IJORP
International Journal of Research and Publications

The Distributional Impact of Recessions and the Global Financial Crisis: Using USA as a reference.

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Abstract

Using the U.S. Current Population Survey data, this paper compares the distributional impacts of the Pandemic Crisis and those of the Global Financial Crisis in terms of (i) worker characteristics, (ii) job characteristics–"social" (where individuals interact to consume goods), "teleworkable" (where individuals have the option of working at home), and "essential" jobs (which were not subject to government mandated shut-downs during the recent recession), and (iii) wage distributions. We find that young and less educated workers have always been affected more in recessions, while women and Hispanics were more severely affected during the Pandemic Recession. Surprisingly, teleworkable, social and essential jobs have been historically less cyclical. This historical acyclicality of teleworkable occupations is attributable to its higher share of skilled workers. Unlike during the Global Financial Crisis, however, employment in social industries fell more whereas employment in teleworkable and essential jobs fell less during the Pandemic Crisis. Lastly, during both recessions, workers at low-income earnings have suffered more than topincome earners, suggesting a significant distributional impact of the two recessions.

Keywords: Labor Market Dynamics, Current Population Survey, COVID-19 Pandemic, Gross Worker Flows, Distributional Impact

Introduction

The novel coronavirus, also known as SARS-CoV-2, had significantly impacted the U.S. labor market. The Bureau of Labor Statistics (BLS) data for April 2020 show that the U.S. unemployment rate has increased to 14.7 percent from 3.5 percent in February 2020. During the same period, the employment-to-population ratio has plummeted from 61.1 percent to 51.3 percent. The government's shutdown and social-distancing policies had differential impacts on the types of jobs that had been lost. On one hand, the government allowed continued operations of "essential" industries, such as health care workers, water utilities, and grocery stores. On the other hand, the social-distancing policy prohibited operations of "social jobs" that require physical interactions, such as leisure and hospitality industries. Moreover, while some workers could start working from home, others could not work without going into their workplace, such as workers at grocery stores.

The purpose of this paper is two fold: (i) to study the differential impacts on employment,

unemployment rate, and hours worked across different segments of the economy and (ii) to compare the labor market impacts of the current Pandemic Recession to those of the Global Financial Crisis. In particular, we focus on (i) demographic characteristics of workers–age, gender, race, and education, (ii) three types of job characteristics–"essential" (which were not subject to government mandated shutdowns during the current Pandemic recession), "social" (where consumption of goods require human interactions) and "teleworkable" (where individuals have the option of working at home)–, and (iii) wage distributions of workers.

Using U.S. Current Population Survey data, we show that teleworkable and essential jobs are less affected during the current Pandemic Recession while social jobs have been affected severely. Surprisingly, however, we show that all three types of jobs have been less affected (or less cyclical) during the 2008 Global Financial Crisis. Moreover, the resilience (acyclicality) of teleworkable jobs to the negative aggregate shocks during the Global Financial Crisis can be attributable to the fact that a large share of workers in teleworkable jobs is skilled or highly-educated workers–who have been historically less affected in any recession.

Looking at demographic characteristics of workers, this paper corroborates the findings of other research in that Hispanic and female workers have been more severely affected than their counterparts during the current Pandemic Recession. Less educated and young workers have always been affected more severely than their more educated and older counterparts in both recessions (the Global Financial Crisis and the current Pandemic recession). Interestingly, the data still does not show an evidence of older workers, who are known to have a higher mortality risk from COVID-19, getting more severely affected in terms of job loss.

Finally, the Global Financial Crisis and the current Pandemic recession both had a significant negative distributional impact in terms of job prospects. Low-income earners had a much higher chance of job loss than those at the top wage quantile. This differential impact of the job separation rates was much more stark during the current Pandemic recession. This result holds true even after accounting for worker characteristics as well as occupation, industry, and state fixed effects, and corroborates the finding of Cajner et al. (2020), who have used administrative payroll data.

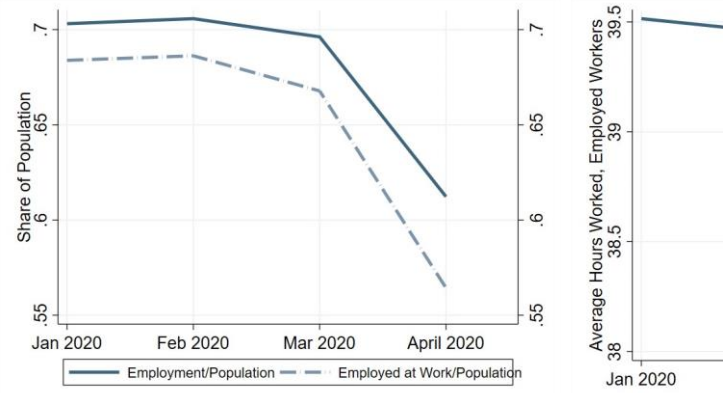
This paper complements the existing literature in several ways: (i) we compare the current recession with the Global Financial Crisis and show that teleworkable jobs have historically been less affected (cyclical) than other jobs, mainly due to their large share of skilled workers; (ii) we also highlight the importance of looking at both occupation and industry by showing large heterogeneity within occupation x industry pairs in terms of their degree of being teleworkable, social, and essential (e.g. Dingel and Neiman (2020), Mongey et al. (2020), and Kaplan et al. (2020)); and (iii) we also corroborate that low wage earners suffer more in terms of job loss both during the current recession and the Global Financial Crisis, but particularly so during the current recession.

Related literature

A sizable literature has emerged seeking to understand the macroeconomic impact of the novel coronavirus. A subset of this literature employs economic theory to understand the tradeoffs between minimizing adverse health effects and mitigating economic disruptions (Alvarez et al., 2020; Eichenbaum et al., 2020; Jones et al., 2020; Kaplan et al., 2020). Others provide high-frequency data to track the impact of the coronavirus on small businesses (Bartik et al., 2020b), economic uncertainty (Baker et al., 2020a), consumption and debt (Baker et al., 2020c), stock market volatility (Baker et al., 2020b), and broad economic activity (Lewis et al., 2020). Two recent papers – Dingel and Neiman (2020) and Mongey et al. (2020) – predict heterogeneous employment losses during the current recession based on job characteristics, such as the ability to work at home, or whether the sector requires social interaction, which we test in the CPS data.

This paper most closely relates to the rapidly growing segment of empirical literature which monitors the labor market during the beginning of the Pandemic Recession. Cajner et al. (2020) use weekly paycheck data from ADP – the largest U.S. payroll processing company – to study the behavior of different segments of the U.S. labor market through mid-April. They find that employment declines have been concentrated at the bottom of the wage distribution, amongst the youngest and eldest of the population, and in social industries.

Figure 1: Aggregate Employment and Ave



Aggregate Employment and Hours Declines during the Pandemic Recession

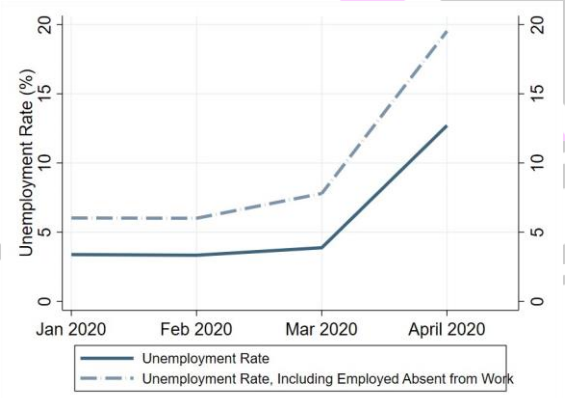
This section summarizes the aggregate employment decline in the United States during the first few months of the Pandemic recession. Figure 1 shows the trend in the aggregate employment rate for individuals aged 21 to 70 between January and April 2020. We highlight two employment rate series: the first tracks those who report being employed while the second excludes those who report being employed but were absent from work during the survey week. As seen from the figure, the U.S. employment to population rate for this age groups fell by almost nine percent during this period. The decline was even steeper – at 12 percent – excluding workers who were absent from work from the employment measure. Figure 1 also shows the average hours worked for all individuals aged 21 to 70 who remained employed with positive hours through April 2020 (solid line). Hours worked for those that remained employed fell by 3.3 percent or 1.3 hrs.

How much of total decline in hours worked has occurred on the extensive margin vs the intensive margin? Aggregate hours worked including both the extensive and intensive margin changes has fallen by 17.3 percent between January and April 2020. Using the results above, 80 percent of the decline in aggregate hours (or -13.8 percent) is attributable to the extensive margin (decline in employment rate) while 20 percent (or -3.4 percent) is attributable to the intensive margin (hours worked).

Figure 2 plots trends in the unemployment rate for 21-70 year old during the same period.

Again, we compute two unemployment measures. First, we measure the unemployed as

Figure 2: Unemployment Rate

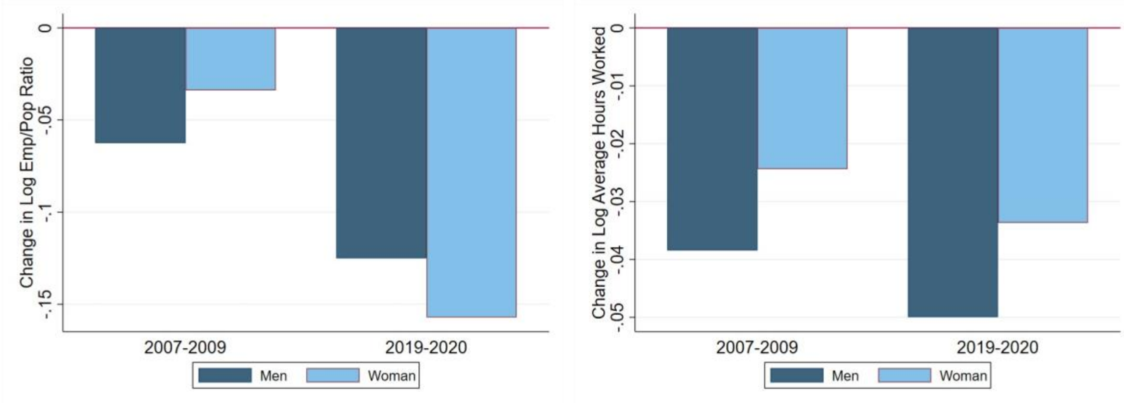


This is the standard unemployment measure. For our second measure, we also include those who report being employed but were absent from work as also being unemployed. The unemployment rate for workers between 21-70 years old have increased by 9.3 percent between January and April 2020. An alternative measure of unemployment rate, which includes those who report being employed but were absent from work as also being unemployed, has increased by 13.5 percent from 6 percent to 19.5 percent during the same period.

The Distributional Effects of the Pandemic Recession vs the Global Financial Crisis by Demographic Groups

In this section, we investigate whether the group of workers who have been more severely affected during the current Pandemic recession had also been severely affected during the 2008 Global Financial Crisis. Specifically, we study changes in both the extensive (employment rate) and intensive (average hours worked) margin of employment between 2007 and 2009 against those between 2019 and April 2020 across (i) gender, (ii) race, (iii) age group, and (iv) educational attainment. We show that while the magnitude of decline in employment and hours worked is much severe during this current recession than during the Global Financial Crisis, the groups of workers suffered relatively more (younger, less educated and non-whites workers) were similar between the two recessions. One key difference between the two recessions is that women saw a sharper decline in employment during the current recession than during the Global Financial Crisis.

Figure 3: Extensive/Intensive Margin during 2007-2009 and 2019-April 2020 by Sex



Gender

Figure 3 plots the changes in log employment to population ratio and the log average hours worked by gender between 2007-2009 and 2019-April 2020. Whereas men suffered more in terms of employment (extensive margin) in 2007-2009, women got more heavily affected during the current Pandemic recession. However, conditional on being employed, the average hours worked declined less for women during both during the Global Financial Crisis and the current Pandemic recession. However, as we show later in Section 6, a major part of the decline in employment rate for women during this recession is attributable to the fact that women are more likely to work in the industries and occupations that were affected more severely during the current Pandemic recession.

Age Group

Figure 4 below plots the changes in extensive and intensive margin of employment for 2007-2009 and 2019-April 2020 for age groups by every 10 years and Compared to the GFC, younger workers, 21-30 years old, ...nent during the ... the other age ... in log average ...n) was similar ...he exception of ... years old.

Race

Figure 5 below plots the changes in extensive and intensive margin of employment for 2007-2009 and 2019-April 2020 by race. Compared to the Global Financial Crisis, employment rates for black and Hispanic workers declined more severely than other racial groups, particularly during the current recession. The hours worked declined least for Asian workers.

4: Extensive/Intensive Margin during 2007-2009 a

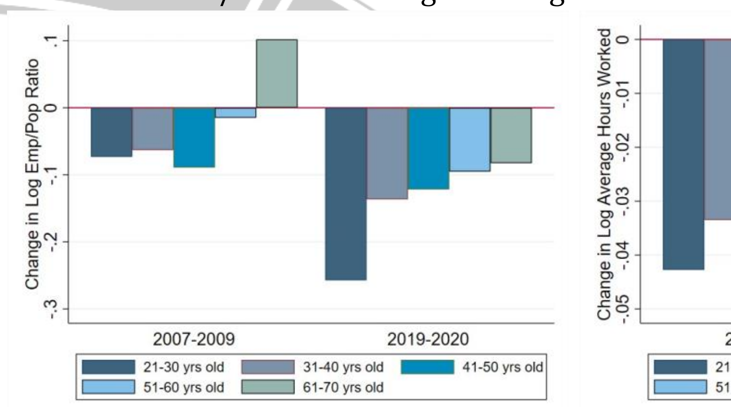
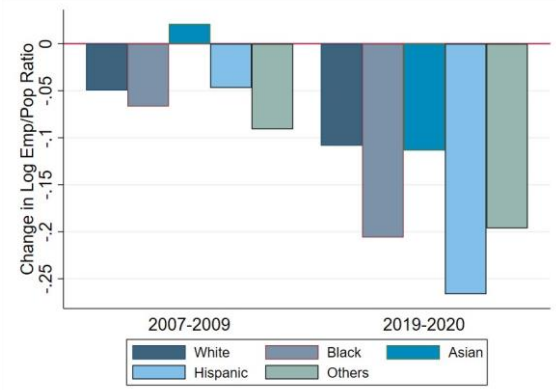
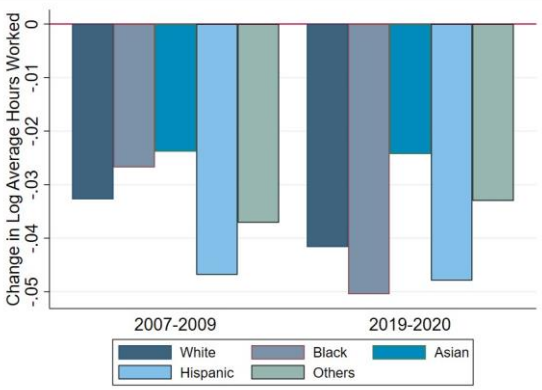


Figure 5: Extensive/Intensive Margin during 2007-2009 and 2019-April 2020 by Race

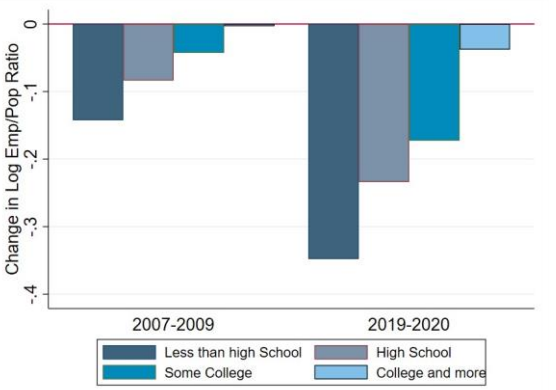


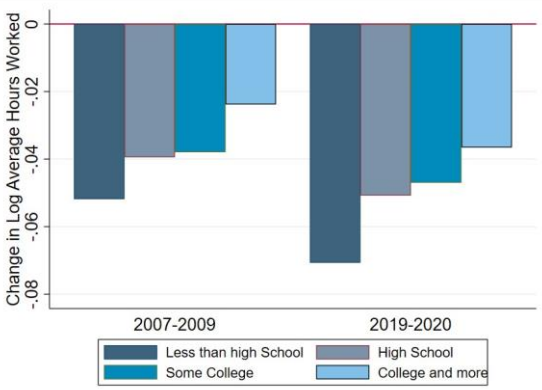


Education

Figure 6 plots the changes in extensive and intensive margin of employment for 20072009 and 2019-April 2020 by educational attainment level. While the magnitudes of decline in both employment rate and average hours worked are more severe during the current recession, the pattern of relative decline is very similar across educational groups between the two recessions. Less educated workers have seen a much sharper decline in both the employment rate and the average hours worked than more educated workers.

6: Extensive/Intensive Margin during 2007-2009 and 2019April 2020by Education





Empirical Analysis of Labor Market Recession vs

nges in average lifferent lifferent occupation and industries, with special focus on their teleworkability, socialbility, and essentiability. In this section, we formally test if the current recession has seen a very different pattern from the previous recession in terms of the decline in employment and average hours worked. Our empirical specification is as follows:

$$\Delta(Y_{it}-Y_t) = \alpha_{tw}Occ_{TW}+\alpha_s Ind_S+\alpha_e Ind_E+\gamma X_{it}+Pa$$

where $(\Delta Y_{it} - \Delta Y_t)$ is a change in log employment or unemployment rate at a occupation × industry cell level (ΔY_{it}) after subtracting the aggregate change in ession to e size of Financial Pandemic Ind_E are pation × workable , or an essential industry. Pandemic is an indicator variable that is equal to 1 if ΔY_{it}

is the change between 2019 and April 2020 and zero if it is the change between 2007 and 2009. α's capture the relative change in log employment or unemployment rate for teleworkable, social, and essential jobs during the Global Financial Crisis. β's are the variables of our interest, which captures differential changes in log employment or unemployment rate during the Pandemic recession. The total changes in the left hand side variables for the pandemic recession are given by the sum of α_k and β_k for $k \in \{TW,S,E\}$. We restrict our occupation x industry pairs to the ones with more than 10 observations, leaving us with 700 observations for our regression analysis.

Conclusion

This paper studies the differential impacts of recessions on employment, unemployment rate, and hours worked across different segments of the economy during the current Pandemic Recession and the Global Financial Crisis. In particular, we focus on (i) demographic characteristics of workers–age, gender, race, and education, (ii) three types of job characteristics– "essential" (which were not subject to government mandated shutdowns during the current Pandemic recession), "social" (where consumption of goods require human interactions) and "teleworkable" (where individuals have the option of working at home)–, and (iii) wage distributions of workers.

We document that teleworkable and essential jobs are less affected during the current Pandemic Recession while social jobs have been affected severely. Surprisingly, however, we show that all three types of jobs have been less affected (or less cyclical) during the 2008 Global Financial Crisis. Furthermore, the resilience (acyclicality) of teleworkable jobs to the negative aggregate shocks during the Global Financial Crisis can be attributable to the fact that a large share of workers in teleowrkable jobs consists of skilled or highly-educated workers–who have been historically less affected in any recession.

With regards to workers' demographic characteristics, this paper corroborates the findings of other research in that Hispanic and female workers have been more severely affected than their counterparts during the current Pandemic Recession. Less educated and young workers have always been affected more severely than their more educated and older counterparts in both recessions (the Global Financial Crisis and the current Pandemic recession).

Finally, the Global Financial Crisis and the current Pandemic recession both had a significant negative distributional impact in terms of job prospects. Low-income earners had suffered more from job loss than top-income earners. This

differential impact of the job separation rates was much more stark during the current Pandemic recession.

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