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IZA DP No. 14272

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ABSTRACT

The Effect of a Health and Economic Shock on the Gender, Ethnic and Racial Gap in Labor Market Outcomes: Evidence from COVID-19

With more than 29 million confirmed cases of Covid-19 in the U.S. and 119 million cases worldwide, the pandemic has affected companies, households and the global economy. We explore the effect of this health and economic shock on labor market outcomes, and the changes in labor market disparities between ethnic groups and genders. The results provide evidence of an adverse effect of Covid-19 on labor market outcomes of all demographic groups, a widening gap between the employment prospects of minorities and whites, but no change in the earnings gaps between racial and ethnic groups. We also do not find a deterioration of the differentials between genders. The findings have implications related to the priorities of policy decision makers when implementing policies to combat race and ethnic, and gender gaps in the labor market.

JEL Classification: J70, J71, J01, J15, J23

Keywords: labor market, ethnic disparities, gender disparities, inequality, health and economic shock, COVID-19

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1. Introduction

Covid-19 is an infectious disease caused by a severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first cases were registered in Wuhan, China in December 2019 (WHO 2020). The disease rapidly spread across the globe and the first non-travel related case in the United States occurred at the end of February (CDC 2020). As of March 2021, there have been more than 119 million confirmed and 2.64 million lethal cases worldwide, out of which more than 29 million confirmed and about 532,000 lethal instances in the U.S. (John Hopkins University 2021). Social distancing requirements and uncertainty have led many businesses to shut down, leading to about 30 million workers losing their jobs in the spring of 2020 (The Wall Street Journal 2020), and a 32.9% decline in GDP in the second quarter of 2020, pushing the U.S. economy into the most severe recession in the history (Trading economics 2020). However, Covid-19 has affected different sectors of the economy to a different extent. This raises concerns about the differential effect of the pandemic on different races or ethnicities and genders. These effects are useful for re-evaluation of the target groups of public policies addressing inequality.

This paper explores the impact of Covid-19 on labor market outcomes and disparities in these outcomes between individuals of different gender, racial and ethnic groups. Our emphasis is on whether there is a difference in the disparity between demographic groups after compared to before the outbreak. Specifically, we test the hypothesis that the pandemic has deteriorated the racial and ethnic, and gender gap in labor market experiences in the U.S.

Existing literature provides evidence of discrimination against minorities and women in the labor market. It also documents that recessions have different impact on distinct demographic groups. For instance, the Great Recession and the economic downturn in the 1980s affected workers of different races and ethnicities, ages, gender and educational attainment to different extent (Elsby et al. 2010, Hoynes et al. 2012). Given the recent outbreak of Covid-19, there is not much research of the differential effect of this exogenous shock on labor market outcomes. We extend the literature in several ways. First, we explore whether there is a statistically significant association between Covid-19 and labor market outcomes, including employment, absence of employed workers from work, earnings, hours worked per week, and weeks of unemployment. Second, we investigate the differential impact of the shock on the disparities in labor market outcomes between demographic groups, that is the change in labor market gaps between racial

and ethnic groups and genders. Finally, we discuss the implications of the results for policy decision making.

The results provide evidence of the adverse effect of Covid-19 on labor market experiences of all workers. Specifically, the likelihood of employment declined by 5.4%, the chances of not being at work increased, and the weekly hours worked declined. Minorities became less likely to be employed than whites after relative to prior the pandemic, implying a widening gap in the employment prospects of individuals of different racial and ethnic groups. The differential between Hispanics and Whites increased the most. In addition, hours worked of Hispanic workers relative to those of White workers declined after relative to before the pandemic. This change is driven primarily by married individuals with children. However, we do not observe a significant change in the earnings gap of different races and ethnicities after compared to prior to March 2020. Additionally, although women tend to work and earn less than men in general, the gap in the employment prospects and the earnings gap of the two genders narrowed as a result of the health and economic shock, although the magnitude of the difference is negligible. These findings imply that the adverse effect of Covid-19 was reflected mostly in the gap between racial and ethnic rather than gender disparities.

The remainder of this paper is structured as follows. Section 2 summarizes the most relevant aspects of the literature. A specification of the empirical model is provided in Section 3. We discuss the data and provide summary statistics in Section 4. Results are presented in Section 5. In Section 6, we discuss the policy implications of our research. Section 7 concludes the paper.

2. Literature review

Literature on labor market discrimination predominantly focuses on gender, race/ethnicity and age disparities in earnings and employment.

Race and ethnicity

In a detailed review of this literature, Neumark (2018) states that the wage and employment gap between black and white men has been persistent in the US (Neumark 2018). Controlling for productivity and age narrows the wage gap between races (Neal and Johnson 1996). Yet, Kochhar (2008) find that the median weekly earnings of full-time Hispanics are about 32% lower than those of whites (Kochhar 2008). Similarly, McCall (2001) finds that the wages of Latina

women are 85.3% and 97.4% of those of white women, respectively when education and other differences across groups are not and are controlled for. However, they do not find a significant difference in the average hourly wage between Asian and white men (McCall 2001).

Most of the wage gap between minorities and whites is explained by productivity differences (O'Neill et al. 2005). Carneiro et al. (2005) suggest that expectations can also be a source of this gap, and show that for all minorities except black male, the wage gap disappears once ability is taken into account. Although Hispanics and blacks begin with similar cognitive and non-cognitive deficits, live in similar disadvantaged neighborhoods, go to schools of similar quality, and Hispanics have less schooling than blacks, Hispanics have significantly higher test score by the time they reach adulthood. Conditional on these test scores, Carneiro et al. (2005) finds no wage gap between Hispanics and whites, which contradicts with the findings of Kochhar (2008) and McCall (2001). Quantitatively, Snipp et al. (2016) find that the wage gap between black and white men, which cannot be explained by education and other differences, has been declining since 1969 (Snipp et al. 2016).

Race and ethnicity also serve as signals in the labor market and as such, influence employment and promotion opportunities. Specifically, a vignette study conducted by Blommaert et al. (2014) in the Netherlands finds that when employers examine resumes which signal ethnicity and parents' country of birth, they think that minority applicants are less suitable for the job although the differences are small. Similarly, a field experiment that involves sending resumes to job ads by randomly assigning names which sound African-American or White shows that perceived race matters in that people with White-sounding names receive 50% more callbacks for interviews. This trend persists across industries, occupations and employer size (Bertrand et al. 2004). It is also consistent with the findings of Lang et al. (2012) which show a difference of 7.8 percentage points between labor force participation rate of black compared to white men at ages 25 – 54, and an unemployment rate gap of 4.6 percentage points.

Gender

Blau et al. (2017) find about 22% difference in the annual earnings of full-time, year-round men and women, and 18% difference in their earnings per week (Blau et al. 2017). Wage differences between genders can be explained by the years of job experience (O'Neill et al. 2005), choice of part-time and full-time work (O'Neill et al. 2005), occupational choice and time

allocation (Erosa et al. 2017), job characteristics chosen by men and women (O'Neill et al. 2005), or differences in expected productivity (Aigner et al. 1977). Women are disproportionately represented in lower average hours occupations in the US (Erosa et al. 2017), and tend to have less work experience because of the division of labor within a family (Blau et al. 2000). They expect shorter and discontinuous work, which gives them an incentive to invest less in education and on-the-job training. This results in lower human capital accumulation, leading to a lower wage (Blau et al. 2000).

The remaining, unexplained wage differentials between genders the literature considers as discrimination (Becker 1957). It does not necessarily have to be conscious. There is evidence of unconscious, or implicit discrimination (e.g., Devine 1989). For example, a lab experiment study conducted by Reuben et al. (2014) shows that when employers do not have information about workers' ability, they are more likely to hire males to perform a math task. A similar vignette study shows that bank managers are less willing to promote females (Rosen et al. 1974).

Yet, while gender-based discrimination has been declining since 1975, and is less persistent than race and ethnicity disparities (Blau et al. 2000, Neumark 2018).

Other sources of discrimination

Another discrimination trigger is age. Younger workers generally find jobs more easily (Neumark 2018) and are more likely to be recommended for promotion (Rosen et al. 1977), but older workers earn more (Neumark 2018). Studies on discrimination also find a positive association between physical attractiveness of workers and their earnings (Hamermesh 2011) and a positive association between height and average earnings (Cinnirella et al. 2009). Cinnirella et al. (2009) find that the latter is true only for employed workers and not self-employed, so at least part of the relationship has to be explained by employer discrimination rather than sorting of taller people into more highly-paid jobs. There is also evidence of job discrimination against obese applicants (Rudolph et al. 2009, Baum et al. 2004, Lundborg et al. 2014).

Exogenous shocks and labor market discrimination

Despite the evidence that discriminatory practices have been declining since 1975, there is still evidence of discrimination in the labor market. Recessions have a different adverse impact on different demographic groups based on ages, gender, ethnicity and education (Elsby et al.

2010, Hoynes et al. 2012). The adverse effect of both the Great Recession and the recession in the early 1980s on labor market outcomes was the largest for men, black and Hispanic, young and less educated people (Elsby et al. 2010, Hoynes et al. 2012). Hoynes et al. (2012) find that the economic downturn during the Great Recession was longer and more severe than that in the 1980s, while Elsby et al. (2010) show that employment, labor force participation, and adjustment of labor input (hours worked and workers) until the latter half of 2009 were similar to those in earlier recessions. Elsby et al. (2010) also find a record increase in long-term unemployment.

Finally, a recent working paper by Montenovo et al. (2020) shows that the decline in employment due to Covid-19 was larger for Hispanics, individuals with high school diplomas and younger workers. More layoffs were observed in occupations which are hard to be performed remotely because they require interpersonal contacts.

Despite the latter evidence and interest in the literature on discrimination, there are surprisingly not many more papers which examine the effects of health and economic shocks on ethnic and gender disparities in the workplace. We extend prior literature by investigating the association between an exogenous economic and health shock determined by the Covid-19 pandemic on labor market outcomes. We also examine the effect of this shock on disparities between demographic groups, specifically racial and ethnic groups and genders. To the best of our knowledge, this is the first article that examines the changes in these disparities in the context of Covid-19.

3. Empirical strategy

Common approaches to test for labor market discrimination in the literature include (the traditional) regression decompositions (e.g., Oaxaca 1973, Neumark 1988) and comparisons of productivity differences to wage differentials (Hellerstein et al. 1999). Alternatively, Veenman (2010) recommends using a combination of approaches to study discrimination, such as statistical observation data analysis, attitude and behavioral approach because every method has limitations.

In this paper, we test the hypothesis that race and ethnicity, and gender disparities in the labor market have deteriorated during the health and economic shock of the Covid-19 pandemic. In other words, we explore whether there is a change in the differences in labor market outcomes between racial and ethnic groups, and genders as a result of the pandemic. The empirical strategy

uses the pandemic and differences across demographic groups as a source of variation in labor market outcomes. There are differences over time because of the outbreak of the virus. There is also variation across demographic groups classified by race and ethnicity and gender.

We consider distinct labor market outcomes, denoted by $LmktOutcome$, as dependent variables in separate regressions. The following is the equation we estimate to test for disparities between racial and ethnic groups:

$$LmktOutcome_i = \beta_0 + \sum_r \boldsymbol{\gamma}_r * \boldsymbol{Ethnicity}_{ir} + \rho * Post_i + \sum_r \boldsymbol{\delta}_r * \boldsymbol{Ethnicity}_{ir} * Post_i + \boldsymbol{X\vartheta} + \varepsilon \quad \text{(Eq. 1)}$$

In this equation, subscripts i and r denote individuals, and race and ethnicity, respectively. $Ethnicity$ is a set of indicators denoting whether an individual is black, white, Hispanic, or another race/ethnicity. The omitted category is white. The variable $Post$ is a dummy variable which equals 1 if the time of the interview was after March 2020, that is after the beginning of the Covid-19 pandemic, and takes a value of zero for earlier time periods. The term X is a vector of control variables. Finally, ε is a random disturbance term.

The coefficients of interest are $\boldsymbol{\delta}_r$, that is the coefficients of the interactions of races and ethnicities with the post-outbreak indicator. They measure the effect of the pandemic on labor market outcomes of the respective race or ethnicity relative to whites, after relative to before the outbreak. The advantage of this specification with interaction terms compared with methodologies used by prior authors is that it alleviates concerns about inherent differences in productivity of different groups of workers because we compare the gaps between the experiences of groups after compared to before the shock, rather than the outcomes themselves. This eliminates the need to use a proxy for productivity, such as the Armed Forces Qualifying Test (AFQT) score previous authors (e.g., O'Neill et al. 2005, Neal et al. 1996, etc.) who study differences in the absolute outcome (not differences) of distinct groups of workers have used.

The different labor market outcomes $LmktOutcome_i$ we consider include employment, an indicator for employment but not at work in the previous week, natural logarithm of the hours worked per week, number of weeks of being unemployed (if unemployed), and natural logarithm of weekly earnings. In the instances where the dependent variable is binary, we estimate a modified version of Eq. 1 in the form of a Probit regression model as follows:

$$Prob(LmktOutcome)_i = \Phi(\beta_0 + \sum_r \boldsymbol{\gamma}_r * \boldsymbol{Ethnicity}_{ir} + \rho * Post_t + \sum_r \boldsymbol{\delta}_r * \boldsymbol{Ethnicity}_{ir} * Post_i + \boldsymbol{X\vartheta} + \varepsilon) \quad \text{(Eq. 2)}$$

We fit models similar to (1) and (2) to investigate differences in the effect of the pandemic on gender inequality in the labor market:

$$LmktOutcome_i = \beta_0 + \gamma * Gender_i + \rho * Post_i + \delta * Gender_i * Post_i + \boldsymbol{X\vartheta} + \varepsilon \quad \text{(Eq. 3)}$$

In this equation, $Gender$ is an indicator that takes a value of 1 if the respondent is a female, and 0, otherwise. The omitted category is male. The coefficient of the interaction term δ reflects the differential impact of Covid-19 on labor market outcomes of female relative to male workers. Similarly to the investigation of racial and ethnic differences, we transform Eq. 3 to a Probit model to estimate the effects of the pandemic on binary labor market outcomes:

$$Prob(LmktOutcome)_i = \Phi(\beta_0 + \gamma * Gender_i + \rho * Post_i + \delta * Gender_i * Post_i + \boldsymbol{X\vartheta} + \varepsilon) \quad \text{(Eq. 4)}$$

Further, we estimate a model in which in addition to the forementioned interaction terms, we also include such terms of different race and ethnicity indicators with $Gender$ and $Post$, as well as race and ethnicity – gender interactions. In these regressions, the coefficients of the race/ethnicity – gender – Post variables indicate the impact of the shock on labor market differentials of individuals of different race and ethnicity and gender relative to the baseline group of white male workers before the outbreak of Covid-19. This intersectionality analysis is a natural continuation of investigating racial and ethnic disparities separately from gender ones.

To examine the main drivers of the effects of interest and to check the sensitivity of the findings, we estimate the major regressions in subsamples of individuals who are married, single, with and without a child under 21. In addition, as robustness checks, we estimate logistic in addition to Probit regressions when the outcome is dichotomous. Finally, the time period used in the paper, specifically from January 2018 to June 2020, with a March 2020 cutoff for the pandemic produces an unbalanced pre-post periods. To explore the effects of interest "right before" compared to "right after" the threshold date, we estimate the main regressions using data only from the three months before and the three months after the outbreak. This experiment serves as an additional robustness test.

4. Data and descriptive statistics

Data for this study are collected from the Current Population Survey (CPS) from January 2018 to June 2020. CPS is a monthly, voluntary survey of about 60,000 households per month, conducted to provide major labor force statistics in the U.S., including information about employment and well-being of Americans. Our sample consists of 3,537,120 observations. The survey is administered by the U.S. Census Bureau. Participants can be from any of the 50 states or the District of Columbia, and must be 15 years old or older to participate.

In our analysis, we need data on the employment and earnings which are available in CPS. Specifically, we use variables that elicit information about respondents' employment status (employed or not), hours worked per week (if employed), an indicator for whether the respondent is employed but has not been at work in the week prior to the interview, number of weeks of unemployment (if currently unemployed), and weekly earnings. These variables serve as outcome variables in our empirical analysis.

The main explanatory variables reflect the gender and race/ethnicity of the respondents. We use a dummy variable indicating gender, which takes a value of 1 if the respondent is a female, and 0 if the respondent is a man. We distinguish between white, black, Hispanic and people of another race/ethnicity. The precise definitions of each of these major racial or ethnic groups are described in detail in Appendix A1 of this paper.

The survey also allows us to construct a set of control variables, including age, marital status, household size, number of children, age of the youngest child, highest educational attainment (high school diploma and/or some college, bachelor's degree, or higher degree), an indicator for having retired, and employment status of the spouse. Education level below a high school diploma is the omitted category capturing respondents' highest educational attainment. The variable denoting marital status is an indicator which equals 1 if the respondent is married, and zero if (s)he is single/ never married, separated, widowed or divorced.

We finally construct an indicator which takes the value of 1 if the interview was conducted after the beginning of the Covid-19 outbreak in March 2020, and 0 if data were collected prior to the pandemic. Interaction terms between dummy variables capturing gender, race/ethnicity and post-outbreak period are also included. All variables used in the analysis and their descriptions are provided in Appendix A1.

Table 1 provides summary statistics of the variables used in the empirical analysis. In Table 2, we summarize the outcomes categorized by race and ethnicity (Panel A) and gender (Panel B), pre- and post-outbreak periods.

In our sample, 58.2% of the respondents are employed out of which 2.2% have not gone to work in the week prior to the interview although they were employed. The average worker works 38.8 hours a week. The average number of weeks of remaining unemployed is 17 with a standard deviation of 25 weeks. Female respondents represent 51.4% of the sample. About two thirds of the respondents are white (68%), followed by Hispanics (14.5%), Black (9.95%) and individuals of other races and ethnicities (7.5%).

The average age of respondents in CPS is about 40, while the age of the youngest child under 21 they have is a little older than 8. A little more than half of the respondents are married (51.9%), and the average household consists of 3 people. The highest educational attainment of 54.6% and 20.1% of the participants in the survey is a high school diploma and/or some college, and a bachelor's degree, respectively. About 11% of the respondents have a higher than a bachelor's degree.

Table 1. Summary statistics

Variable	Mean	Std. deviation
Female	0.514	0.500
Age	40.379	23.312
Married	0.519	0.500
HhSize	3.131	1.682
NumChildrenUnder21	0.442	0.968
AgeYoungestChildUnder21	8.481	6.040
HSdiploma	0.546	0.498
BAdegree	0.201	0.400
HigherDegree	0.116	0.320
SpouseEmployed	0.641	0.480
Black	0.0995	0.299

Hispanic	0.145	0.352
Other	0.075	0.264
White	0.680	0.466
HoursWorkWk	38.816	13.110
Employed	0.582	0.493
EmployedNotAtWorkLastWeek	0.022	0.146
WeeksUnemployed	17.484	25.198
WeeklyEarnings	1004.586	707.550
HourlyWage	18.677	10.433
Post	0.083	0.276

Note: Source of the data: Current Population Survey (CPS), Jan. 2018 – June 2020.

As Table 2 suggests, both male and female respondents worked fewer hours after the beginning of the pandemic and fewer individuals of both genders were employed. Specifically, while 64.1% of men and 54% of women were employed in the pre-shock period, 56.6% and 46.4% of male and female respondents, respectively, had a job afterwards. The hours worked per week declined from 41.126 to 39.959 for men, and from 36.404 to 35.711 for women. Women are generally less likely to be employed and if employed, work fewer hours. The percentage of people of both genders who said they were not at work the previous week although employed increased after March 2020 although the proportion of workers in this category was still between 3 and 4% for both genders. Interestingly, the earnings of the employed people increased after the outbreak. Combined with the fact that fewer people were employed after the outbreak, these trends might imply that employers preferred to keep fewer workers working more rather than keep more workers with reduced hours worked. Alternatively, this can be explained by the rise of highly paying industries.

Table 2. Summary statistics: labor market outcomes by gender and race/ethnicity

Panel A. Gender classification

Variable	All		Male		Female	
	Pre	Post	Pre	Post	Pre	Post

HoursWorkWk	38.880	37.988	41.126	39.959	36.404	35.711
Employed	0.588	0.513	0.641	0.566	0.540	0.464
EmployedNotAtWorkLastWeek	0.021	0.034	0.019	0.031	0.022	0.036
WeeksUnemployed	19.624	9.833	20.219	10.252	18.937	9.439
WeeklyEarnings	996.558	1096.304	1130.74	1227.685	857.772	957.758
HourlyWage	18.572	19.993	19.758	21.224	17.435	18.797

Panel B. Race/ethnicity classification

Variable	Black		White		Hispanic		Other	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
HoursWorkWk	38.808	37.796	39.056	38.175	38.160	36.983	38.661	38.013
Employed	0.544	0.461	0.589	0.520	0.617	0.513	0.592	0.509
EmployedNotAtWorkLastWeek	0.018	0.036	0.022	0.032	0.018	0.037	0.020	0.041
WeeksUnemployed	24.430	12.450	18.690	9.423	17.462	9.529	21.187	9.979
WeeklyEarnings	823.075	928.207	1055.2	1143.636	777.914	885.043	1099.158	1233.173
HourlyWage	16.198	17.730	19.451	20.681	16.476	18.141	19.415	21.292

Note: Source of the data: Current Population Survey (CPS), Jan. 2018 – June 2020. The table presents the means of the outcome variables used in the analysis classified by gender and race/ethnicity, before and after the outbreak of Covid-19 in March 2020.

We observe similar trends when we look at racial and ethnic differences in the labor market. Based on the proportion of people employed and hours worked, all races and ethnicities were adversely affected by the pandemic, with the Hispanic population being hit the most. Although the hours working Hispanics declined slightly, the percentage of people employed declined by about 10% (from 61.7% to 51.3%).

5. Results

We explore the change in labor market disparities between racial and ethnic groups after compared to before the Covid-19 outbreak in Table 3, while Table 4 reports the results from an

examination of changes in gender differences. The results reveal several findings. First, unsurprisingly, after the Covid-19 outbreak, the likelihood of being employed declined by 5.4% while the probability of not being at work despite being employed increased by 1.4%. The hours worked per week declined. All forementioned effects are highly statistically significant at 1% confidence level. Interestingly, we observe a slight increase in the earnings of employed individuals. This might indicate that the workers who remained employed work in more highly paid industries than the ones who remained unemployed. It is also likely that businesses responded to the pandemic by laying off some workers, consistent with the lower likelihood of being employed, while keeping the wages of the remaining, employed workers at slightly higher levels to incentivize these remaining workers to increase their productivity. Alternatively, the pandemic might have given rise to new industries in which salaries are high enough to increase the average weekly earnings of the working population.

Second, Blacks, Hispanics and individuals of other ethnic and racial groups as defined in the data section became 0.6%, 2.4%, and 1.8%, respectively, less likely to be employed compared to whites, after relative to prior to the outbreak. The finding that employment prospects of Hispanics were most adversely affected compared to those of other races and ethnicities is consistent with the results of Montenovo et al. (2020). In addition, all three groups became about 1% more likely to not be at work despite being employed compared to white workers, after compared to before the pandemic. These effects are also highly statistically significant, implying that the health and economic shock caused by Covid-19 has worsened the pre-existing gap between whites and disadvantaged groups in the labor market. Further, Hispanics' hours worked relative to the hours worked by White workers declined after relative to before the Covid-19 outbreak although the magnitude of the effect is small. A potential explanation of the reduction might be that the Hispanic population often works in the services sector, which is more likely to be adversely affected by lockdown orders and physical distancing restrictions than other sectors where jobs can be performed remotely more easily. The results in Table 3 also suggest that the difference in the average number of weeks Black and White individuals remain unemployed decreased by 4 weeks, which is interesting provided that widening gap in the employment prospects of minorities and Whites. All forementioned effects are highly statistically significant. However, we do not observe a significant change in the difference between the hours worked between Black and White, and in the difference between the average length of unemployment

between White and Hispanic, after compared to before the pandemic. The results also do not provide evidence of a widening gap in the earnings of any racial and ethnic groups of workers. Therefore, although the Covid-19 crisis is responsible for a widening gap in the employment prospects of workers of different racial and ethnic groups, it does not deteriorate the gap in earnings if one existed prior to the pandemic.

Table 3. Effect of Covid-19 on labor market disparities between races/ethnicities

	OLS			Probit regressions	
	(1) Ln (Hours worked per week)	(2) Weeks unemployed	(3) Ln (Weekly earnings)	(4) Prob (Employed)	(5) Prob (Not at work last week although employed)
Post	-0.052***	-8.503**	0.068**	-0.195***	0.184***
	(0.001)	(0.989)	(0.009)	(0.003)	(0.014)
				[-0.054***]	[0.014***]
Black*Post	-0.001	-4.096**	0.009	-0.024***	0.132***
	(0.004)	(0.921)	(0.012)	(0.009)	(0.028)
				[-0.006***]	[0.009***]
Hispanic*Post	-0.009***	0.413	0.002	-0.090***	0.152***
	(0.001)	(0.808)	(0.008)	(0.005)	(0.010)
				[-0.024***]	[0.010***]
Other*Post	0.004	-4.572*	0.053*	-0.069***	0.167***
	(0.001)	(1.446)	(0.016)	(0.005)	(0.017)
				[-0.018***]	[0.011***]
Obs.	566,453	17,008	132,864	774,234	774,234

Note: The estimates in Columns (1) to (3) are from OLS regression models, while results from Probit models are provided in Columns (4) and (5). Standard errors are reported in parenthesis. Marginal effects after Probit models are reported in square brackets in the respective columns. The variable "Post" takes a value of 1 if the individual was interviewed after the outbreak of Covid-19 in March 2020, and zero if interviewed in the pre-pandemic time period. The following are the controls used in all regressions: Female, Age, Married, HhSize, NumChildrenInHhUnder21, InterAgeYoungestChUnder21Has, HSdiploma, BAdegree, HigherDegree, and SpouseEmployed. * p<0.10, ** p<0.05, *** p<0.01.

Table 4 confirms the previously stated effects of the pandemic on labor market outcomes, and reveals some gender differences. Although generally, women work fewer hours, earn less, are less likely to be employed and more likely to be out of work than men are, the pandemic has changed the gender gaps in the labor market only negligibly where the effect is statistically significant. Specifically, the effect of the interaction term of the female indicator with a post-pandemic dummy on labor market outcomes reveals no statistically significant change in the *difference* between genders of the weeks being unemployed and the likelihood of being out of work. This suggests that Covid-19 did not widen gender gaps in the labor market. Moreover, two

of the significant changes in the gap are in the advantage of the disadvantaged group. Precisely, the difference in the likelihood of being employed between men and women declined by 1.9% after relative to prior to the shock (that is, the coefficient on Female*Post is positive). In addition, although women earn less than men on average, the earnings gap between the two genders was slightly reduced after relative to before the shock (that is, the effect of Female*Post on the natural logarithm of weekly earnings is positive). The latter two findings might be due to differences in the industries attracting the two genders and the ability of working remotely in those industries.

Table 4. Effect of Covid-19 on labor market disparities between genders

	OLS			Probit regressions	
	(1) Ln (Hours worked per week)	(2) Weeks unemployed	(3) Ln (Weekly earnings)	(4) Prob (Employed)	(5) Prob (Not at work last week although employed)
Post	-0.053***	-9.590**	0.061**	-0.262***	0.233***
	(0.002)	(1.036)	(0.014)	(0.007)	(0.009)
				[-0.074***]	[0.018***]
Female	-0.214***	-0.938	-0.438***	-0.839***	0.112***
	(0.002)	(0.588)	(0.004)	(0.008)	(0.004)
				[-0.223***]	[0.007***]
Female*Post	0.001	0.531	0.028**	0.075***	-0.001
	(0.002)	(0.475)	(0.004)	(0.010)	(0.008)
				[0.019***]	[-0.0001]
Obs.	566,453	17,008	132,864	774,234	774,234

Note: The estimates in Columns (1) to (3) are from OSL regression models, while results from Probit models are provided in Columns (4) and (5). Standard errors clustered at year level are reported in parenthesis. Average marginal effects after Probit models are reported in square brackets in the respective columns. The variable "Post" takes a value of 1 if the individual was interviewed after the outbreak of Covid-19 in March 2020, and zero if interviewed in the pre-pandemic time period. The following are the controls used in all regressions: Black, Hispanic, Other, Age, Married, HhSize, NumChildrenInHhUnder21, InterAgeYoungestChUnder21Has, HSdiploma, BAdegree, HigherDegree, and SpouseEmployed. * p<0.10, ** p<0.05, *** p<0.01.

To further investigate the differential effect of the pandemic on labor market disparities of male and female individuals of distinct races and ethnicities, in addition to interactions of the post-outbreak indicator with race/ethnicity and female dummy variables, we add race/ethnicity – gender and race/ethnicity – gender – post-outbreak interactions to the major regressions. This intersectionality analysis is a natural extension of the analysis of race and ethnicity separately from gender. It is also a novelty in that it has not been done by previous authors in the context of Covid-19.

Table 5 provides the results. All previous findings are confirmed. Additionally, despite the highly statistically significant adverse effects of the pandemic on labor market outcomes for all demographic groups, the coefficients of the interaction terms of three indicators do not provide evidence of a large number of significant changes in race/ethnicity – gender gaps in the labor market, and wherever there is a statistically significant change, it is not necessarily in the disadvantage of the disadvantaged group. Specifically, Black women started working more hours a week than white men, after relative to before the outbreak. Although generally Hispanic women are less likely to be employed than white men, they became more likely to be employed relative to white men after relative to before the outbreak, that is the gap in the probability of employment narrowed between the two groups. The difference in the number of weeks of being unemployed between the same two groups narrowed as well. However, although these effects are statistically significant, their magnitudes are small and the other gaps in labor market outcomes did not change significantly.

In summary, although the results provide evidence of differences across racial and ethnic groups and genders and an adverse effect of the Covid-19 pandemic on labor market outcomes of all demographic groups, there is only small evidence of a widening gap in these experiences across groups as a result of the shock, more pronounced between ethnic and racial groups than between genders.

Table 5. Effect of Covid-19 on labor market disparities between races/ethnicities and genders

	OLS			Probit regressions	
	(1) Ln (Hours worked per week)	(2) Weeks unemployed	(3) Ln (Weekly earnings)	(4) Prob (Employed)	(5) Prob (Not at work last week although employed)
Post	-0.053***	-9.175***	0.053*	-0.204***	0.170***
	(0.002)	(0.868)	(0.013)	(0.006)	(0.011)
				[-0.054***]	[0.011***]
Black*Female*Post	0.017**	-1.803	-0.035*	0.058***	-0.013
	(0.003)	(1.680)	(0.009)	(0.007)	(0.028)
				[0.015***]	[-0.001]
Hispanic*Female*Post	0.001	-2.685**	0.005	0.196***	-0.029***
	(0.005)	(0.613)	(0.015)	(0.011)	(0.008)
				[0.052***]	[-0.002***]
Other*Female*Post	-0.018**	-0.860	-0.010	0.127***	-0.125***
	(0.003)	(5.142)	(0.014)	(0.008)	(0.004)
				[0.033***]	[-0.008***]
Black*Post	-0.009	-3.223	0.024*	-0.042***	0.139***
	(0.003)	(1.647)	(0.007)		(0.040)

				(0.007)	[0.009***]
				[-0.011***]	
Hispanic*Post	-0.008*	1.764	0.003	-0.224***	0.167***
	(0.002)	(1.029)	(0.003)	(0.008)	(0.012)
				[-0.059***]	[0.011***]
Other*Post	0.012***	-4.209	0.058**	-0.140***	0.232***
	(0.001)	(3.213)	(0.010)	(0.002)	(0.017)
				[-0.037***]	[0.015***]
Female*Post	0.003	1.356	0.032*	0.021*	0.025***
	(0.003)	(0.842)	(0.008)	(0.012)	(0.008)
				[0.005*]	[0.002***]
Black*Female	0.136***	1.054	0.265***	0.386***	-0.065**
	(0.002)	(1.452)	(0.008)	(0.006)	(0.030)
				[0.101***]	[-0.004**]
Hispanic*Female	0.065***	3.530**	0.079**	-0.442***	-0.184***
	(0.005)	(0.637)	(0.016)	(0.011)	(0.008)
				[-0.116***]	[-0.012***]
Other*Female	0.110***	1.592	0.167***	-0.036***	-0.112***
	(0.003)	(5.215)	(0.014)	(0.008)	(0.006)
				[-0.010***]	[-0.007***]
Black	-0.039***	4.871*	-0.264***	-0.282***	-0.011
	(0.003)	(1.580)	(0.008)	(0.007)	(0.043)
				[-0.080***]	[-0.001]
Hispanic	-0.031***	-1.415	-0.144***	0.224***	0.033***
	(0.001)	(1.112)	(0.002)	(0.006)	(0.006)
				[0.056***]	[0.002***]
Other	-0.058***	4.261	-0.116	-0.174***	0.009
	(0.001)	(3.323)	(0.009)	(0.002)	(0.022)
				[-0.048***]	[0.001]
Female	-0.242***	-1.947	-0.483***	-0.789***	0.152***
	(0.003)	(0.920)	(0.008)	(0.009)	(0.003)
				[-0.210***]	[0.010***]
Obs.	566,453	17,008	132,864	774,234	774,234

Note: The estimates in Columns (1) to (3) are from OLS regression models, while results from Probit models are provided in Columns (4) and (5). Standard errors clustered at year level are reported in parenthesis. Average marginal effects after Probit models are reported in square brackets in the respective columns. The variable "Post" takes a value of 1 if the individual was interviewed after the outbreak of Covid-19 in March 2020, and zero if interviewed in the pre-pandemic time period. The following are the controls used in all regressions: Age, Married, HhSize, NumChildrenInHhUnder21, InterAgeYoungestChUnder21Has, HSdiploma, BAdegree, HigherDegree, and SpouseEmployed. * p<0.10, ** p<0.05, *** p<0.01.

To further explore the groups of individuals which drive the previously discussed findings and the robustness of the results, we estimate all major regressions in subsamples determined by marital status and presence of children. The subsample analyses of changes in labor market disparities between racial and ethnic groups and genders are presented in Tables 6 and 7, respectively. They indicate that the strongest effects of the pandemic on racial and ethnic

differences in employment are elicited from the subsample of non-married individuals. The effect of the pandemic on racial and ethnic differences in the likelihood of being absent from work despite being employed is quite robust to the selection of a subsample based on marital status and presence or lack of children, that is the effects vary negligibly in the four subsamples considered in Table 6. Further, the change in the difference in the average length of time Blacks and Whites remain unemployed, after relative to before Covid-19, is primarily driven by married individuals and those with children. However, the stability of the earnings gap between races and ethnicities, that is the fact that it did not improve or deteriorate as a result of the pandemic, is confirmed in all four subsamples. Finally, the previously found overall reduction in the hours worked by Hispanics compared to Whites, after relative to prior to the pandemic, is driven by married workers with children. In the subsample of individuals who are not married, there is no statistically significant change in the difference in the hours worked of Hispanics and Whites, and in the subsample of childless workers, Hispanics started to work slightly more than Whites, after compared to before the pandemic.

Table 6. Subsample analysis of changes in labor market disparities between racial/ethnic groups

	OLS			Probit regressions	
	(1) Ln (Hours worked per week)	(2) Weeks unemployed	(3) Ln (Weekly earnings)	(4) Prob (Employed)	(5) Prob (Not at work last week although employed)
Panel A. Married					
Black*Post	-0.0002	-5.064**	0.003	-0.038***	0.147***
	(0.004)	(0.924)	(0.010)	(0.009)	(0.023)
				[-0.010***]	[0.010***]
Hispanic*Post	-0.008***	0.408	0.012	-0.084***	0.144***
	(0.001)	(1.062)	(0.006)	(0.004)	(0.014)
				[-0.022***]	[0.010***]
Other*Post	0.006**	-4.770	0.053*	-0.062***	0.173***
	(0.001)	(1.813)	(0.016)	(0.005)	(0.020)
				[-0.016***]	[0.011***]
Obs.	519,285	14,219	121,624	709,621	709,621
Panel B. Not married					
Black*Post	-0.016	-2.036	0.026	0.077***	-0.048
	(0.006)	(2.049)	(0.031)	(0.030)	(0.081)
				[0.022***]	[-0.003]
Hispanic*Post	-0.023	0.099	-0.071	-0.112***	0.200***
	(0.008)	(0.902)	(0.026)	(0.018)	(0.072)
				[-0.032***]	[0.012***]
Other*Post	-0.056**	-0.660	0.085	-0.224***	0.111***
	(0.011)	(2.731)	(0.029)	(0.015)	(0.040)
				[-0.064***]	[0.007***]

Obs.	47,168	2,789	11,240	64,613	64,613
Panel C. With child(ren)					
Black*Post	-0.005	-3.754**	0.007	-0.039***	0.107***
	(0.004)	(0.789)	(0.012)	(0.012)	(0.034)
				[-0.010***]	[0.007***]
Hispanic*Post	-0.018***	-0.405	0.001	-0.106***	0.140***
	(0.001)	(0.675)	(0.009)	(0.009)	(0.013)
				[-0.026***]	[0.010***]
Other*Post	0.005*	-4.958*	0.060	-0.074***	0.143***
	(0.001)	(1.325)	(0.017)	(0.008)	(0.014)
				[-0.018***]	[0.010***]
Obs.	487,588	14,616	114,836	631,810	631,810
Panel D. Without children					
Black*Post	0.007	-6.055	-0.004	-0.032***	0.209***
	(0.007)	(3.303)	(0.006)	(0.003)	(0.013)
				[-0.010***]	[0.011***]
Hispanic*Post	0.026**	4.117	0.001	-0.092***	0.208***
	(0.006)	(2.159)	(0.004)	(0.006)	(0.016)
				[-0.028***]	[0.011***]
Other*Post	-0.014	-1.285	0.018	-0.112***	0.255***
	(0.003)	(2.061)	(0.014)	(0.003)	(0.027)
				[-0.034***]	[0.014***]
Obs.	78,865	2,392	18,028	142,424	142,424

Note: The estimates in Columns (1) to (3) are from OLS regression models, while results from Probit models are provided in Columns (4) and (5). Standard errors clustered at year level are reported in parenthesis. The variable "Post" takes a value of 1 if the individual was interviewed after the outbreak of Covid-19 in March 2020, and zero if interviewed in the pre-pandemic time period. The following are the controls used in all regressions: Female, Age, Married, HhSize, NumChildrenInHhUnder21, InterAgeYoungestChUnder21Has, HSdiploma, BAdegree, HigherDegree, and SpouseEmployed. * p<0.10, ** p<0.05, *** p<0.01.

Our results also indicate that the previous finding that the change in the gap in the employment prospects between men and women declined after March 2020 was driven by people with rather than without children. The reduction in the earnings gap between genders is mainly driven by single individuals without children. However, although the results in the whole sample showed no changes in the gender gaps in the hours worked, the subsample analyses show that the gender gap in the hours worked declined (positive coefficient of Female*Post) for workers with children and increased (negative coefficient of Female*Post) for those without children.

Table 7. Subsample analysis of changes in labor market disparities between genders

	OLS			Probit regressions	
	(1)	(2)	(3)	(4)	(5)
	Ln (Hours worked per week)	Weeks unemployed	Ln (Weekly earnings)	Prob (Employed)	Prob (Not at work last week although employed)

Panel A. Married					
Female*Post	0.003	0.360**	0.030**	0.076***	-0.002
	(0.002)	(0.202)	(0.004)	(0.010)	(0.007)
				[0.019***]	[-0.0001]
Obs.	519,285	14,219	121,624	709,621	709,621
Panel B. Not married					
Female*Post	-0.010	1.923	0.055**	0.097***	0.005
	(0.003)	(1.806)	(0.006)	(0.019)	(0.019)
				[0.027***]	[0.0003]
Obs.	47,168	2,789	11,240	64,613	64,613
Panel C. With child(ren)					
Female*Post	0.008**	1.344	0.027**	0.124***	0.009
	(0.002)	(0.439)	(0.012)	(0.010)	(0.009)
				[0.029***]	[0.001]
Obs.	487,588	14,616	114,836	631,810	631,810
Panel D. Without children					
Female*Post	-0.039***	-4.241*	0.036***	-0.038***	-0.028***
	(0.003)	(1.081)	(0.003)	(0.008)	(0.003)
				[-0.012***]	[-0.001***]
Obs.	78,865	2,392	18,028	142,424	142,424

Note: The estimates in Columns (1) to (3) are from OLS regression models, while results from Probit models are provided in Columns (4) and (5). Standard errors clustered at year level are reported in parenthesis. The variable "Post" takes a value of 1 if the individual was interviewed after the outbreak of Covid-19 in March 2020, and zero if interviewed in the pre-pandemic time period. The following are the controls used in all regressions: Black, Hispanic, Other, Age, Married, HhSize, NumChildrenInHhUnder21, InterAgeYoungestChUnder21Has, HSdiploma, BAdegree, HigherDegree, and SpouseEmployed. * p<0.10, ** p<0.05, *** p<0.01.

Finally, because the entire sample creates a disbalance between the pre-pandemic and the post-pandemic time periods, we finally compare the labor market outcomes "right before" with those "right after" the cutoff date, that is March 2020. The results confirm that for all individuals, the likelihood of employment and the hours worked declined, while the likelihood of not working despite being employed increased after the outbreak. The previous result that the gap between employment prospects for Hispanics compared to Whites increased after relative to before March 2020 is confirmed. Again, we do not observe racial and ethnic changes in the earnings gap after relative to prior to the pandemic. The results also suggest that women work and earn less and are less likely to be employed in general. A finding that changes when we restrict the studied time period is related to the difference in the likelihood of employment between genders. Specifically, while we previously found that the gap in the likelihood of employment between genders was narrower after March 2020 relative to before, in Table 8, we show that there is no significant change is this gap. This implies that the gap in the employment

prospects between genders narrowed before January 2020, but did not change significantly between the first and the second quarters of 2020.

Table 8. Effect of Covid-19 on labor market disparities between races/ethnicities and gender, using a balanced pre- and post-pandemic time frame

	OLS			Probit regressions	
	(1) Ln (Hours worked per week)	(2) Weeks unemployed	(3) Ln (Weekly earnings)	(4) Prob (Employed)	(5) Prob (Not at work last week although employed)
Panel A. Disparities based on race/ethnicity					
Post	-0.043***	-7.379***	0.377***	-0.191***	0.278***
	(0.004)	(0.583)	(0.009)	(0.010)	(0.016)
				[-0.054***]	[0.021***]
Black*Post	0.007	0.795	-0.017	0.014	0.074
	(0.013)	(1.440)	(0.031)	(0.031)	(0.053)
				[0.004]	[0.005]
Hispanic*Post	-0.006	1.754*	-0.001	-0.064***	0.088**
	(0.009)	(1.030)	(0.022)	(0.026)	(0.037)
				[-0.018***]	[0.006**]
Other*Post	0.002	3.216**	0.011	-0.046*	0.051
	(0.011)	(1.461)	(0.028)	(0.026)	(0.044)
				[-0.013***]	[0.004]
Obs.	96,552	5,989	23,609	138,181	138,181
Panel B. Disparities based on gender					
Post	-0.043***	-7.809***	0.022**	-0.216***	0.279***
	(0.004)	(0.0581)	(0.011)	(0.012)	(0.020)
				[-0.061***]	[0.021***]
Female*Post	-0.001	2.828***	0.034**	0.017	0.043
	(0.006)	(0.857)	(0.016)	(0.016)	(0.027)
				[0.005]	[0.003]
Female	-0.21***	-3.382***	-0.444***	-0.788***	0.081***
	(0.004)	(0.745)	(0.011)	(0.011)	(0.020)
				[-0.222***]	[0.006***]
Obs.	99,552	5,989	23,609	138,181	138,181

Note: The estimates in Columns (1) to (3) are from OLS regression models, while results from Probit models are provided in Columns (4) and (5). Standard errors are reported in parenthesis. Marginal effects after Probit models are reported in square brackets in the respective columns. Results are based only on data from the three months before and the three months after the outbreak of Covid-19. The variable "Post" takes a value of 1 if the individual was interviewed after the outbreak of Covid-19 in March 2020 (i.e., in April, May or June 2020), and zero if interviewed in the pre-pandemic time period (here, January, February or March 2020). The following are the controls used in all regressions: Female, Age, Married, HhSize, NumChildrenInHhUnder21, InterAgeYoungestChUnder21Has, HSdiploma, BAdegree, HigherDegree, and SpouseEmployed. * p<0.10, ** p<0.05, *** p<0.01.

6. Discussion of the policy implications

This study finds that Covid-19 has had an overall adverse effect on the labor market and has contributed to an increase in the gap between the employment prospects of individuals of different races and ethnicities. However, our findings do not indicate a widening gap in the differences in the earnings and the employment prospects between men and women. These results have at least the following implications for policy decision-making.

First, actions to encourage job openings are necessary to reverse the negative impact of the Covid-19 pandemic on workers of all demographic groups and to return the employment rate to its pre-pandemic level. Experiences from previous recessions show that the economy does eventually recover but the speed of recovery might vary depending on the sector and government responses. In the instance of Covid-19, it is likely to depend on the effectiveness of the intervention to sustainably contain the spread of the disease, stimulating businesses, and understanding the trend of who the most vulnerable groups of workers were prior to the contraction because they tend to face the hardest recovery.

Second, the pre-pandemic obstacles related to the disparities in the labor market across some demographic groups have worsened after March 2020, and therefore, deserve attention. However, we find that the pandemic affected the labor market experiences gap between races and ethnicities more severely than that between men and women. This implies that if any policies to alleviate inequality between demographic groups are implemented, racial and ethnic rather than gender disparities should be prioritized. We further find that Hispanics were more adversely affected compared to other workers. This suggests that they are most likely to benefit from assistance in finding jobs.

Additionally, the evidence of an expanding gap in the employment prospects of workers of distinct races and ethnicities and individuals' awareness of this disparity might discourage minorities from looking for jobs because of the lower likelihood of finding one. Programs to train these workers to gain valuable skills which can increase their competitiveness in the labor market, as well as motivational programs to encourage them to search for jobs, are some potential and necessary steps towards the transition to a post-pandemic recovery.

7. Conclusion

In this paper, we examine the effect of health and economic shocks on labor market inequalities between racial and ethnic groups and genders. We found empirical support of the hypothesis that the Covid-19 pandemic widened the gap in the employment prospects of minorities and whites, with Hispanics being the most adversely affected. The latter group started working fewer hours compared to White workers, after relative to before the pandemic. The latter effect is mainly driven by married individuals and workers who have children. However, the *difference* between the earnings of employed workers of distinct races and ethnicities did not change significantly. The shock also did not worsen gender inequality in the labor market, meaning that the gap remained in pre-pandemic levels. These results emphasize the importance of taking action to recover the economy, and specifically, the labor market from the Covid-19 crisis. They also have policy implications related to the expanding challenges to alleviate the gap in labor market experienced between racial and ethnic groups.

Although this is the first paper which explores the changes in the differences in labor market experiences between demographic groups in the context of Covid-19, our research has limitations. First, we do not account for years of work experience because our data are limited and because including experience as a conditioning factor might cause simultaneity issues because discriminatory behavior is likely to affect workers' experience. For instance, Gronau (1988) shows that discrimination might affect the years of experience of women. Second, we do not have data which we can use as a proxy for productivity. Therefore, some of the differences in labor market disparities across genders or races and ethnicities might be contributed to different productivity levels. However, the fact that we compare the gaps before and after the Covid-19 outbreak is likely to alleviate this issue because differences would eliminate time-invariant characteristics of distinct demographic groups. Specifically, we are interested in the difference in the gap after as compared to before the exogenous shock.

More research is necessary to address the abovementioned limitations. Future research can also extend our analysis to other countries, and distinguish between the labor market disparities in geographic locations with different numbers of confirmed Covid-19 cases to examine the effect of the severity of the disease on inequality.

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Appendix A1

A complete set of the variables used in the empirical analysis and their descriptions

Explanatory variables and controls:

- Female: a dichotomous variable which equals 1 if the respondent is female, and zero if the respondent is a male.
- Black: a dichotomous variable which equals 1 if an individual is black, including black/negro, Black-American Indian, Black-Asian, Black-Hawaiian/Pacific Islander, or Black-American Indian-Asian, and zero, otherwise.
- Hispanic: a dichotomous variable which equals 1 if an individual is Hispanic, including Mexican, Mexican American, Mexicano/Mexicana, Chicano/Chicana, Mexican (Mexicano), Mexicano/Chicano, Puerto Rican, Cuban, Dominican, Salvadoran, other Hispanic, Central/South American, Central American, or South American, and zero, otherwise. The variables Black, White and Other race or ethnicity individuals exclude Hispanic.
- White: a dichotomous variable which equals 1 if an individual is white, White-American Indian, White-Hawaiian/Pacific Islander, White-Hawaiian/Pacific Islander, or White-American Indian-Hawaiian/Pacific Islander, and zero, otherwise.
- Other (race/ethnicity): a dichotomous variable which equals 1 if an individual has classified himself/ herself as a representative of one of the following racial and ethnic groups: White-Black, White-Black-American Indian, White-Black-Asian, White-Black-American Indian-Asian, White-Black--Hawaiian/Pacific Islander, Asian or Pacific Islander, Asian only, White-American Indian-Asian, White-Asian-

Hawaiian/Pacific Islander, American Indian-Asian, Asian-Hawaiian/Pacific Islander, White-American Indian-Asian-Hawaiian/Pacific Islander, American Indian/Aleut/Eskimo, Hawaiian/Pacific Islander only, American Indian-Hawaiian/Pacific Islander, or two or more races/ethnicities. The variable takes a value of zero, otherwise.

- Post: a dummy variable equal to 1 if the respondent was interviewed strictly after March 2020, and zero if the respondent was interviewed prior to the Covid-19 outbreak.
- Married: an indicator which equals 1 if the respondent is married, and zero if (s)he is separated, divorced, widowed, or never married/single (6).
- HSdiploma: a binary variable which takes the value of 1 if the highest educational attainment of a respondent is a high school diploma and/or some college (without a formal degree), and zero, otherwise.
- BAdegree: a binary variable which takes the value of 1 if the highest educational attainment of a respondent is a Bachelor's degree, and zero, otherwise.
- HigherDegree: a binary variable which takes the value of 1 if the highest educational attainment of a respondent is higher than a Bachelor's degree (e.g., MA or PhD), and zero, otherwise.
- Age: age of the respondent.
- HhSize: number of individuals in the household.
- NumChildrenInHhUnder21: number of children under 21 present in the household.
- InterAgeYoungestChUnder21Has: age of the youngest child under 21 in the household if one or more children under 21 are present.
- Retired: an indicator equal to 1 if a respondent has retired, and zero, otherwise.
- SpouseEmployed: an indicator equal to 1 if the spouse (if present) is employed, and zero, otherwise.

Dependent variables:

- Ln(HoursWorkWk): natural logarithm of the hours worked per week.
- Employed: an indicator equal to 1 if the respondent is employed, and zero, otherwise.

- EmployedNotAtWorkLastWeek: an indicator equal to 1 if the respondent is employed but has not been at work the week prior to the interview, and zero, otherwise.
- WeeksUnemployed: number of consecutive weeks the respondent has been unemployed (if unemployed at the time of the interview).
- Ln(WeeklyEarnings): natural logarithm of the respondent's earnings per week.

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The author declares that this article does not contain any studies with human participants or animals performed by any of the authors.

Author's Contributions

The author declares that she performed the analysis and prepared this manuscript. She approves the current version of the article, and is responsible for all aspects of this research.