Women's Labor Supply Adjustment to the COVID-19 Shock: An Intersectional Analysis

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In this paper, we use monthly Current Population Survey data from January 2018 through November 2022 to study the labor supply adjustment of White, Hispanic, and Black women to the COVID-19 shock in comparison to their co-ethnic men by focusing on exits from the labor force and reduction in work hours. We first explore whether there is a difference in the likelihood of being not in labor force for White, Hispanic, and Black people and their gender breakdown compared with the pre-Pandemic period. Second, we find out the reduction in work hours by these groups compared to the pre-Pandemic levels. We also consider whether the existence of children makes a difference in these adjustments.

I. Intro

Race and gender disparities in labor market outcomes have been a persistent feature of the U.S. labor markets. The employment losses due to the COVID-19 pandemic have been no exception. Recent studies have shown that, during the early stages of the pandemic, Latinas and Black women suffered larger employment losses than any other group, controlling for labor force characteristics as well as labor market position of individuals such as industry, occupation, and region (Gezici and Ozay 2020). As the pandemic-related hike in the unemployment rate is reversed by 2022, a persistent decline in labor force participation has raised doubts about the success of the so-called recovery. Researchers at the Federal Reserve (Gregory and Steinbeck 2022) find that shifts in retirement and the number of people taking care of family, or the home appear to be behind the drop in labor force participation. Over the period of December 2019-2021, when the labor force participation rate dropped from 63.3 percent to 62 percent, the effect was most prominent for the groups of Black men and women (Bureau of Labor Statistics)[1].

In this study, we examine the differences in labor force participation by focusing on the intersection of race and gender with the expectation that race and gender fuse to create unique experiences for each group of gender and race/ethnicity combinations. We use monthly Current Population Survey (hereafter CPS) data from January 2018 through November 2022 allowing comparisons of the changes in these groups' labor force participation over time. Using microdata makes it possible for us to control for individual characteristics such as educational attainment, marital status, location, and age that might play a role in individual labor supply decisions.

In our analysis, we first examine whether the likelihood of being out of the labor force has changed for Black, Hispanic, and White women, and men from January 2018 to November 2022. The results show that, during the pandemic, this likelihood was significantly higher for Hispanic women, Black men, and Black women compared to others. We then narrow our analysis of nonparticipation to reasons other than retirement and disability to be able to examine the impact of additional childcare responsibilities during the pandemic for various groups. With this narrower focus, we find that Hispanic women and Black women both experienced more than a 3 percent higher likelihood of being out of the labor force for "other" reasons, compared to a 1.5 and 1.3 percent higher likelihood of White men and women, respectively. Building on this finding, we control for parental status to see whether having a dependent child makes a difference in determining this increased probability of nonparticipation. We find that Hispanic and Black mothers have experienced the largest increase in the probability of being out of labor force for "other" reasons compared to pre Covid 19 period (with 4.3 and 3.5 percentage points), while parents in other groups suffered a penalty of parenthood ranging from 1.4 to 2.7 percentage points. Finally, we examine these differences by using weekly working hours based on the suggestion that reducing work hours instead of not working at all could be an alternative labor

[1] U.S. Bureau of Labor Statistics. Labor Force Statistics from the Current Population Survey. Seasonally adjusted labor force participation rate for civilian noninstitutional population, 16 years and older. (Series CIVPART).

supply strategy in response to pandemic conditions. The results confirm our analysis in that Black and Hispanic mothers have experienced the largest reductions in their working hours during the pandemic.

In the second section of this chapter, we examine the long-term trends and variations in labor force participation among various ethnic and racial groups of men and women in the US. Here, we provide an overview of the existing literature that delves into the reasons behind these changes over time and the disparities observed across different demographic groups. The findings of the recent literature concerning the impact of the pandemic on women's labor force participation are also presented in this section. Building upon the insights from this literature, the third section of the chapter introduces our empirical approach to examine the impact of the pandemic across intersectional groups. Here, we define the determinants of non-participation in the labor force within a regression framework and share our empirical findings. In the final section of the chapter, we further explore the implications of our findings.

II. Inter-group Differences in Labor Force Participation in the US: An Overview

The labor force in the US includes all people aged 16 and older who are either employed or actively seeking employment through job search and available for work. [2] Those who are not in the labor force (NLF) are individuals who are 16 and older but are neither employed nor actively seeking employment. This category includes students, retirees, homemakers, disabled individuals, discouraged workers who have given up on finding a job, and others who are not currently engaged in paid work or job-seeking activities. The labor force participation rate (LFPR) then represents the number of people in the labor force as a percentage of the civilian noninstitutional population.

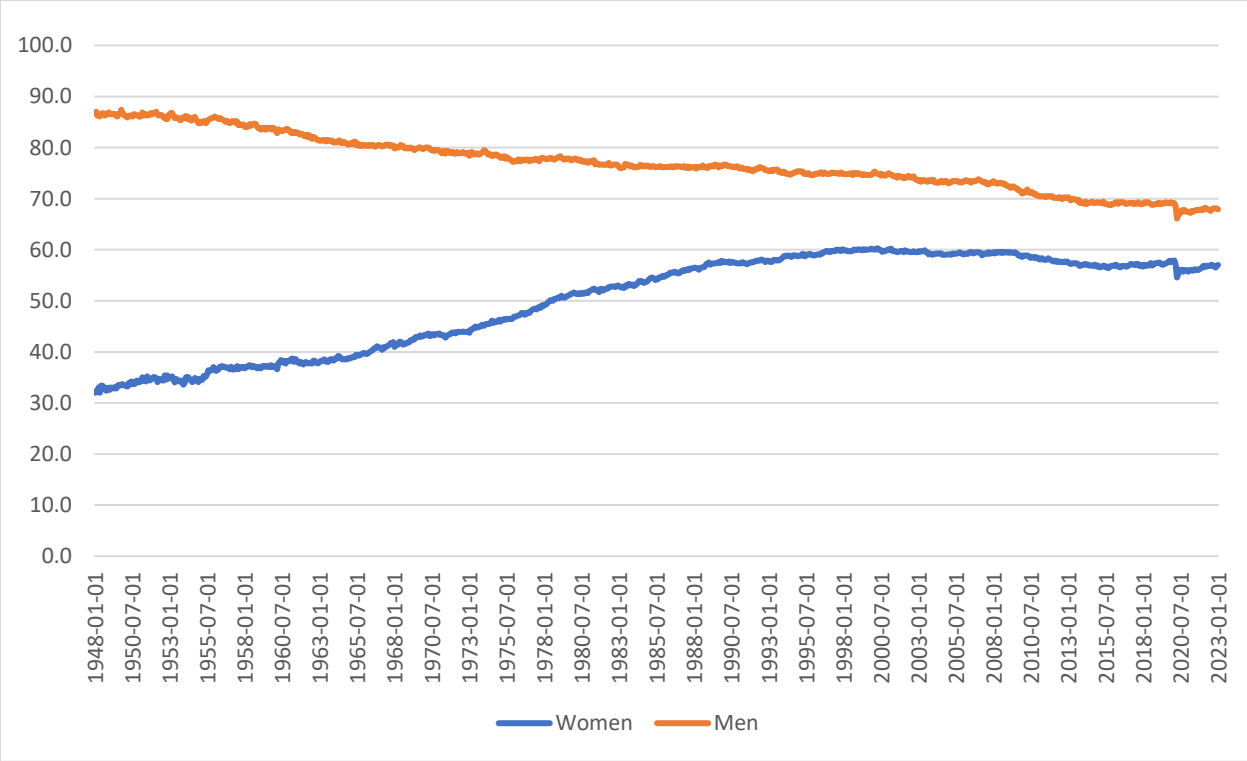
The labor market participation decision of women is typically examined within a labor supply model framework in which women face the decision to work in the market or perform unpaid domestic activities at home. In this framework, the decision to participate in the labor market will be impacted by the existence of children, level of education, women's commanding market wage, job opportunities for women, non-labor income (for example, spouse's wage for married women) as well as access to childcare provisions. Among these factors, the presence of preschool-aged children has historically been recognized as a significant barrier to women's entry into the labor market. However, it's worth noting that the impact of this factor has been on the decline since the 1960s. (Blau and Winkler 2017).

The rise in women's LFPR during the post-World War II period, as depicted in Figure 1, is accompanied by significant shifts in the patterns of women's employment throughout their lives. In contrast to the traditional pattern observed in the pre-1940 period, where young and single

[2] The group of all people aged 16 and older is also referred as civilian noninstitutional population in the US. The civilian noninstitutional population excludes active duty members of the US Armed Forces as well individuals who are living in institutions such as correctional facilities, detention centers, nursing homes, and mental health institutions. For more on concepts and definitions in the Current Population Survey, see https://www.bls.gov/cps/definitions.htm.

women workers would often exit the labor force permanently after getting married and having children, the 1960s saw a notable shift. During this era, women with school-aged and grown children began to enter or re-enter the labor force in growing numbers. (Blau and Winkler 2017). With increases in divorce rates and declines in birth rates, between 1960 and 1980, LFPRs had increased for all age groups of women. Since 2000, when most age groups achieved their maximum rates, the LFPR of women started to decline. The stagnation that started in the mid-1990s is partly attributed to work-family issues and a lack of parental leave programs (Blau and Winkler 2017). Nevertheless, women's LFPRs over their life cycles have started to resemble those of men, peaking during the prime ages of 25 to 54 (Blau and Winkler 2017). Since 1948, the LFPR of men has been on a downward trajectory due to prolonged periods of schooling and earlier retirement. Moreover, the LFPR of prime-age men has faced a decline owing to a decreased demand for less skilled workers and the expansion of government programs that provide disability income to men below the conventional retirement age (Blau and Winkler 2017). Additionally, Krueger (2017) has identified long-term demographic changes, such as Baby Boomers nearing retirement, as a significant factor contributing to the decline in overall LFPR since the 2000s.

Figure I. LFPR of Women and Men (16 years and older)



Source: U.S. Bureau of Labor Statistics. Labor Force Statistics from the Current Population Survey. Seasonally adjusted labor force participation rate for civilian noninstitutional population, 16 years and older. (Series LNS11300002, LNS11300001).

Apart from these long-term trends, labor force participation also changes throughout business cycles. For downturns, the literature discusses the added worker and discouraged worker effects, each of which pulls the workers' decisions to work in opposite directions. Specifically, added worker effect predicts that during downturns, if the primary earner becomes unemployed, other members may enter the labor force to maintain household income. The discouraged worker effect, in turn, presumes that during periods of high unemployment, individuals who lose their jobs become discouraged workers and drop out of the labor force. Research suggests that historically, the discouraged worker effect was dominant in the sense that labor force participation rates have declined during recessions (Blau and Winkler 2017). For married women, research finds mixed results, whereby some studies find evidence of added worker effect (Lundberg 1985, Tano 1993, Starr 2014) while others find no evidence (Maloney 1991, Juhn and Murphy 1996).

Table I presents LFPRs for intersectional groups aged 20 years and older across selected years and averages during recessions. Starting from 1977, Latino men consistently exhibit the highest LFPR, followed by White men and then Black men. While the lower LFPR of Black men has often been linked to their comparatively lower educational attainment, it is noteworthy that the adverse impact of limited educational attainment on labor force participation is more pronounced for Black men when compared to White men (Blau and Winkler 2017). Additionally, the expansion of government disability programs has been identified as a contributing factor to the lower LFPR among Black men. Moreover, the discouragement effect tends to be more significant for Black men, given that Black unemployment rates are typically twice as high as those for White individuals. Furthermore, the substantial increase in incarceration rates among Black men is likely to have a notable impact on their LFPR, as individuals with criminal records often face reduced employment opportunities.

Table I. Intersectional Groups' LFPRs in Selected Years

Labor Force Participation Rate (percent), 20 years & older						
	White Men	**White Women**	**Black Men**	**Black Women**	**Hispanic Men**	**Hispanic Women**
1977	80.16	47.33	75.63	53.55	84.58	45.07
1980 Recession	80.05	50.62	75.17	55.47	85.1	48.45
1981 Recession	79.24	51.97	74.64	56.16	84.21	49.43
1990-1 Recession	78.30	57.60	75.17	59.88	84.25	53.81
1997	77.45	59.93	72.16	63.96	84.09	57.04
2001 Recession	76.80	59.78	71.83	65.20	84.11	58.95
Great Recession	75.97	60.38	70.83	64.12	83.90	58.80
2012	73.51	58.73	67.74	62.54	80.98	59.55

2017	71.81	57.59	68.05	62.50	80.45	58.88
COVID-19 Recession	70.00	56.55	65.35	60.45	78.55	58.60
2022	70.10	57.09	67.99	62.00	79.47	59.86

Source: Authors' calculations based on the U.S. Bureau of Labor Statistics, Labor Force Statistics from the Current Population Survey. Seasonally adjusted labor force participation rate for 20 years and older. (Series LNS11300032, LNS11300029, LNS11300028, LNU01300035, LNS11300031, LNU01300034)
Note: Recession dates are taken from NBER. https://www.nber.org/research/data/us-business-cycle-expansions-and-contractions

Traditionally Black women have the highest LFPR among women aged 20 years and older, followed by that of White women, until 2012. From then on, Latinas' LFPR surpassed that of White women. Recessions since 1980, apart from the COVID-19 recession, did not seem to change the long-term pattern of LFPR of intersectional groups. For instance, during the 1980, 1981, 1990, and 2001 recessions, the upward trend in LFPR among women of all races continued, with the exception of a small decline observed among White women during the 2001 recession. During the Great Recession, only White women experienced a slight increase in LFPR among women. The COVID-19 recession, on the other hand, appeared to lead to decreased LFPRs across all groups, with the decrease being more pronounced among Black men.

The labor supply model for women's participation decisions offers a framework for understanding racial disparities in women's decisions to join the labor force. These disparities can be attributed to differences in educational attainment, family composition, household economic characteristics, and cultural gender norms, all of which can be influenced by race. For instance, research by Cajner et al. (2017) reveals that variations in educational attainment, age distribution, and marital status (including lower marriage rates among Black women) largely account for the racial participation gap between White and Black women. In addition to these observable factors, the higher participation rate among Black women has been linked to racial differences in the stigma associated with women's work and cultural norms rooted in the legacy of slavery (Boustan and Collin 2013). Based on CPS data, Cajner et al. (2017) report that while Latinas are nearly twice as likely as White women to take care of household and family responsibilities, Black women exhibit a lower tendency to be out of the labor force due to family or household obligations. Hernandez et al. (2021) note that even before the pandemic, Latinas dedicated over twice as much time as Latinos to household activities and nearly three times as much time to caring for household members. Consequently, there is considerable variation in the amount of unpaid time spent at home among women of different racial and ethnic backgrounds.

In summary, both observable (such as educational attainment, marital status, the presence of children, geographic location) and unobservable (cultural influences and discrimination) factors collectively play a role in determining the level and fluctuations in unemployment and LFPR throughout a business cycle. Importantly, all these factors are contingent on the intersections of race and gender. Therefore, we expect a differential impact of the COVID-19 recession on employment, unemployment, and the labor force participation of White, Black, and Hispanic

individuals with a further breakdown by gender.[3] That said, there are a couple of unique characteristics of the COVID-19 recession compared to previous downturns that have disproportionately burdened women and more likely impacted their labor market outcomes.

The lockdowns and stay-at-home orders implemented during the COVID-19 pandemic have underscored the significance of women's unpaid domestic labor within households—an issue that feminist economists have scrutinized for decades (Kabeer et al, 2021). The closure of schools, disruptions in long-term care facilities, and the substantial number of individuals contracting the virus and requiring home care have all contributed to a surge in caregiving responsibilities which burden women disproportionately globally (Bahn et al 2020) while the gaps between men and women in undertaking unpaid work varied in different contexts. For example, drawing on a national survey conducted in Australia in May 2020, Craig and Churchill (2021) report that during the lockdown unpaid work increased overall, and women shouldered most of it, but gender gaps in caring for children narrowed as men took on a higher share of the childcare tasks. In the case of the United States, the situation presents a nuanced picture. The evidence provided by Collins et al. (2020) for the early months of the pandemic showed that work hours declined more for women than men, particularly for those with young children. While custodial fathers also experienced a notable increase in childcare hours early in the pandemic, the burden on working women became particularly heavy (Goldin, 2022). For college educated women for example, Goldin (2022) calculates the change in childcare time from 8.7 hours per week in the pre-Pandemic period to 17.3 hours per week early in the pandemic and then to around 22.4 hours by Fall 2020. The intensified caregiving burden has predominantly fallen on women; however, the question of whether mothers left the labor force due to childcare responsibilities has not been conclusively answered in the context of the U.S. labor market. Analyzing the immediate effects of the pandemic, Heggeness (2020) shows mothers of school age children in early closure states were much more likely to take leave from work than women in general. Lim and Zabek (2021) finds that differences in household structure and having children could explain one-quarter of the excess labor force exits among women of color during Covid 19 period. Interestingly Heggeness (202) also finds that mothers with school age children who continued working during the pandemic increased their work hours relative to comparable fathers. Similarly, Barkowski et al (2021) find that working mothers of young children worked more hours per week than those without young children during the pandemic. Couch et al (2021), on the other hand, show that mothers with children aged 6-17 reduced their working hours during the COVID-19 period.

In addition to the increasing childcare burden, the COVID-19 recession was unique in terms of the sectors that had been hit hardest by the recession such as leisure and hospitality. Furthermore, with widespread closures, remote working opportunities became a determinant of who gets to keep their jobs. Combined with gendered and racial occupational segregation,

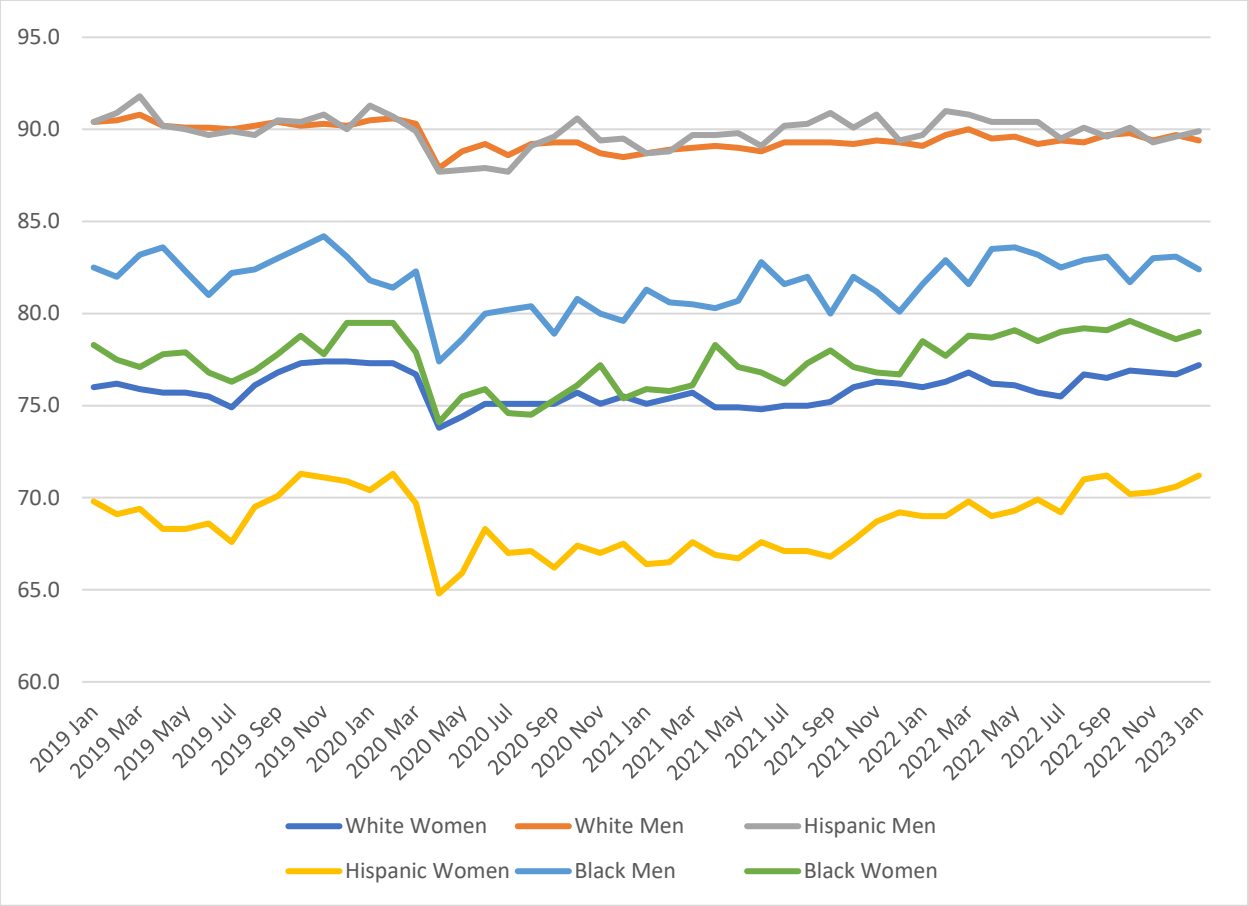
[3] While employment and unemployment are not the main focus of our chapter, it is important to remember that transition among different labor force statuses (employed, unemployed, out of labor force) will impact the labor force participation rate. Research already shows that controlling for individual characteristics and labor market positions Black and Hispanic women's unemployment probability has increased at the onset of the pandemic (Gezici and Ozay 2020), to the extent that these workers become discouraged and leave the labor force, unemployment probability will impact the participation rates.

this has also implications for non-White women. For example, Black and Hispanic mothers are more likely to be employed in industries most negatively impacted by the pandemic, and for which telecommuting is less likely than White mothers (Montes et al 2021). Holder et al (2021) report that some of the biggest job losses for Black women in the US came from low-wage occupations such as cashiers and childcare workers.

A closer look into the prime-aged LFPRs in the period preceding the COVID-19 pandemic through January 2023 is available in Figure II. We can see that as opposed to the BLS 20 years and above LFPR series, prime-aged Latina LFPR lies below that of White and Black women LFPR in the period leading up to the COVID-19 pandemic. Furthermore, we also see that the largest decline in the LFPRs between March and April of 2020, is for Hispanic women with a 4.9 percentage point drop, then for Black men with a 4.89 percentage decline, and then for Black women with a 3.8 percentage point decline.

Building upon the insights derived from the literature reviewed above, our model incorporates controls for factors such as educational attainment, marital status, location, and age. These controls allow us to assess the impact of COVID-19, particularly on prime-aged women from diverse racial backgrounds, with a particular focus on their probability of not being in the labor force (NLF). Our interest in studying prime-aged women stems from the fact that most women in the workforce are prime-aged and half of these women have children younger than 18 years old (Goldin 2022), so these women are more likely to alter their labor supply to juggle the additional childcare burden with COVID-19 school closures and unreliable childcare. Another response by women, and especially mothers, to the COVID-19 recession was changing their work hours. Therefore, we investigate, for White, Hispanic, and Black women who stayed in the labor force, whether and how much they altered working hours during the COVID-19 period and, whether these probabilities are impacted by having a child. It is important to note that one of the limitations of our study is our inability to control for the impact of industry and occupational distributions due to the unavailability of this data for most individuals who are not in the labor force.

Figure II. LFPRs of Intersectional Groups During COVID-19 (Aged 25-54 years old)



Source: U.S. Bureau of Labor Statistics. Labor Force Statistics from the Current Population Survey. Seasonally unadjusted labor force participation rate for primage aged workers, 25-54 years old. (Series: LNU01300064, LNU01300065, LNU01300070, LNU01300071, LNU01300067, LNU01300068).

III. Data, Methodology, and Results

We use the monthly CPS data sets from January 2018 to November 2022, available from Economic Policy Institute (2022).[4] We classify the period in the following way:

- Pre-COVID-19 Period: January 2018 through February 2020
- COVID-19 Period: March 2020 through December 2021
- Post-COVID period: January 2022 through November 2022.

To investigate the impact of the COVID-19 recession, we narrow our sample to individuals within the prime working-age range, specifically those who are employed and those who are not in the labor force, aged between 25 and 54.

[4] The Economic Policy Institute CPS Basic monthly extracts are restricted to those ages 16 and above with non-missing data. As a result, the sample of individuals in the EPI extracts is sometimes smaller than what is in the raw, underlying CPS data, which can include nonresponding households and individuals below the age of 16.

Our analysis has two parts: First, we estimate a difference-in-difference model to assess how NLF probability evolved for Black, Hispanic and White women and men from January 2018 to November 2022. Our aim is to see how much the NLF probability has increased especially for women of color, during COVID compared with the pre-COVID period. Here, we include labor supply characteristics such as age and educational attainment as control variables that might affect an individual's probability of being NLF. Second, we turn our attention to whether these groups have altered their working hours during the COVID-19 period.

First set of regressions are based on the following regression equation:

Model I:

$$Prob(NLF_i) = \Phi\big(\pi + \sum_{i=2}^{6} \beta_i\, RG_i + \sum_{q=2}^{3} \alpha_q\, COVID_q + \sum_{i=2}^{6}\sum_{q=2}^{3} \delta_{i,q}\, (RG_i * COVID_q\,) + \sum_{m=Feb}^{Dec} \rho_m\, \theta_m + \mu' X + u_i\big)\,,$$

where Φ is the standard normal cumulative distribution, $NLF_i = 1$ if individual is NLF, and 0 otherwise. RG_i is a vector of 5 dummy variables that differentiate the sample across White, Black, and Hispanic women and men, White men being the reference period. $COVID_q$ is a vector of 2 dummy variables that differentiate the pre-COVID period (January 2018 through February 2020), the COVID-19 period (March 2020 through December 2021), and the post-COVID period (January 2022 through November 2022). X is the vector of control variables: age, and age squared, educational attainment (five categories of less than high school, high school, some college, college degree, advanced degree), 51 categorical state variables, and a dummy for being married. θ_t captures monthly fixed effects.

We are especially interested in exploring the additional probability of being NLF for each intersectional group compared to their probability in the pre-COVID-19 period.

Our CPS micro data sets offer three categories for being out of labor force variable: disability, retirement, and other. Since it is important to catch the reason for being out of the labor force, our first set of regressions finds the extra probability associated with NLF, and NLF for "other" purposes separately.

Table II. Regression Results from Model I at Margins Probability of NLF compared with the pre-COVID-19 Period (Age: 25-54)

NLF Probability at Margins with respect to pre-COVID-19 Period			
	RG	Column I NLF Probability	Column II NLF due to Other Reasons Probability
	White Men	0.018***	0.015***

COVID-19 Period (Pre COVID-19 is the base period)		(0.001)	(0.001)
	White Women	0.013***	0.013***
		(0.002)	(0.002)
	Black Men	0.033***	0.024***
		(0.004)	(0.003)
	Black Women	0.029***	0.031***
		(0.004)	(0.004)
	Hispanic Men	0.013***	0.013***
		(0.002)	(0.001)
	Hispanic Women	0.037***	0.033***
		(0.004)	(0.003)
Post COVID (Pre COVID-19 is the base period)	White Men	0.012***	0.008***
		(0.002)	(0.0013)
	White Women	0.001	0.002
		(0.002)	(0.002)
	Black Men	0.003	0.006
		(0.005)	(0.004)
	Black Women	-0.001	0.005
		(0.005)	(0.004)
	Hispanic Men	0.004	0.005***
		(0.002)	(0.001)
	Hispanic Women	0.004	0.004
		(0.004)	(0.004)
Control Variables			
Age	Yes		
Age squared	Yes		
Education	Yes		
State	Yes		
Married	Yes		
Monthly Dummies	Yes		
# of obs.	2,161,912		

Notes: CPS sample weights are used.
Standard errors are in parentheses.
* p<0.1; ** p<0.05; *** p<0.01

Table II presents the results of each group's NLF probability as compared with the pre-COVID-19 period. In the COVID-19 period, the probability of being NLF has increased most for Hispanic women with 3.7 percentage points, then for Black men with 3.3 percentage points, and then for Black women with 2.9 percentage points compared with pre-COVID-19 period controlling for

worker characteristics and marital status. The lowest probabilities are for Hispanic men and White women with 1.3 additional percentage points. Post-COVID-19 period results are only significant for White men, with an additional 1 percentage point increase of being NLF compared with the pre-COVID-19 period. Column II shows the probability of being NLF for "other" reasons. This category can reflect the probability of being NLF due to the extra burden of taking care of children during the COVID-19 period. When we single out this category, Hispanic women have the highest extra probability of 3.3 percentage points, followed by Black women with a 3.1 percentage point extra probability of being NLF, in turn, followed by Black men with an extra probability of 2.4 percentage points.

Next, we turn our attention to whether having a child makes a difference in terms of determining the additional probability experienced especially for non-White women during the COVID-19 period. Our regression equation becomes:

Model II:

$$Prob(NLF_i) = \Phi\big(\pi + \sum_{i=2}^{12} \beta_i\, RGC_i + \sum_{q=2}^{3} \alpha_q\, COVID_q + \sum_{i=2}^{12}\sum_{q=2}^{3} \delta_{i,q}\, (RGC_i * COVID_q) + \sum_{m=Feb}^{Dec} \rho_m\, \theta_m + \mu' X + u_i\big)$$

where Φ is the standard normal cumulative distribution,
$NLF_i = 1\ if\ individual\ is\ out\ of\ the\ labor\ force\ for\ other\ reasons, 0\ otherwise$
RGC_i = a vector of 11 dummy variables combining the race/ethnicity-gender group of an individual with child status: White men, White women, Black men, Black women, Hispanic men, Hispanic women groups broken down to categories of without and with own child aged 18 and under.

$COVID_q$, X, θ_m variables remain the same and u is the random error term. We are especially interested in whether NLF probability for "other" reasons differs for children status.
Table III shows the results of this regression. We can see the largest additional probability is experienced by Hispanic and Black mothers with an increase in NLF probability by 4.3 and 3.5 percentage points, respectively compared with the pre-Covid 19 period. Since the other category includes caring for children and the house, we can assume that Hispanic and Black women with children were pushed out of the labor force during the COVID-19 period controlling for marital status and worker characteristics.

Table III. Regression Results from Model II at Margins Probability of NLF compared with the pre-COVID-19 Period (Age: 25-54)

NLF Probability at Margins with respect to Pre COVID-Period		
	RGC	Probability of Being NLF Due to "Other" Reasons

COVID-19 Period (Pre COVID-19 is the base period)	White Men without Child	0.007***
		(0.001)
	White Men with Child	0.017***
		(0.001)
	White Women without Child	0.011***
		(0.003)
	White Women with Child	0.014***
		(0.001)
	Black Men without Child	0.015**
		(0.006)
	Black Men with Child	0.027***
		(0.004)
	Black Women without Child	0.01
		(0.008)
	Black Women with Child	0.035***
		(0.004)
	Hispanic Men without Child	0.012***
		(0.003)
	Hispanic Men with Child	0.014***
		(0.001)
	Hispanic Women without Child	0.005
		(0.007)
	Hispanic Women with Child	0.042***
		(0.004)
Post COVID-19 Period (Pre COVID-19 is the base period)	White Men without Child	0.004**
		(0.002)
	White Men with Child	0.010***
		(0.001)
	White Women without Child	0.007*
		(0.004)
	White Women with Child	-0.0001
		(0.003)
	Black Men without Child	-0.001
		(0.007)
	Black Men with Child	0.007
		(0.004)
	Black Women without Child	-0.004
		(0.009)
	Black Women with Child	0.007**
		(0.005)

	Hispanic Men without Child	0.005
		(0.003)
	Hispanic Men with Child	0.006***
		(0.002)
	Hispanic Women without Child	-0.001
		(0.008)
	Hispanic Women with Child	0.006
		(0.005)
Control Variables		
Age	Yes	
Age squared	Yes	
Education	Yes	
State	Yes	
Married	Yes	
Monthly Dummies	Yes	
# of obs.	2,161,912	

Notes: CPS sample weights are used. Standard errors are in parentheses.
* p<0.1; ** p<0.05; *** p<0.01

Next, we turn our attention to whether COVID-19 had an impact on the working hours of different groups. Hours of work capture additional potential impacts from movement from full-time to part-time work. We are most interested in seeing whether women and mothers of all races and ethnicities have altered their working hours during the COVID-19 recession period. Our sample includes all prime-aged people; hence the working hours are unconditional on employment.

Model III

$$Hours_i = \pi + \sum_{i=2}^{6} \beta_i \, RG_i + \sum_{q=2}^{3} \alpha_q \, COVID_q + \sum_{i=2}^{6}\sum_{q=2}^{3} \delta_{i,q} \, (RG_i * COVID_q) + \sum_{m=Feb}^{Dec} \rho_m \, \theta_m + \mu' X + u_i$$

where variables have their previous definitions and Hours is the logarithmic transformation of usual hours worked per week (capped at 60 hours) plus one.

Table IV: Regression Results from Model III
Percent change in working hours for each group with respect to the pre-COVID-19 period

COVID-19 Period (Pre COVID-19 is the base period)	White Men	0.072***
		(0.008)

	White Women	-0.038***
		(0.010)
	Black Men	-0.154***
		(0.024)
	Black Women	-0.132***
		(0.022)
	Hispanic Men	-0.088***
		(0.015)
	Hispanic Women	-0.161***
		(0.020)
Post COVID (Pre COVID-19 is the base period)	White Men	-0.042***
		(0.010)
	White Women	0.025**
		(0.012)
	Black Men	0.001
		(0.028)
	Black Women	-0.006
		(0.026)
	Hispanic Men	-0.014
		(0.018)
	Hispanic Women	-0.009
		(0.023)
Control Variables		
Age	Yes	
Age squared	Yes	
Education	Yes	
State	Yes	
Married	Yes	
Monthly Dummies	Yes	
# of obs.	2,161,912	

Notes: CPS sample weights are used. Standard errors are in parentheses.
* p<0.1; ** p<0.05; *** p<0.01

Table IV shows that, as expected, unconditional working hours during the pandemic were lower for all groups, while the percentage drop in working hours was the largest for Hispanic women (16.1 percent decline), followed by an approximately 15 percent decline for Black men, Black women, and Hispanic men. White women, on the other hand, experienced the lowest drop in working hours with an average of 3.8 percent. For the post-COVID period, the only group that

still experienced an overall significant drop in working hours is the group of white men, a finding that agrees with the result from Model I, where White men were found to be still more likely to be out of the labor force during the post COVID period.

Next, we also explore whether having a child changes these outcomes for our groups. For this, our model becomes:

Model IV

$$Hours_i = \pi + \sum_{i=2}^{12} \beta_i \, RGC_i + \sum_{q=2}^{3} \alpha_q \, COVID_q + \sum_{i=2}^{12} \sum_{q=2}^{3} \delta_{i,q} \, (RGC_i * COVID_q) + \sum_{m=Feb}^{Dec} \rho_m \, \theta_m + \mu' X + u_i$$

where variables have their definitions in Model II and Hours is the logarithmic transformation of usual hours worked per week (capped at 60 hours) plus one.

Table V: Regression Results from Model IV
Percent change in working hours for each group with respect to the pre-COVID-19 period.

Percent change in working hours with respect to the Pre COVID-Period		
COVID-19 Period (Pre COVID-19 is the base period)	White Men without Child	-0.093***
		(0.012)
	White Men with Child	-0.038***
		(0.010)
	White Women without Child	-0.055***
		(0.013)
	White Women with Child	-0.021
		(0.015)
	Black Men without Child	-0.162***
		(0.030)
	Black Men with Child	-0.133***
		(0.035)

	Black Women without Child	-0.120***
		(0.030)
	Black Women with Child	-0.148***
		(0.031)
	Hispanic Men without Child	-0.077***
		(0.022)
	Hispanic Men with Child	-0.091***
		(0.019)
	Hispanic Women without Child	-0.120***
		(0.028)
	Hispanic Women with Child	-0.197***
		(0.027)
Post COVID-19 Period (Pre COVID-19 is the base period)	White Men without Child	-0.048***
		(0.014)
	White Men with Child	-0.029*
		(0.013)
	White Women without Child	0.005
		(0.016)
	White Women with Child	0.046***
		(0.018)
	Black Men without Child	0.016
		(0.036)
	Black Men with Child	-0.043
		(0.036)
	Black Women without Child	0.043
		(0.036)
	Black Women with Child	-0.063
		(0.039)
	Hispanic Men without Child	0.014
		(0.026)
	Hispanic Men with Child	-0.016
		(0.023)
	Hispanic Women without Child	0.010
		(0.033)
	Hispanic Women with Child	-0.037
		(0.032)
Control Variables		
Age	Yes	
Age squared	Yes	
Education	Yes	

State	Yes
Married	Yes
Monthly Dummies	Yes
# of obs.	2,161,912

During the COVID period, white fathers, white mothers, and black fathers experienced a smaller reduction in their working hours compared to non-parent members of the same groups, while the reverse was true for Black mothers, Hispanic mothers, and Hispanic fathers, which all experienced large reductions to their working hours compared to non-parent members of these groups. This difference was particularly large for Hispanic mothers, who reduced their working hours by 19.7 percent, compared to the 12 percent reduction by Hispanic women with no dependent child. During the post-COVID-19 period, White men were the only group who still worked fewer hours per week regardless of parental status, while White mothers were working 4.6 percent more hours per week compared to the pre-COVID period.

IV. Concluding Remarks

The most transparent impact of the COVID-19-induced recession on the labor market has been the increase in unemployment to an unprecedented level of 14.7 percent in April 2020. Still, the unique set of conditions such as the widespread closures of daycares and schools combined with the existing disparities in the labor market such as gendered and racial occupational segregation as well as the cultural gendered norms surrounding the unpaid domestic labor of women made the period extremely challenging to women of color. One outcome of all these factors was the decrease in the labor force participation rate for 20 years and above population with 5.8, 4.6, 4.6, and 3.6 percentage point decline between February 2020 and April 2020 (BLS) for Hispanic women, Black women, Black men, and Hispanic men, respectively. These numbers are followed by a 2.7 and 2.6 percent decline for White women and men.

In our analysis, we show that even when we control for factors that contribute to the racial participation gap such as educational attainment and marital status for prime-aged people, the NLF for other purposes (including reasons such as childcare and domestic work) probability increased for Hispanic women by 3.3 percentage points and for Black women by 3.1 percentage points during the period from March 2020 through December 2021. Furthermore, when we incorporate parental status into the analysis, the NLF for other purposes probability for Hispanic mothers increases to 4.3 percent followed by 3.5 percent for Black mothers during the COVID-19 period.

Even though we control for educational attainment in our analysis, a cursory look into the pooled sample of the workers in the NLF category during our definition of the COVID-19 period shows that using sample weights, 64.6 percent of all Hispanic women and 64.7 percent of Hispanic mothers in the NLF category are high school or below high school graduates. The same category is 51 percent for Black women and 37 percent for White women. Furthermore, even though 35.4 percent of Hispanic women do not have children aged 18 or below in their household, 53.3

percent of them are mothers to 6-13 and 14-17-year-old children. In addition, even though our results control for marital status, we can see that 26.3 percent of all Black women in NLF are single mothers, while this percentage is 9.4 percent for White women, and 14.9 percent for Hispanic women. These Black mothers did not have a spouse to fall back on to share the additional childcare responsibilities during COVID-19. Therefore, it is obvious that household characteristics and gender norms as to how much unpaid domestic and childcare labor is expected from women as well as educational attainment play a role in determining the NLF probability.

One reason that especially non-White women experience an additional probability of being NLF even after controlling for marital status, educational attainment, and location during the COVID-19 period has to do with the lack of opportunities for remote working. Dey et al (2021) state using CPS datasets that only 16.5 percent of Hispanic workers and 21.5 percent of Black workers were likely to work from home between May 2020 and December 2020 as opposed to 25.2 percent of White workers and 41.7 percent of Asian workers. In addition to the racial differences in terms of accessing remote work, Dey et al (2021) also show that of workers who were able to telework in this period, only 12.1 percent of them were high school graduates and below.

It is known that U.S. women's LFPR has been declining since the 2000s and it is one of the lowest among advanced countries. Even though part of this decline can be explained by the demographic transitions, juggling unpaid domestic and childcare work with paid work still contributes to the decline. This, combined with the racial inequities already existing in the U.S. workforce made COVID-19 shock especially challenging for non-White women. As of writing this chapter, the LFPRs of non-White women did not recover back to their pre-Pandemic levels with the largest gap being for Black women at 1.9 percentage and next for Hispanic women with a 1.6 percentage points difference. The additional childcare responsibility made the unequal distribution of work within households more apparent. For these women to come back to the labor force, it is obvious that expanding childcare support is vital. Furthermore, given the over-representation of non-White women in lower-paid service sectors that do not require high educational attainment, improving accessibility of college education to especially non-White women should be made a priority.

Our research contributes to the feminist economics literature by emphasizing the crucial role of unpaid domestic work, including the impact of an escalating childcare burden on shaping women's decisions regarding labor force participation. Feminist economics has extensively examined unpaid domestic work which encompasses the day-to-day household maintenance and caregiving responsibilities for children and the elderly within the household (see among other Folbre 2010). Unpaid work is also recognized as one of the drivers of gender inequality within the labour market, including the persistent gendered earnings gap (See among others Ferrani et al 2011). Our findings enrich this literature by showing this unpaid work distribution and care work at home differs among different races which translates into differences in labour supply decision of women of different race and ethnicities. Future research has the potential to integrate labour supply alterations with time-use studies, providing a nuanced understanding of the specific impact of unpaid work on women's decisions to exit the labour force.

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