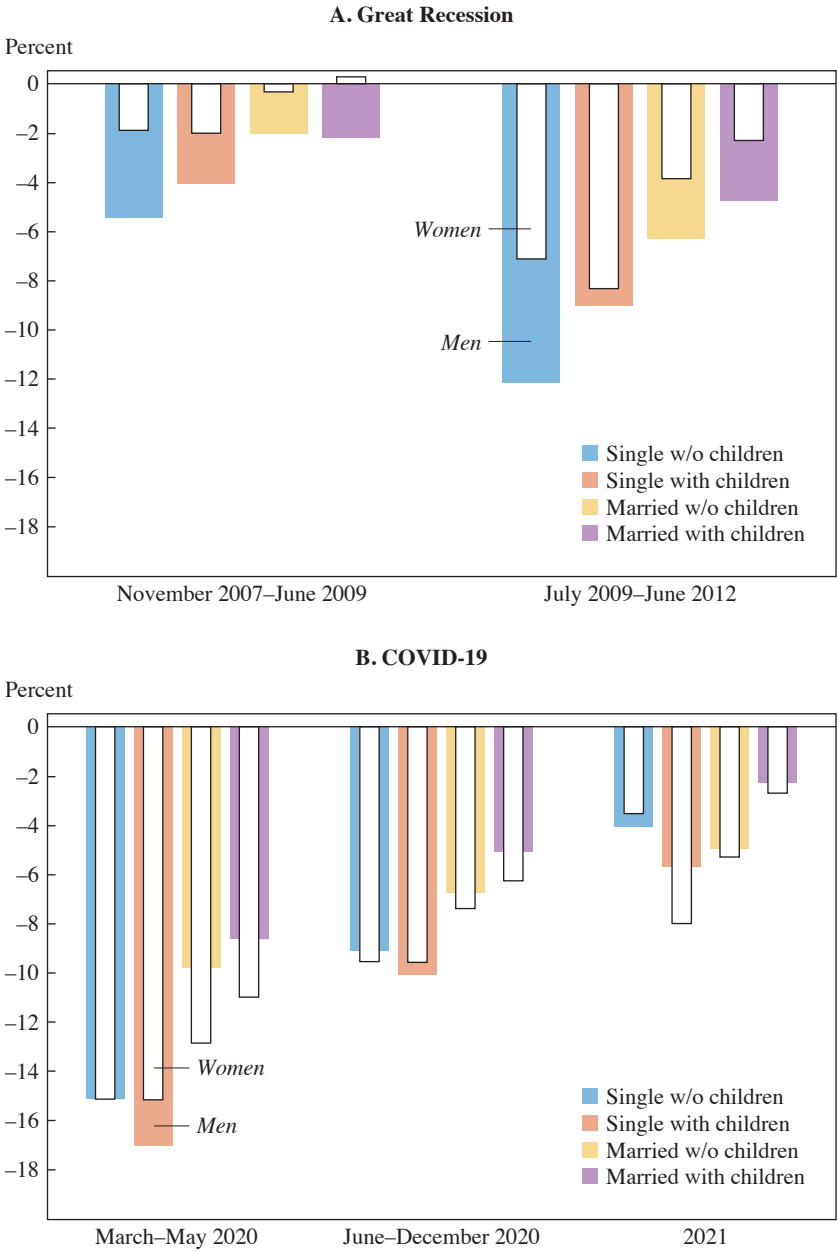
COMPARING COVID-19 TO THE GREAT RECESSION To gain perspective on how the employment losses of men and women during the COVID-19 recession differed from earlier recessions, it is useful to compare it to the Great Recession, which had a typical pattern.

Figure 2 shows the change in the employment-to-population ratio by gender and family status during COVID-19 and the Great Recession relative to prerecession values. For the Great Recession the comparison point is the same month in 2006, while for the pandemic recession it is the same month in 2019.[1] I divide the population into four demographic groups, by marital status and presence of children younger than 12 years old residing in the household.[2] For the Great Recession, I consider two phases. The first

1. These results are very similar if the same month in 2018 is used as a basis for COVID-19. Goldin argues that 2018 should be used as a counterfactual. However, when analyzing standard recessions, the most recent comparable prerecession date is used to measure the depth of the recession, and I follow this approach in my discussion consistent with the business cycle literature.

2. The size of each demographic group varies by gender. In February 2020, among women 17 percent are single without children, 6 percent are single with children, 15 percent are married without children, and 14 percent are married with children. Among men, 17 percent are single without children, 2 percent are single with children, 15 percent are married without children, and 15 percent are married with children.

Figure 2. Change in the Employment-to-Population Ratio for the Great Recession and for the COVID-19 Recession



Source: Author's calculations from the BLS Current Population Survey.

Note: For panel A, ratios are relative to 2006; for panel B, ratios are relative to 2019. Individuals with children are those who have children younger than 12 years old residing in the household.

is November 2007 to June 2009, which corresponds to the official recession dates determined by the Business Cycle Dating Committee of the National Bureau of Economic Research. The second runs from July 2009 to June 2012, when the broader economy was recovering but labor markets were still stagnant. For COVID-19, I consider three phases. The first comprises March, April, and May 2020, when the pandemic started and the strictest mitigation measures were in place. The second corresponds to the period from June to December 2020, with lower infection rates and less stringent mitigation measures, and the third phase is 2021.

During the Great Recession, the decline in women's employment was substantially smaller than men's for every demographic group. In the period from November 2007 to June 2009, the magnitude of the drop in employment for single women was less than half of the drop for single men. For married women, employment barely changed while it declined by 5 percent for married men. In the period from July 2009 to June 2012, gender gaps in employment loss were smaller but still largely favored women.

During COVID-19, the pattern is markedly different. Gender gaps in employment are negligible for single workers without children but are sizable for single parents and married workers. For married workers, the gender gaps were largest in March–May 2020, when married women experienced a decline in employment that was approximately 3 percent larger than for comparable men, and declined later in the pandemic. Among single parents, mothers experienced a slightly smaller decline in employment compared to single fathers in 2020, but during 2021 employment was 8 percent lower for single mothers and 6 percent lower for single fathers when compared to 2019.

Overall, the data support the notion that the decline in employment was larger for women during the pandemic, even if men also experienced substantial job loss. While gender gaps in employment losses were initially large but closed over time for married individuals, the pattern was reversed for single parents. The fact that in typical recessions women's job losses are smaller compared to men's and married women's employment typically does not decline likely triggered the alarm apparent in media and social commentary on the adverse effects of the pandemic on women's labor market performance.

LABOR DEMAND Labor demand and labor supply factors also contributed to women's larger employment losses during the pandemic. To explore the role of labor demand, Albanesi and Kim (2021) classify workers by occupation based on their flexibility and contact intensity. Flexible

Table 1. Occupation Classifications

	Flexible	*Inflexible*
High contact	Education, training, and library	Health care practitioners and technical health care support Food preparation and serving Personal care and service
Low contact	Management Business Computer and mathematical Architecture and engineering Life science, physical science, and social science Community and social services Legal Arts, design, entertainment, sports, and media Sales and related Office and administrative	Protective service Building and grounds cleaning and maintenance Farming, fishing, and forestry Construction trades, extraction Installation, maintenance, and repair Production Transportation and material moving

Source: Albanesi and Kim (2021); reproduced with permission by *Journal of Economic Perspectives*, © American Economic Association.

Note: Author's classification based on O*NET. Occupations are inflexible if they cannot be performed remotely, flexible otherwise. Occupations are high contact if they require interactions with coworkers or customers at a distance of less than six feet, low contact otherwise.

occupations include those that allow their employees to work remotely, whereas inflexible occupations require physical presence due to on-site equipment or outdoor activities. The distinction between high contact and low contact occupations is based on workers' physical proximity to customers or coworkers while on the job.

Table 1 displays where various occupations fall in the categorization, and table 2 reports the distribution of workers by gender across occupations prepandemic for the four categories defined in table 1. The inflexible, high contact occupations, comprising health, personal care, and hospitality, are the most vulnerable to lower demand due to COVID-19; they account for 17 percent of total employment and are dominated by female workers, with a women's share of 73 percent. Male workers are disproportionately represented in inflexible, low contact occupations, which account for 26 percent of total employment with a women's share of only 19 percent. Occupations in this category, comprising production, transportation, construction, and the like, experience the largest decline in employment in typical recessions. Flexible, low contact occupations are the largest category, accounting for 51 percent of overall employment, with women's share at 50 percent. These cover most professional and managerial jobs. Flexible, high contact

Table 2. Occupational Distribution by Gender

	Employed women	*Employed men*	*Total employed*	*Women's share*
Flexible, high contact	10	3	6	76
Flexible, low contact	53	48	51	50
Inflexible, high contact	26	9	17	73
Inflexible, low contact	11	40	26	19

Source: Albanesi and Kim (2021); reproduced with permission by *Journal of Economic Perspectives*, © American Economic Association.

Note: Values in percentages for February 2020.

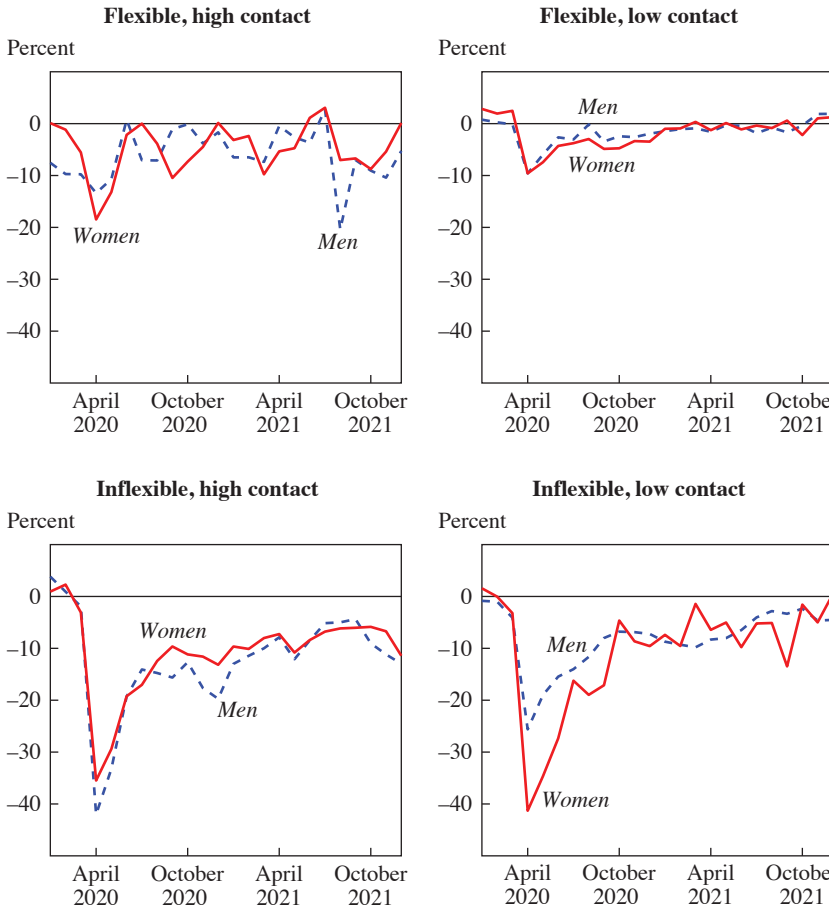
occupations, including most education jobs, also exhibit a high women's share at 76 percent but account for only 6 percent of total employment.[3]

Figure 3 displays the change in the employment-to-population ratio for these four occupational categories relative to the same month in 2019 by gender. Inflexible, high contact occupations show the largest decline in employment, with a drop in April 2020 relative to April 2019 of 38 percent for women and 41 percent for men, hovering at around −10 percent relative to the same month in 2019 from September 2020 until the end of 2021. Inflexible, low contact occupations are the second-worst hit, with a decline in employment close to 23 percent for men and 41 percent for women in April 2020 relative to April 2019. For these occupations, too, the recovery has stalled, with employment approximately 10 percent lower than in the same month in 2019 from October 2020 to the end of 2021. Employment in flexible, high contact occupations was 19 percent lower for women and 15 percent lower for men relative to one year prior in April 2020, but it recovered rapidly and has remained 2–8 percent lower than prepandemic levels from July 2020 onward. Finally, flexible, low contact occupations, which account for the biggest share of employment, were the least impacted, with a drop in employment of −10 percent relative to one year prior in April 2020 for both men and women, and a recovery to 2–4 percent lower relative to prepandemic levels from June 2020 onward.

Two patterns clearly emerge. First, for the flexible occupations, the decline in employment and the gender differences in that decline were small. The second pattern is that in inflexible occupations, initial employment losses were sizable and even at the end of 2021 employment remained well below 2019 values. Additionally, workers with the lowest representation

3. The occupation and industry distribution by gender does not vary by marital status; see Cortes and Pan (2018).

Figure 3. Percentage Change in the Employment-to-Population Ratio from Same Month in 2019 by Occupation

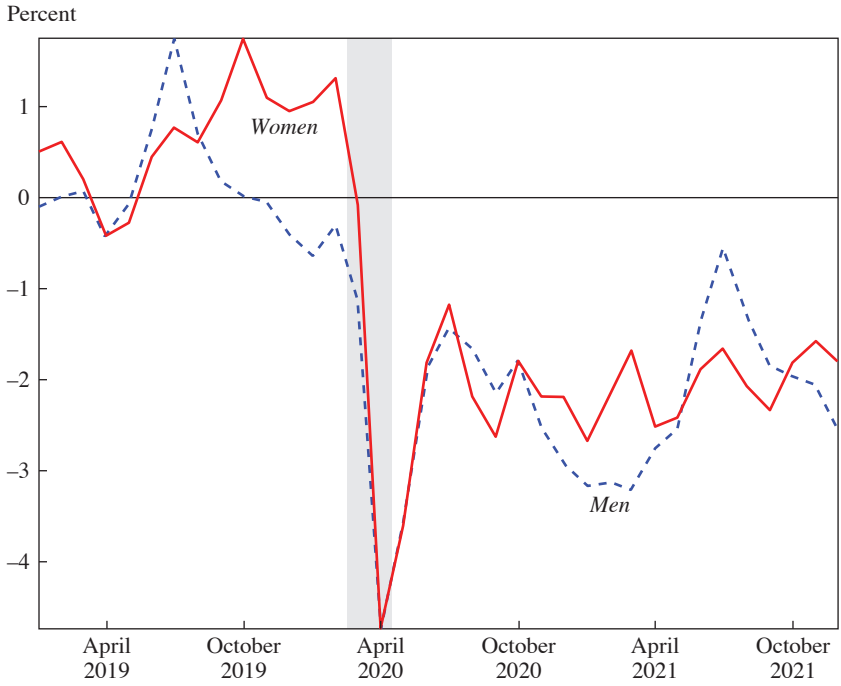


Source: Author's calculations based on the BLS Current Population Survey.

Note: Population age 25–54 years old. The numerator consists of the number of persons employed for each gender in each occupation, the denominator the number of persons of the same gender in the population.

by gender lost more jobs. This may be due to negative selection of male workers into female-dominated inflexible, high contact occupations and of female workers into the male-dominated inflexible, low contact occupations. The flexible occupations comprise most professional, managerial, and education jobs, and college-educated workers are disproportionally represented in these occupations, whereas inflexible occupations are dominated

Figure 4. Labor Force Participation Rate by Gender, January 2019–December 2021

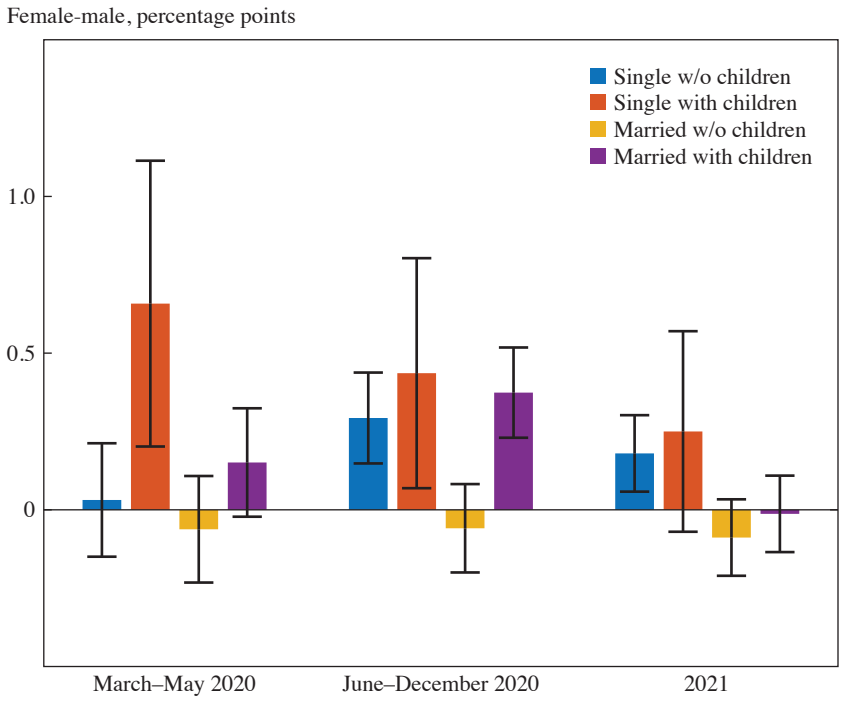


Source: Author's calculations based on the BLS Current Population Survey.
Note: Population age 25–54 years old. Percentage change since same month in 2018.

by workers without a college degree (Albanesi and Kim 2021). The difference in employment declines between flexible and inflexible occupations is much larger than the gender difference within occupations and matches the disparate effects by education highlighted in Goldin's work. But it is not the education per se that matters for the employment losses; rather college-educated workers were employed in jobs that can be performed remotely and that limited their employment losses.

LABOR SUPPLY Labor force participation declined for both men and women during the pandemic, as can be seen in figure 4, which plots the percentage change relative to the same month in 2018 in the labor force participation rate for the prime-age population in each month of 2019, 2020, and 2021. For both men and women, labor force participation was 5 percent lower in April 2020 compared to April 2018. Gender gaps in the change in participation relative to 2018 are on the order of zero to 2 percentage points during the pandemic and vary in sign. For both men and women, the participation

Figure 5. Female-Male Difference in Changes in Nonparticipation Relative to the 2019 Average by Family Status



Source: Author's calculations based on the BLS Current Population Survey.

Note: Controlled for age, education, and occupation. Error bars denote 90 percent confidence intervals. Population age 25–54 years old. Individuals with children are those who have children younger than 12 years old residing in the household.

rate had not recovered to prepandemic levels at the end of 2021, when it was still approximately 2 percent below the same period in 2018.

Both men and women experienced a surge in participation in late 2019 and the first two months of 2020 relative to three years prior, with a longer and more pronounced rise for women. Goldin correctly points out that using February 2020 as a basis for calculating the decline in participation overstates that decline for women. However, I will show that despite this caveat, nonparticipation rose more for women than for men.

Figure 5 presents female-male differences in the change in nonparticipation during the pandemic relative to the average in 2019 by family status, controlling for differences in age, education, and occupation across these groups. The estimates suggest that the biggest gender differences occur for

single parents in 2020 and married parents in the second half of 2020 and that by 2021 there are no longer sizable gender gaps.

Further breakdown of the data suggests that the rise in women's nonparticipation relative to men is mostly accounted for by transitions from unemployment rather than voluntary quits. This can be seen in figure 6, which reports the gender differences in the change in employment-to-nonparticipation and unemployment-to-nonparticipation flows, controlling for age, education, and occupation. There are sizable and significant gender differences for single parents in 2020 and for married parents in the second half of 2020 and in 2021. This is surprising, as it follows several decades of continued convergence in unemployment-to-nonparticipation flows across genders (Albanesi and Şahin 2018).

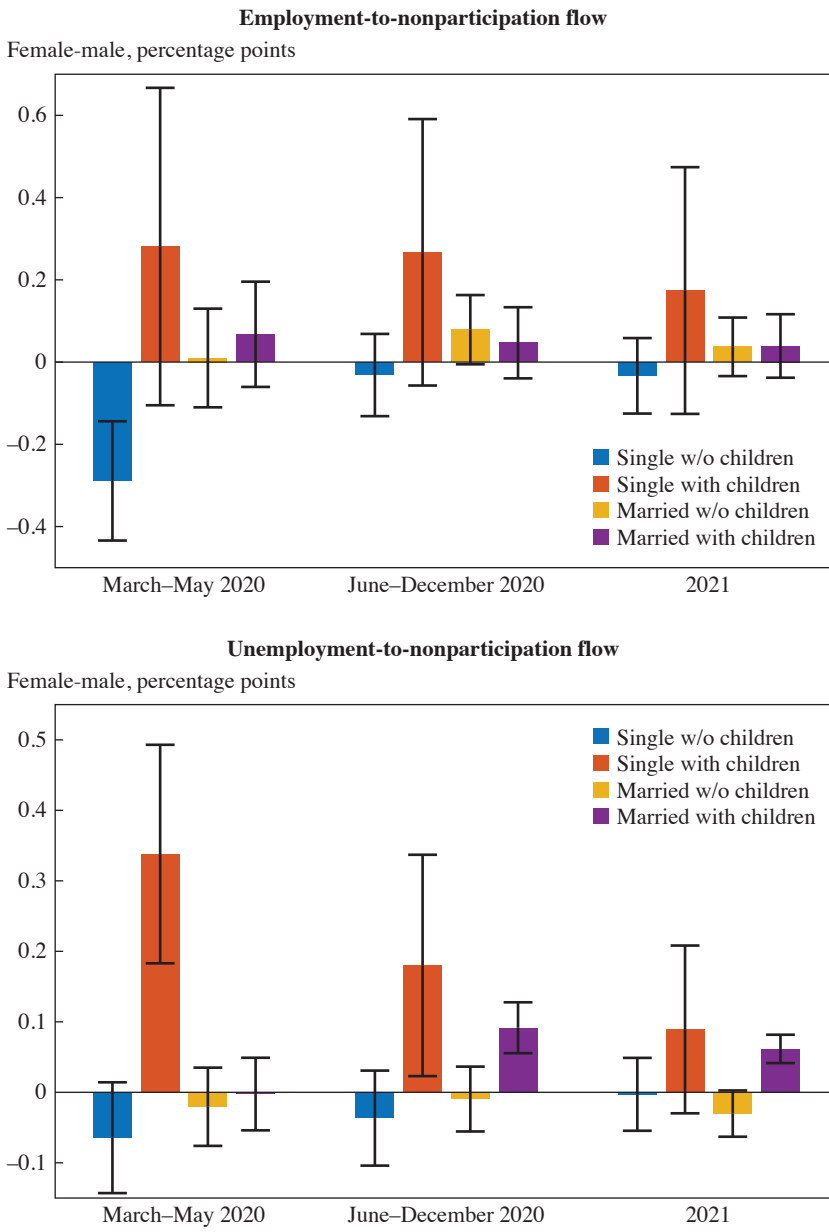
This finding suggests a pattern in which mothers who were able to keep their jobs during the pandemic continued working. However, those who lost their jobs exited the labor force at higher rates than comparable fathers.

RACIAL DISPARITIES The labor market impact of COVID-19 has been disparate by race. Figure 7 plots the change in the employment-to-population ratio relative to the same month in 2019 by race for men and women starting in January 2020, illustrating the large racial disparities for both men and women.

For men, at the start of the pandemic in spring 2020 the main difference is between white men, who experienced a 17 percent drop in employment, and the other racial groups, whose employment fell by 22–23 percent. During the rest of 2020, employment recovered more for Asian and white men, while during 2021 employment of Hispanic men converged to employment for white men but remained lower for Black men. Hispanic women experienced the most severe impact at the height of the pandemic, with a 28 percent decline in employment in April 2020 compared to the same month in 2019, while Black women experienced a 23 percent decline and white and Asian women a 20 percent decline. Asian, Black, and Hispanic women experienced a much slower recovery in employment during the rest of 2020, while in 2021 it was Black and Hispanic women's employment that lagged employment for both white and Asian women. Interestingly, gender gaps in the decline in employment are smallest for the Asian and Black population and largest for the white and Hispanic population.

What drives these racial disparities? My previous analysis suggests two possible economic factors. The first is the occupation distribution, which affects labor demand. Table 3 reports the occupation distribution for men and women by race. Focusing on women, we see that 28 percent of Asian women and 29 percent of Black women were employed in inflexible, high

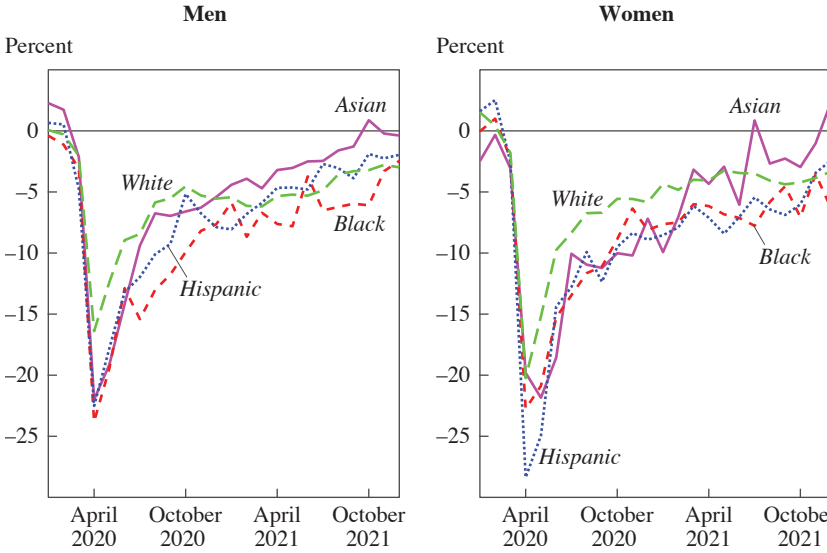
Figure 6. Female-Male Difference in Changes in Employment-to-Nonparticipation Flows and Unemployment-to-Nonparticipation Flows Relative to the 2019 Average by Family Status



Source: Author's calculations based on the BLS Current Population Survey.

Note: Controlled for age, education, and occupation. Error bars denote 90 percent confidence intervals. Population age 25–54 years old. Individuals with children are those who have children younger than 12 years old residing in the household.

Figure 7. Change in the Employment-to-Population Ratio Relative to the Same Month in 2019 by Gender and Race, January 2020–December 2021



Source: Author's calculations based on the BLS Current Population Survey.

Table 3. Occupation Distribution by Race and Gender

	Asian		*Black*		*Hispanic*		*White*	
	Men	*Women*	*Men*	*Women*	*Men*	*Women*	*Men*	*Women*
Flexible, high contact	3	7	3	7	2	7	4	12
Flexible, low contact	65	58	40	50	31	46	53	56
Inflexible, high contact	14	28	11	29	9	24	7	24
Inflexible, low contact	18	7	46	14	58	23	36	8

Source: Author's calculations based on the BLS Current Population Survey.
Note: Percentage in each occupation by gender/race in February 2020.

contact occupations, compared to 24 percent of Hispanic and white women. Additionally, 23 percent of Hispanic women were employed in inflexible, low contact occupations, compared to 7 percent of Asian women, 14 percent of Black women, and 8 percent of white women. By contrast 58 percent of Asian women and 56 percent of white women were employed in flexible, low contact occupations compared to 50 percent of Black women and 46 percent of Hispanic women. This suggests that the overrepresentation of Black and Hispanic women in inflexible occupations and the overrepresentation of Asian and white women in flexible occupations contributed to racial disparities in employment.

The second possible factor is family status, which affects labor supply. As previously noted, the rise in nonparticipation during the pandemic was most pronounced for single mothers, followed by married mothers. Twenty-two percent of Black women are single mothers, compared to 16 percent for Hispanic women, 8 percent for white women, and 4 percent for Asian women. Additionally, the fraction without children, combining both single and married, is the lowest for Hispanic women, at 55 percent, while it is above 60 percent for the other racial groups.[4] The higher incidence of single mothers among Black women and of both single and married mothers among Hispanic women may have contributed to a bigger reduction in their labor supply, compared to white and Asian women during COVID-19.

Another important factor affecting labor supply is the incidence of COVID-19 infections, particularly severe cases requiring hospitalization, across racial groups. It is well documented that COVID-19 infection rates have been higher in Black and Hispanic communities, throughout the course of the pandemic. Goldin's work shows that this depressed the labor supply of women in these groups, both directly due to their exposure to disease and indirectly, through the rise in care needs. The impact of COVID-19 infections and the resulting sequelae on labor supply has not been addressed in economic research and is an important topic for future work.

WILL THE JOBS RETURN? Figures 1 and 4 clearly show that at the end of 2021 both employment and participation had not regained prepandemic values for both men and women. As we look forward to the end of the pandemic, one critical question is whether the labor market will fully recover. Since the 1990–1991 recession, the United States has experienced jobless recoveries, that is, even as GDP and aggregate demand rebounded, labor markets continued to stagnate and employment struggled to attain prerecession levels.

There are two main explanations for jobless recoveries. The first is that the slow and incomplete rebound of employment was due to the adoption of labor-saving technologies, such as automation, leading to a long-run decline in the demand for routine jobs. The resulting job losses are concentrated in recessions, and when the economy recovers, the lost jobs are not reinstated. This phenomenon affects primarily middle-skill workers and is a key mechanism through which the trend toward job polarization has affected business cycles (Acemoglu and Autor 2011; Jaimovich and Siu 2020).

The effects of the pandemic have been mostly felt in service occupations that may seem less amenable to automation. However, the pandemic

4. The distribution of family status of women by race was calculated from the Current Population Survey.

has also given employers an additional incentive to embrace automation, as long as the risk of COVID-19 infection persists. Are jobs that were lost during the COVID-19 recession more or less susceptible to automation?

One way to measure the susceptibility to automation is routine task intensity (RTI), an index developed by Autor and Dorn (2013), which calculates the task inputs in each occupation based on job requirements. Albanesi and Kim (2021) calculate that 34 percent of all jobs in inflexible, high contact occupations were highly susceptible to automation in February 2020, compared to 22 percent of all jobs in inflexible, low contact occupations that are most hit by typical recessions. These findings raise the possibility that employment losses in those occupations may not be fully reversed as the broader economy recovers from the pandemic.

The second explanation for jobless recoveries is the flattening of female labor force participation starting in the early 1990s. In my own work, I have shown that, even before the 1990s, recoveries had been jobless for men. However, as long as female labor force participation was rising briskly, women's employment tended to grow very rapidly in recoveries, sustaining aggregate employment (Albanesi 2019). As the rise in female participation slowed in the 1990s, the growth of women's employment during recoveries became similar to men's, slowing the recovery of aggregate employment. Not only that, but the rise in women's participation, while it lasted, sustained productivity and GDP growth and contributed to increased men's wages. Given the critical role of women's participation for aggregate economic performance in the United States, macroeconomists and policymakers should track this indicator closely and seek to understand its behavior in the trend and over the business cycle.

REFERENCES FOR THE ALBANESI COMMENT

Acemoglu, Daron, and David H. Autor. 2011. "Skills, Tasks and Technologies: Implications for Employment and Earnings." In *Handbook of Labor Economics, Volume 4B*, edited by David Card and Orley Ashenfelter. Amsterdam: North Holland.

Albanesi, Stefania. 2019. "Changing Business Cycles: The Role of Women's Employment." Working Paper 25655. Cambridge, Mass.: National Bureau of Economic Research. https://www.nber.org/papers/w25655.

Albanesi, Stefania, and Jiyeon Kim. 2021. "Effects of the COVID-19 Recession on the US Labor Market: Occupation, Family, and Gender." *Journal of Economic Perspectives* 35, no. 3: 3–24.

Albanesi, Stefania, and Ayşegül Şahin. 2018. "The Gender Unemployment Gap." *Review of Economic Dynamics* 30:47–67.

Autor, David H., and David Dorn. 2013. "The Growth of Low-Skill Service Jobs and the Polarization of the US Labor Market." *American Economic Review*103, no. 5: 1553–97.

Chetty, Raj, John N. Friedman, Nathaniel Hendren, Michael Stepner, and the Opportunity Insights Team. 2020. "The Economic Impacts of COVID-19: Evidence from a New Public Database Built Using Private Sector Data." Working Paper 27431. Cambridge, Mass.: National Bureau of Economic Research. https://www.nber.org/papers/w27431.

Cortes, Patricia, and Jessica Pan. 2018. "Occupation and Gender." In *The Oxford Handbook of Women and the Economy*, edited by Susan L. Averett, Laura M. Arguys, and Saul D. Hoffman. Oxford: Oxford University Press.

Ellieroth, Kathrin. 2019. "Spousal Insurance, Precautionary Labor Supply, and the Business Cycle—A Quantitative Analysis." Meeting Paper 1134. Society for Economic Dynamics.

Jaimovich, Nir, and Henry E. Siu. 2020. "Job Polarization and Jobless Recoveries." *Review of Economics and Statistics* 102, no. 1: 129–47.

COMMENT BY

JANE OLMSTEAD-RUMSEY In this paper, Goldin presents a careful and wide-ranging analysis of women's employment experiences during the coronavirus pandemic, assessing and in some cases correcting popular narratives that have developed about the pandemic's effects on women in the labor market. She examines the role that education levels, childcare responsibilities, telecommuting, occupations, and race have played in shaping labor market outcomes during the pandemic. She argues that the decline in the female labor force participation rate during the pandemic was not large relative to the historical average since the late 1980s, when the increase in women's labor force participation began to slow, and that estimates of the decline depend significantly on the reference month chosen. A robust finding is the rise in caregiving time by women during the pandemic.

My discussion concerns three primary issues. The first of these considers the appropriate counterfactual for labor force participation rates absent the pandemic, including a closer examination of the rise in female labor force participation prior to the pandemic. The second relates to the long-run impact of the pandemic on women through changes in the availability of remote work. The third considers policy implications of "she-cessions" compared to "man-cessions."

LABOR FORCE PARTICIPATION RATES Prior to the start of the pandemic, the US economy had been in a long expansionary period. In August 2020 the Federal Reserve announced changes to its long-run monetary policy strategy, explicitly describing its maximum employment mandate as a "broad-based