Women's Labor Force Exits during COVID-19: Differences by Motherhood, Race, and Ethnicity

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Women’s Labor Force Exits during COVID-19: Differences by Motherhood, Race, and Ethnicity

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Abstract

Women had larger increases in labor force exits than men during the COVID-19 pandemic, and increases were particularly large among women living with children. After controlling for detailed job and demographic characteristics, we find that the pandemic led to significant excess labor force exits among women living with children under age six. We also find evidence of larger increases in exits among lower-earning women living with school-aged children. The presence of children also predicted larger increases in exits during the pandemic among Latina and Black women relative to White women. Overall, we find evidence that pandemic induced disruptions to childcare, including informal care from family and friends, led to additional labor force exits by lower earning women and women of color.

Keywords: Women, Labor Force Participation, Race, Ethnicity, Labor Supply, COVID-19

JEL Numbers: J16, J70, H31, I14, I18

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Disruptions during the first year of the COVID-19 pandemic affected women’s working lives in many ways. Restrictions had direct effects on the ability to safely work in person while families’ formal and informal childcare arrangements were interrupted. Daycare centers were closed, schools switched to remote learning, and health concerns restricted the ability of family and friends to care for children. These disruptions were not felt equally across women, and this paper demonstrates their unequal effects.

We examine the heterogeneous effects of the pandemic on women’s labor force exits. We focus on the role of children and on differential effects between women of different incomes, races, and ethnicities. We find that the pandemic led more women with children under age six to leave the labor force. The pandemic also had unequal effects by income, race, and ethnicity. Our results suggest that childcare disruptions and increased caregiving responsibilities led to larger increases in exits among lower-earning women living with children ages 6 to 12 compared to higher-earning mothers with similarly aged children. While factors relating to employment explain the largest share of the differences in exit rates between women of color and White women both before and during the pandemic, the effect of having children and the interactions of having children with pre-pandemic earnings and with marital status become important explanatory factors during the pandemic.

We use panel data to isolate labor force exits of previously employed women during the pandemic to study the role that children and increased caregiving responsibilities played. We compare how likely employed women with children are to exit the labor force relative to observably similar women who do not have children. We allow for the effect of children to differ based on interactions of children’s ages, previous earnings, and marital status. The strategy allows us to condition on initial employment and to control for a rich variety of pre-pandemic characteristics, including earnings, occupation level changes, industry level changes, and the differing geographic effects of the pandemic.

Our main specification compares women’s exits during the pandemic with exits before the pandemic, because children also affected women’s labor force exits before the pandemic. Specifically, we identify “excess exits” from the labor force during the pandemic above and beyond those expected based on relationships just before the pandemic and during the Great Recession.

Women’s labor force exits during the pandemic amplified existing economic inequality based on two pieces of evidence. First, we find a larger estimated effect of the pandemic on lower-earning mothers’ labor force exits. Second, a decomposition shows that living with children helps to explain larger increases in labor force exits among Latinas and Black women relative to White women. Notably, differential effects of children by marital status and previous earnings meaningfully contribute to labor force exit gaps during the pandemic, but not before it. Education, occupation, and industry also explain a large portion of the racial differences in exits, including
the increased gaps during the pandemic. However, a substantial portion of the overall gaps as well as the increase in gaps remains unexplained leaving open the possibility that trends in unmeasured discrimination also play a significant role.

Our results speak to the effects of childcare, including informal childcare provided by grandparents, on women’s labor force participation and economic inequality. A substantial literature studies the effects of formal childcare, focusing on variation in costs and availability of pre-K schooling.\footnote{See Morrissey (2017) for a survey.} A smaller group of papers uses data spanning generations to show how living close to grandparents affects parents’ labor market outcomes.\footnote{Compton and Pollak (2014) and Krolikowski, Zabek and Coate (2020) use this strategy.} We use the pandemic as a natural experiment to show what happened to mothers when all forms of childcare were severely constrained. The labor force exits we identify in the paper may have lasting negative effects on women’s future earnings as workforce interruptions and lower levels of experience, which are more common for women, still contribute to the gender earnings gap (Blau and Kahn (2017)).

We add to the literature by focusing on heterogeneity between women that is otherwise obscured by a focus on overall differences between men and women. For example, the patterns that we investigate by parenthood, race, and ethnicity are not nearly as apparent when looking at men.\footnote{Although men of color were more likely to leave the labor force in the early months of the pandemic, that difference moderated in the fall of 2020 such that labor force participation declines were similar for men of color and White men in March 2021. Men living with children looked similar to men with no children at home in terms of labor force participation rates throughout the pandemic.} The differences between groups of women are larger than those between men and women overall (Goldin (2022)). Our analysis identifying which women left the labor force adds context to the previous work studying women’s pandemic labor market experiences.\footnote{These include Heggeness (2020); Russell and Sun (2020); Albanesi and Kim (2021); Leigh, Montes and Smith (2021); Luengo-Prado (2021); Pitts (2021); Couch, Fairlie and Xu (Forthcoming), Garcia and Cowan (2022); and Hansen, Sabia and Schaller (2022).}

The paper proceeds as follows. First, we briefly describe our data and methods. Second, we present descriptive patterns about labor force participation to motivate our analysis. Third, we present our results on the effects of children on excess pandemic exits and our decompositions of women of color’s higher exit rates. Finally we conclude with a discussion of the implications for policy and future research.

I Data

We study the labor force participation of women during the first year of the COVID-19 pandemic, with a focus on outcomes from September 2020 to February 2021. Our analyses use monthly data from the Current Population Survey (CPS) from the U.S. Census Bureau and the U.S. Bureau of...
Labor Statistics accessed from IPUMS (Flood et al. (2020)).

Nearly all of our analysis uses a linked longitudinal sample of individuals where we use an exact 12 month lag. Individuals in this main sample are observed twice: first at year and month $t$ and second at year and month $t - 12$. While the linking reduces the sample size substantially, it allows us to create a sample of individuals who were employed in their first sample observation along with their previous job characteristics.

Focusing on previously employed women allows us to measure the job characteristics of previously employed women and focuses the analysis on women who are attached to the labor force. The linking is particularly meaningful during the pandemic, when we are able to observe women in jobs before the pandemic’s onset. So as to only include pre-pandemic jobs we we only include observations through February of 2021. Therefore the pre-pandemic observation is from February 2020 or before.

Our sample includes prime-working-age women aged 25 to 54 who were employed twelve months before. We use information on employment and labor force status using the standard CPS definitions to categorize respondents as employed, unemployed, or not in the labor force. All results using linked observations are weighted using longitudinal weights provided by IPUMS.

We characterize respondents’ race and ethnicity by calling them Latino if they say they are of Hispanic, Latino, or Spanish origin. Among those who answer that they are not Latino, we characterize them according to their (single) reported race as Black, White, or other. We focus on Black, White and Latino respondents in this paper because the other racial groups have sample sizes too small to separately analyze.

We use information on the ages of other individuals in the household independent from familial relationships to create indicators for the presence of children of different ages. This measure has the benefit of including caregiving responsibilities for children in the household even if they are not one’s own children, although it may differ from other analyses that focus only on respondents’ children.

We also consider industry- and occupation-level impacts of COVID-19 as measured by special questions added to the CPS about COVID-19 in the summer of 2020. Specifically, we construct industry- and occupation-level indices of the percentage change in industry employment from one year earlier, the share of workers who are working from home, and the share of workers who responded that they had lost work in the past four weeks because of the pandemic (regardless of

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5The Current Population Survey currently contains only information about sex, not gender. So we use sex as an imperfect proxy for gender.
6For our main sample, we are linking respondents’ surveys when they are in the outgoing rotation group since we rely on pre-pandemic earnings, which are only observed during certain months of the CPS.
7Since our sample of employed workers is from before March of 2020 and our main results use labor force participation, not unemployment, our measures are not subject to issues arising from the misclassification of workers who are on temporary layoff during the COVID pandemic.
whether they were paid). To remove a mechanical correlation in our measures as they are applied to women’s labor force exits, we consider the pandemic labor market experiences of men to construct our measures. We also increase our sample size in sometimes small (four digit) industries and occupations by pooling observations from May to August 2020.\(^8\)

Finally, we normalize individuals’ usual weekly earnings to control for earnings one year prior to year-month \(t\). All demographic and employment variables are measured from the first observation, at \(t - 12\), while our outcomes are from the second observation.

II Pandemic Patterns in Labor Force Exits

Policymakers and researchers have focused on the role of caring for children in explaining higher declines in labor force participation among women (Furman, Kearney and Powell III (2021), Albanesi and Kim (2021)). As we show in panel A of figure 1, women in households with young children saw the sharpest increases in labor force exits, followed by women living with school-aged children. Women in households with no children under age 13 who were previously employed have exit rates that are only around 1 percentage point higher than before the pandemic. The plot also shows that labor force exits were declining more so for women with young children before the pandemic meaning their larger pandemic increases represented a sharp break from previous trends.\(^9\) In panel B, we show that, in contrast to the patterns among women, there were relatively small differences in labor force exits between men with and without children. Together, the results suggest that the presence of children influenced women’s labor force participation more than they did for men, highlighting the effects of childcare disruptions combined with many women’s larger roles in childcare compared with men.\(^10\)

Pandemic labor force exits also differed by race and ethnicity. Women of color saw larger and more persistent increases in exits relative to White women. Men of color also experienced large increases in exits, but the differences by race and ethnicity narrowed after the summer of 2020. As we show in panel A of figure 2, Black women and Latinas, who were working one year prior, saw between a 4 and 5 percentage point increase in their labor force exits compared to between a 1 and 2 percentage point increase for White women.\(^11\) In panel B, Black and Latino men had much larger increases in labor force exits relative to White men but those differences closed substantially after summer of 2020. The labor force exits that we document mirror what previous

\(^8\)Our exercise is meant to be descriptive. However, these impacts are quite plausibly exogenous in that it is unlikely that the differences are due to the selection of women into occupations and industries for other reasons.

\(^9\)See Goldin (2022) for further discussion of recent gains in participation among women with young children.

\(^10\)There were also larger declines in exits in the months before the pandemic among Latinas and Black women than there were among White women. So the pandemic represented an even stronger break from these pre-existing trends.

\(^11\)We use seasonally-adjusted three month average values computed from January 2003 to February 2020 to adjust for monthly seasonality in our outcome variables. All outputs are weighted using sampling weights.
studies have shown for employment patterns. In the early months of the pandemic, employment losses were larger for women relative to men (Albanesi and Kim (2021)) and for workers of color (Couch, Fairlie and Xu (2020), Cortes and Forsythe (Forthcoming)). The patterns of labor force exits by race and ethnicity suggest that employment losses translated into labor force exits for women in general and Black women and Latinas in particular.

Figure 1: Labor Force Exits, by Presence of Children

Note: Plotted are three-month moving average changes in labor force exits for prime-working-age workers, by the presence of children aged 0 to 5 and 6 to 12 before the pandemic among workers who were employed one year prior. Each is adjusted for monthly seasonality based on average monthly values from January 2003 to February 2020. Statistics are weighted using sampling weights. Data are from the Current Population Survey downloaded from IPUMS Flood et al. (2020).

III Explaining Women’s Labor Force Exits

This section proceeds with two interrelated analyses of the differences in women’s observed labor force exits by the presence of children and across racial groups. First, it further examines patterns in women’s labor force exits during the pandemic to test if they are most plausibly related to childcare disruptions and increased caregiving responsibilities or other differences between women with and without children. In our preferred specification, we estimate the additional role that these factors played in labor force exits during the pandemic relative to the period immediately before the pandemic. We find evidence that childcare disruptions and general increases in caregiving did lead to additional labor force exits by women with children during the pandemic. Next, we use a modified, non-linear Oaxaca decomposition technique (Fairlie, 2005) to show the extent that covariates – like motherhood, wages, and occupational sorting – can explain Latinas and Black women’s higher rates of labor force exits prior to and during the pandemic. One result from the decomposition analysis is that the additional impacts of children on labor force exits during the
Note: Plotted are three-month moving average changes in labor force exits for prime-working-age workers, by race and ethnicity among workers who were employed one year prior. Each is adjusted for monthly seasonality based on average monthly values from January 2003 to February 2020. Statistics are weighted using sampling weights. Data are from the Current Population Survey downloaded from IPUMS Flood et al. (2020).

pandemic, particularly among low earning women, were the single biggest explanatory factor for the larger increases in labor force exits among Latinas and Black women. However, the increases are still largely unexplained by observables.

**Empirical Methodology**

Our analysis of labor force exits uses linear probability models to predict the likelihood that a woman who was previously employed will have exited the labor force in the previous 12 months. We characterize observations into three categories based on the month of the last interview. First, pandemic observations includes women whose second observation occurred between September 2020 and February 2021. The period coincides with the beginning of the typical 2020-21 school year and the conclusion of the first six months of the pandemic. We intentionally exclude the first six months of the pandemic and begin in September 2020 so that the results will not be overly influenced by relatively short duration spells out of the labor force following job losses in March 2020. We end in February 2021 because it is the latest we can measure labor market exits from pre-pandemic jobs using the CPS. Second, pre-pandemic observations include those where the woman is last observed between September 2015 and February 2020, again including only women who can be linked to their 12 month prior observation and were employed in that earlier observation. 

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12 Individuals are only included in the analysis if their observation in month-year \( t \) can be linked to the same person 12 months prior in \( t - 12 \).
As a robustness exercise, we also include observations from the Great Recession. Each sample only includes prime-working-age (aged 25 to 54) women.

We first estimate equation 1, which predicts whether or not a woman has exited the labor force measured in year-month $t$ based on characteristics measured at her previous interview in $t - 12$. The $\beta_0$ coefficients show the impact of our characteristics of interest, $Z_{t-12}$, on the probability that a woman has exited the labor force conditional on having been working one year before. Our covariates of interest are living with a child aged 0 to 5, living with a child aged 6 to 12, and interactions of living with the two age ranges of children with marital status and weekly earnings. The interactions allow for different effects of children on women’s labor force exits based on marital status and earnings. We control for other characteristics in $X$. The controls include a cubic for the age of the woman, industry and occupation COVID-19 effects as described in the data section, state and month fixed effects, race and ethnicity indicators, and educational attainment controls. The specification also includes month and state level fixed effects ($\gamma_t$ and $\gamma_j$) to further control for effects that vary across time and geography. We estimate this specification separately for both our pandemic sample and our pre-pandemic sample.

$$\text{Exit}_t = Z_{t-12}\beta_0 + X_{t-12}\gamma_0 + \gamma_t + \gamma_j + \epsilon_1$$ (1)

Next, we estimate effects on labor force exits in excess of historical trends using both the pre-pandemic and the during pandemic samples with equation 2. The specification is an interaction of the single time period specification (equation 1) with an indicator for whether the observation is during the pandemic or not ($1_{\text{pandemic}}$). Our coefficient of interest, $\beta_1$, is on the interaction term between the pandemic indicator and our coefficient of interest. Its interpretation is the additional effect of each variable on exits during the pandemic in excess of the variable’s effects before the pandemic. So we study excess exits during the pandemic relative to both the years immediately before the pandemic and the Great Recession. Note that the interaction terms apply to the controls as well, so we are controlling for additional impacts of other variables during the pandemic – including varying geographic impacts of the pandemic on labor force participation.

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13 This includes women observed during the National Bureau of Economic Research dated recession from December 2007 to June 2009. We use the entire period to provide more precision. Results are similar using only the first year when we observe our sample as being employed before the recession’s onset.

14 Because we only observe individuals twice, one year apart, exits are those that have occurred at any point during the previous year and have persisted until the second observation.

15 We also include the main effects of marital status and weekly earnings both as controls and for ease of interpretation.
Finally we use an Oaxaca-Blinder-Fairlie non-linear decomposition to quantify how much observed characteristics can explain Latinas’ and Black women’s higher rates of labor force exit during the COVID-19 pandemic.\textsuperscript{16} The decomposition consists of two steps. First, we estimate a regression model relating labor force exits to relevant covariates including measures of household composition and information on previous employment. Second, we use the model’s estimated parameters to evaluate the effects that differences in the covariates across racial groups have on the probability of exiting the labor force.\textsuperscript{17} We do this decomposition separately for the pre-pandemic sample and the pandemic sample for comparison.

The idea behind the decomposition is most easily shown in the classical, linear case. Here the model is simply a linear probability model predicting labor force exits for individuals (i): \( \text{Exit}_i = X_i \beta + \varepsilon_i \).

\[ \begin{align*} \text{Exit}_j - \text{Exit}_{j'} &= \left( \bar{X}_j - \bar{X}_{j'} \right) \hat{\beta} + \bar{X}_j (\hat{\beta}_j - \hat{\beta}) + \bar{X}_{j'} (\hat{\beta} - \hat{\beta}_{j'}) \end{align*} \]  

Equation 3 shows that the overall difference in labor force exits for women of race \( j \) compared to women of race or ethnicity \( j' \), \( \text{Exit}_j - \text{Exit}_{j'} \), can be divided into terms that are explained by the model and terms that remain unexplained. Hats denote estimated coefficients and bars denote average values in the data. We follow Oaxaca and Ransom (1994) in using the coefficients from a pooled model with all women (\( \hat{\beta} \)), as opposed to only White women (\( \hat{\beta}_{j'} \)), for the explained result.

The explained portion estimates the difference that would result due to the observed average differences in covariates and the relationships in the data as estimated by the pooled regression. The unexplained portion includes effects that are due either to differences in relationships between covariates and outcomes for women of the specified race or ethnicity (e.g. motherhood and lower earnings leading to a larger number of labor force exits for women in group \( j \)) or differences in labor force exits that are unrelated to covariates (e.g. unobserved institutional factors).

We follow Fairlie (2005) in using a logit specification (denoted \( F(X_i \beta) \)) to constrain predicted probabilities to between zero and one. The specification leads to a modification of equation 3 to present the difference in average probabilities of a labor force exit due to differences in covariates

\textsuperscript{16}The method was introduced by Kitagawa (1955), predating its use in economics.

\textsuperscript{17}Fortin, Lemieux and Firpo (2011) provide an excellent overview of decomposition methods generally, including Oaxaca-Blinder decomposition, and Fairlie (2005) provides more details on our specific methodology. A recent example using this technique for a similar question is Couch, Fairlie and Xu (2020).
in the model, as shown below.

\[
\text{Exit}_j - \text{Exit}_{j'} = F(X_{ij}\hat{\beta}) - F(X_{ij'}\hat{\beta}) \\
\text{Overall} = \text{Explained} + F(X_{ij}\hat{\beta}) - F(X_{ij'}\hat{\beta}) + F(X_{ij'}\hat{\beta}) - F(X_{ij'}\hat{\beta}')
\]

(4)

We present the differences in the average predicted probability of exit from changing the distribution of the covariates of interest from the values for the reference group \(j'\) with our group of interest \(j\), while keeping the distributions of all other covariates fixed.\(^{18}\) This allows us to decompose the observed differences in exits seen in the data into parts that are explained overall and by different observed covariates and a part that remains unexplained.

**Covariates and Summary Statistics**

Table 1 provides information on how exits and covariates differ in our sample across previously employed women with and without children. Around 8 percent of the sample left the labor force during the pandemic. Women living with children had higher pandemic era labor force exits than those without, mirroring our earlier figures looking at differences relative to the period before the pandemic. Women living with children are also younger on average, more likely to be married, and have slightly lower earnings than those without children.

There also is substantial overlap between our two categories of women with children. Table 1 shows that around 40 percent of women living with a child aged 0 to 5 also live with a child 6 to 12. Around 30 percent of women living with a child aged 6 to 12 also live with a child under 6. Half of the women in our sample have a Bachelor’s degree, around 20 percent live with a child under 6, and nearly 30 percent live with a child between 6 and 12 years of age.

**The Role of Children in Women’s Labor Force Exits**

**Main Results**

Before the pandemic, living with young children was associated with higher likelihoods of exit among married women and women who earned less as shown in column 1 of table 2. A married woman living with at least one child aged 0 to 5, with average earnings, was 3.6 percentage points

\(^{18}\)Since the detailed decomposition into categories (though not the result in terms of overall explanatory power) is sensitive to the ordering variables are introduced into the model, we introduced variables in a random order and averaged the effects over 10,000 iterations for each specification.
Table 1: Summary Statistics

|                                      | Overall  | Age 0 to 5 | Age 6 to 12 | None Under 13 |
|--------------------------------------|----------|------------|-------------|---------------|
| Labor force exits                    | 0.07     | 0.11       | 0.09        | 0.06          |
| Less than high school                | 0.05     | 0.05       | 0.07        | 0.04          |
| High school or GED                   | 0.19     | 0.20       | 0.21        | 0.19          |
| Some college                         | 0.26     | 0.26       | 0.26        | 0.26          |
| Bachelor's degree (only)             | 0.30     | 0.28       | 0.27        | 0.32          |
| More than a bachelor's degree        | 0.20     | 0.22       | 0.18        | 0.20          |
| Lived with a child aged 0 to 5       | 0.21     | 1.00       | 0.30        | 0.00          |
| Lived with a child aged 6 to 12      | 0.29     | 0.41       | 1.00        | 0.00          |
| Was married                          | 0.57     | 0.71       | 0.68        | 0.49          |
| Black                                | 0.13     | 0.14       | 0.14        | 0.13          |
| Latina                               | 0.17     | 0.19       | 0.21        | 0.16          |
| White                                | 0.59     | 0.57       | 0.55        | 0.61          |
| Age                                  | 39.75    | 35.71      | 39.57       | 40.82         |
|                                      | (8.54)   | (6.25)     | (6.52)      | (9.42)        |
| Previous weekly wage                 | 988      | 953        | 938         | 1010          |
|                                      | (659)    | (668)      | (655)       | (654)         |
| Occupation employment change         | -0.04    | -0.03      | -0.04       | -0.04         |
|                                      | (0.13)   | (0.13)     | (0.13)      | (0.13)        |
| Occupation share working from home   | 0.36     | 0.35       | 0.35        | 0.36          |
|                                      | (0.23)   | (0.23)     | (0.23)      | (0.23)        |
| Occupation share unable to work due to COVID-19 | 0.17 | 0.17 | 0.17 | 0.17 |
|                                      | (0.10)   | (0.10)     | (0.10)      | (0.10)        |
| Industry employment change           | -0.05    | -0.05      | -0.05       | -0.05         |
|                                      | (0.08)   | (0.07)     | (0.07)      | (0.08)        |
| Industry share working from home     | 0.37     | 0.38       | 0.37        | 0.37          |
|                                      | (0.17)   | (0.16)     | (0.17)      | (0.17)        |
| Industry share unable to work due to COVID-19 | 0.17 | 0.16 | 0.17 | 0.17 |
|                                      | (0.09)   | (0.08)     | (0.08)      | (0.09)        |

Note: This table presents the mean values and standard deviations (only for continuous variables) of covariates in each of our categories of race and ethnicity. The estimation sample is prime-working-age women from September 2020 to February 2021 in the Current Population Survey who were employed one year earlier, which is when the variables are measured (besides age, education, and exits).
more likely to exit the labor force relative to a married woman without children under 13 in the home who also earns an average wage. In contrast, the analogous effect for an otherwise identical unmarried woman was to be a statistically insignificant 0.9 percentage points less likely to exit the labor force.

Exits during the pandemic were much more common among women with young children even after controlling for observed characteristics. As shown in column 2 of table 2, the direct effect of having a young child was 3.3 percent, meaning that unmarried women with young children were more likely to exit the labor force. Married women with young children also saw an increase in exits during the pandemic relative to similar women without children.

Column three of table 2 shows our main finding – women who lived with children under six experienced greater increases in their exit rates during the pandemic relative to observably similar women. Living with a child under age 6 was associated with a 4.2 percentage point increase in excess exits among single women with average earnings relative to similar single women with no children in the household. Living with a child under age 6 was also associated with 3 percentage points higher excess exits among married women with average earnings. The estimated effect sizes are quite large relative to the overall 2 percentage point decline in labor force participation during the pandemic. The estimate of living with a young child interacted with standardized pre-pandemic earnings is statistically insignificant, though the estimate suggests larger effects for lower-earning women.

Our results also suggest that for women living with children between ages 6 and 12, excess exits were concentrated among lower-earning women. Specifically, we estimate that a woman with earnings one standard deviation below the pre-pandemic average earnings living with a school-aged child had a statistically significant 1.7 percentage point larger increase in labor force exits relative to a woman with the same aged children with average earnings. The effect of the interaction between earnings and the presence of school-aged children stands in contrast to the small and statistically insignificant coefficients on the direct effect of weekly earnings (-0.2 percentage points). The small direct effect of earnings suggests that the mechanisms go beyond factors that affected all low earning women equally, like more generous governmental benefits. One explanation for the higher rates of exit among lower-earning women with school-aged children is a loss of school as an inexpensive mode of childcare. Additionally rates of homeschooling increased during the pandemic, and homeschooling may have been more difficult to combine with work for lower-income women or women who were unable to work remotely (Musaddiq et al. (2021)).

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19 The implied effect for married women is statistically significant at the one percent level. However the difference between married and unmarried women is not statistically detectable.
20 This includes the direct effect of lower earnings as well.
21 Additionally, the direct effect of having a child aged 6 to 12, and the interaction between married status and living with a child aged 6 to 12 are statistically insignificant, though potentially economically meaningful.
Table 2: Effects of children on labor force exits

| Variables                                | Pre-pandemic | Pandemic | Excess: pandemic and pre-pandemic | Excess: pandemic and great recession |
|------------------------------------------|--------------|----------|----------------------------------|-------------------------------------|
|                                          |              |          |                                  |                                     |
| Lived with a child aged 0 to 5           | -0.009       | 0.033    | 0.042                            | 0.039                               |
|                                          | (0.004)      | (0.011)  | (0.011)                          | (0.012)                             |
| Lived with a child aged 6 to 12          | 0.005        | 0.014    | 0.009                            | 0.020                               |
|                                          | (0.003)      | (0.012)  | (0.012)                          | (0.012)                             |
| Was married                              | 0.004        | 0.012    | 0.008                            | 0.014                               |
|                                          | (0.002)      | (0.006)  | (0.006)                          | (0.007)                             |
| Previous weekly wage (normalized)        | -0.010       | -0.012   | -0.002                           | 0.004                               |
|                                          | (0.001)      | (0.005)  | (0.005)                          | (0.005)                             |
| Wage (normalized) by living with child aged 0 to 5 | -0.016       | -0.025   | -0.010                           | -0.007                               |
|                                          | (0.002)      | (0.009)  | (0.009)                          | (0.011)                             |
| Wage (normalized) by living with child aged 6 to 12 | -0.002       | -0.017   | -0.015                           | -0.013                               |
|                                          | (0.002)      | (0.007)  | (0.007)                          | (0.007)                             |
| Married by living with child aged 0 to 5  | 0.045        | 0.033    | -0.012                           | -0.007                               |
|                                          | (0.005)      | (0.018)  | (0.017)                          | (0.018)                             |
| Married by living with child aged 6 to 12 | 0.007        | -0.002   | -0.009                           | -0.013                               |
|                                          | (0.004)      | (0.015)  | (0.014)                          | (0.014)                             |
| Observations                             | 86,377       | 8,787    | 95,164                           | 45,919                              |
| Age cubic                                | X            | X        | X                                | X                                   |
| Race and ethnicity indicators            | X            | X        | X                                | X                                   |
| Month fixed effects                      | X            | X        | X                                | X                                   |
| State fixed effects                      | X            | X        | X                                | X                                   |
| Industry and occupation controls         | X            | X        | X                                | X                                   |
| Education controls                       | X            | X        | X                                | X                                   |

Note: The pandemic led to more exits among women with children under six relative to both before the pandemic and the Great Recession. Low-earning women with children 6 to 12 were also more likely to exit during the pandemic. Shown are coefficients from linear probability models predicting labor force exits (columns one and two) and excess exits during the pandemic ($\beta_2$ in equation 2) relative to the period before it (column 3) and the Great Recession (column 4). The estimation samples for the first two columns are prime-working-age women from September 2020 to February 2021 who were employed one year earlier. The last two also include women observed from September 2015 to February 2020 (column 3) and December 2007 to June 2009. Standard errors are clustered by month.
Additionally, we find no evidence that the pandemic increased labor force exits among married women with young children any more than it did among unmarried women. If anything, our estimates suggest that the pandemic led to more excess exits among unmarried women than among married women. One hypothesis voiced early in the pandemic was that childcare disruptions could lead more women with small children and working husbands to drop out of the labor force, in response to the gap in men’s and women’s wages and the demands of two parents working full time. However, the negative coefficients on the interaction between being married and living with children suggests that the pandemic has not resulted in larger increases in labor force exits for married women relative to unmarried women.

Our result that women who live with children had excess exits during the pandemic is also true when we use the Great Recession as our comparison. This provides additional evidence that the effect is due to the pandemic induced increases in childcare responsibilities rather than an economic downturn more generally. Column 4 of table 2 shows that the pandemic led to a 3.9 percentage point increase in the likelihood that an unmarried woman, with average earnings, living with children under six would exit the labor force. It also shows a somewhat larger impact of older children, at 2 percentage points for the same set of unmarried women with average earnings. The interaction term of living with an older child and earnings in column four is also of similar magnitude to column three, but imprecision makes it insignificantly different from zero. The takeaway is that the results are not driven by the comparison with the relatively strong labor market before the pandemic’s onset, since they also apply when we compute excess exits relative to a recession.

Beyond variables related to children we find that other factors were not very predictive of additional exits during the pandemic. Appendix table A.1 shows that exits were more common for women with less education both before and during the pandemic. Excess exits during the pandemic were also monotonically decreasing by educational attainment, though point estimates are often not statistically different from zero. The direct effect of earnings on excess exits is small in magnitude and statistically indistinguishable from zero.

After controlling for education and earnings, we find that occupation and industry measures of the impact of COVID-19 play only a minor role in predicting excess labor force exits. We find small and statistically insignificant associations with the industry and occupational impacts of COVID-19, which suggests that occupation- or industry-specific human capital and adjustment frictions explain little of the increase in women’s pandemic labor force exits, at least for women with similar educational attainments and previous earnings. Interestingly, the occupations where our constructed pandemic-era employment disruptions were largest also were the occupations with higher pre-pandemic rates of exit (column 1 of appendix table A.1). Women who worked in industries and occupations that had higher shares of workers working form home during the pandemic

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22 Alon et al. (2020) and Goldin (2020) mention this hypothesis.
were less likely to leave the labor force even before the pandemic in our specification.\footnote{Of course, it is also possible that occupation and industry are measured with error in the CPS.}

Our findings are based on the presence of children in the home, but we interpret the effects as arising from disruptions to families’ childcare arrangements that increased some women’s caregiving responsibilities. The disruptions also likely go beyond formal school and daycare closures since there also were disruptions to informal care networks due to health concerns like grandparents’ concerns about exposure from their grandchildren. Interruptions to informal care could have been particularly difficult because of the unreliability of formal childcare and the possibility that changing work arrangements could lead to temporary gaps in childcare that would be easier to fill informally.\footnote{Another factor could be concerns about children’s exposure to COVID-19 in childcare settings.}

Another piece of evidence that caregiving led to labor force exits during the pandemic is a rise in the share of women who left the labor force and said that they are out of the labor force because of caregiving. Appendix figure A.1 shows that the share of women women living with kids under age 6 who said they exited the labor force because of caregiving responsibilities increased by nearly 4 percentage points during the pandemic.

**Robustness and Alternative Specifications**

In this section, we first examine how our modeling assumptions affect our estimates, and second test some alternative ways of approaching our research question.

Across a number of specifications, we find that the effects of children on labor force exits are qualitatively robust. Column 1 of table 3 shows our baseline estimates. In column two, we estimate a sparse model that includes only indicators for the presence of children. Without any controls, having a preschool aged child increased labor force exits by 3 percentage points while having a school aged child increased them by 1.7 percentage points. In column three, we add the demographic individual level controls and find that the effect of school aged children on excess exits declines. In column four, we add the interactions between having children and earnings and marital status in addition to the earnings control. The estimates change appreciably from column three to column four, highlighting the heterogeneity in the effect of children on women with different marital status and earnings. Column four and column one look nearly identical suggesting the limited role of state, time, and occupation or industry controls play. In column five, we add month-year fixed effects, and state by pandemic fixed effects with little effect on our estimates. In column six, we run our baseline regression without weights and the magnitude of our estimates decline although they remain consistent in sign. Finally in column seven, we control for the number of children under age 13 in the household. Excess exits increase as the number of children increases. The direct effect of having children in each age group is slightly smaller, as some of the effect for
each age group is taken into account in the number of children coefficient. The overall results are qualitatively similar to the baseline estimates however.

Although we focus on excess exits in our main specification, it also would be of interest to see if women remained employed through the first year of the pandemic. And we find similar if not slightly stronger results if we focus on employment as the outcome rather than participation. This implies that the same characteristics that predict leaving the labor force also appear to predict being unemployed, since this specification lumps being out of the labor force with being unemployed.\textsuperscript{25}

Another interesting extension is to see if similar patterns apply to women who were not employed one year previously. So in column nine we include all women and we consequently drop the controls for characteristics of women’s previous jobs. The specification includes both entry and exit effects because women who were not employed could decide to participate.\textsuperscript{26} The estimates are qualitatively similar, but larger in magnitude suggesting that declines in entry operated similarly to increases in exits.\textsuperscript{27}

\textsuperscript{25}One reason this is not our preferred specification is because the misclassification of employed workers who were unable to work during the pandemic as being unemployed on temporary layoff would affect these results, unlike our main specification for labor force exits. The effects of this phenomenon, however, are likely to be somewhat modest because our sample period begins sufficiently late that it excludes the early months of the pandemic when this issue was the most acute.

\textsuperscript{26}Note that some of the women who were not employed were already in the labor force, since they were unemployed.

\textsuperscript{27}Including movements from unemployment to nonparticipation may also strengthen this effect.
Table 3: Robustness of effects of children on labor force exits

| VARIABLES                           | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
|-------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                                     | Excess exits: Baseline | Excess exits | Excess exits | Excess exits | Excess exits | Excess exits | Excess exits | Excess exits | Excess exits |
| Lived with a child aged 0 to 5      | 0.042 | 0.030 | 0.033 | 0.042 | 0.041 | 0.029 | 0.033 | 0.047 | 0.055 |
|                                     | (0.011) | (0.009) | (0.006) | (0.011) | (0.011) | (0.012) | (0.014) | (0.013) | (0.011) |
| Lived with a child aged 6 to 12     | 0.009 | 0.017 | 0.005 | 0.010 | 0.008 | 0.005 | -0.001 | 0.023 | 0.021 |
|                                     | (0.012) | (0.007) | (0.008) | (0.011) | (0.012) | (0.009) | (0.014) | (0.011) | (0.010) |
| Was married                         | 0.008 | 0.003 | 0.009 | 0.007 | 0.007 | 0.008 | 0.014 | 0.014 |
|                                     | (0.006) | (0.006) | (0.006) | (0.006) | (0.004) | (0.006) | (0.006) | (0.006) |
| Previous weekly earnings (normalized)| -0.002 | -0.001 | -0.002 | -0.005 | -0.002 | -0.009 |
|                                     | (0.005) | (0.003) | (0.004) | (0.004) | (0.005) | (0.003) |
| Earnings (normalized) by living with child aged 0 to 5 | -0.010 | -0.009 | -0.009 | -0.008 | -0.009 | 0.001 |
|                                     | (0.009) | (0.009) | (0.009) | (0.007) | (0.009) | (0.011) |
| Earnings (normalized) by living with child aged 6 to 12 | -0.015 | -0.015 | -0.015 | -0.012 | -0.015 | -0.018 |
|                                     | (0.007) | (0.006) | (0.006) | (0.007) | (0.007) | (0.007) |
| Married by living with child aged 0 to 5 | -0.012 | -0.011 | -0.011 | -0.001 | -0.013 | -0.032 | -0.049 |
|                                     | (0.017) | (0.016) | (0.016) | (0.016) | (0.017) | (0.022) | (0.017) |
| Married by living with child aged 6 to 12 | -0.009 | -0.011 | -0.008 | -0.002 | -0.010 | -0.011 | -0.015 |
|                                     | (0.014) | (0.015) | (0.014) | (0.013) | (0.014) | (0.012) | (0.012) |
| Number of children aged 0 to 12     | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 | 0.008 |
|                                     | (0.004) | (0.004) | (0.004) | (0.004) | (0.004) | (0.004) | (0.004) | (0.004) |

Observations: 95,164 103,283 95,210 95,210 95,164 95,164 95,164 95,164 140,636

Direct effects - not shown
Weights
Race and ethnicity
Age and education
Month by year indicators
State indicators separately pre and post
Occupation and industry effects
Employment 12 months ago

Note: The effect of having children under six and of having children between 6 and 12 among women with lower earnings is apparent across specifications. Columns 1 through 7 predict labor force exits among our sample of previously employed women. Sample sizes change across specifications due to missing data. Column 1 is our baseline specification. Column 2 includes only the main effects of having child in the home with no individual level controls, but no interactions with the presence of children. Column 4 adds the interaction terms. Column 5 adds month by year indicators and state indicators. Column 6 is an unweighted version of the base specification, Column 7 includes a control for the number of children under the age of 13 living in the household. Column 8 is a regression predicting non-employment as opposed to labor force exit. Column 9 is a specification including women who were working a year earlier. Each is a variation of the main specification in column three of Table 2 presenting β2 terms in equation 2). Standard errors are clustered for each month. See the notes in Table 2 for more details “Direct effects” refer to the non-interacted terms while “Employment 12 months ago” refers to the inclusion of a control for employment status.
Next, we test different ways of measuring our covariates of interest in our main specification that estimates excess pandemic exits relative to pre-pandemic years.

While being married can signify a greater degree of resource sharing, we also tried focusing on partnered individuals rather than married individuals. In column two of table 4, we show that our results look very similar if instead of marital status we use the presence of a partner living in the household. Additionally, we tried using education level as a proxy for earning potential rather than using earnings directly in column 3. We see these results as qualitatively similar, although the evidence for less-educated workers with school aged children having greater increases in labor force exits is not as strong as for lower-earning women in our baseline specification. While both education and earnings are a function of previous decisions the women have made, educational attainment is a coarser measure. In our main specification, we control for education and focus on previous earnings, which allows for women of the same education level to have different earnings based on unobserved characteristics and different employment choices.

In column four, we use the same specification, with education interaction terms rather than earnings, to predict non-participation where we do not impose the sample restriction that the women had to be employed 12 months prior. As in table 3, we see that the effects are larger in magnitude suggesting that declines in entry may have affected the same groups that saw increases in labor force exits.

Finally, the importance of the effect of children is consistent with the qualitative patterns in the share of women who exited the labor force and responded that they were not participating due to caring for home or family. As shown in appendix figure A.1, both women or color and women living with children had larger increases in the share of exits associated with caregiving during the pandemic.

Overall our estimated effect of children on excess exits of previously employed women during the pandemic are qualitatively robust to alternative measures and specifications. When we expand the sample to include women who were not working one-year prior, the results are similar suggesting that the effect of children on labor force exits may have been similar to their effect on decreasing labor force entry as well.

**Aggregate effects**

In addition to the direct impacts on women and their careers, labor force exits due to childcare interruptions could have contributed to lower levels of aggregate labor force participation during our sample period. While the impacts of caregiving on employment levels is beyond the scope of our examination, we can use our estimates to calculate the share of exits attributable to having children in the household during the Fall of 2020. The calculation assumes that women living with children would otherwise have had the same increases in labor force exits as similar women without
### Table 4: Effects of children on labor force exits

| Variables                                               | (1) Baseline: Excess exits | (2) Excess exits | (3) Excess exits | (4) Excess non-participation |
|---------------------------------------------------------|-----------------------------|------------------|------------------|------------------------------|
| Lived with a child aged 0 to 5                         | 0.042                       | 0.040            | 0.041            | 0.054                        |
|                                                         | (0.011)                     | (0.013)          | (0.010)          | (0.011)                      |
| Lived with a child aged 6 to 12                        | 0.009                       | 0.012            | 0.019            | 0.022                        |
|                                                         | (0.012)                     | (0.012)          | (0.012)          | (0.010)                      |
| Was married                                             | 0.008                       | 0.009            | 0.014            |                              |
|                                                         | (0.006)                     | (0.006)          | (0.008)          |                              |
| Married by living with child aged 0 to 5                | -0.012                      | -0.021           | -0.053           |                              |
|                                                         | (0.017)                     | (0.016)          | (0.019)          |                              |
| Married by living with child aged 6 to 12               | -0.009                      | -0.010           | -0.009           |                              |
|                                                         | (0.014)                     | (0.012)          | (0.012)          |                              |
| Previous weekly wage (normalized)                      | -0.002                      | -0.002           |                  |                              |
|                                                         | (0.005)                     | (0.005)          |                  |                              |
| Wage (normalized) by living with child aged 0 to 5      | -0.010                      | -0.011           |                  |                              |
|                                                         | (0.009)                     | (0.009)          |                  |                              |
| Wage (normalized) by living with child aged 6 to 12     | -0.015                      | -0.015           |                  |                              |
|                                                         | (0.007)                     | (0.007)          |                  |                              |
| Had partner                                            |                             |                  | 0.008            |                              |
|                                                         |                             |                  | (0.006)          |                              |
| Had partner by living with child aged 0 to 5            | -0.005                      |                  |                  |                              |
|                                                         | (0.020)                     |                  |                  |                              |
| Had partner by living with child aged 6 to 12           | -0.013                      |                  |                  | -0.010                       |
|                                                         | (0.013)                     |                  |                  | (0.005)                      |
| Bachelor's degree or more                              |                             |                  | -0.010           | -0.011                       |
|                                                         |                             |                  | (0.005)          | (0.005)                      |
| Bachelor's or more by living with child aged 0 to 5     |                             |                  | 0.005            | 0.006                        |
|                                                         |                             |                  | (0.012)          | (0.009)                      |
| Bachelor's or more by living with child aged 6 to 12    |                             |                  | -0.010           | -0.014                       |
|                                                         |                             |                  | (0.006)          | (0.005)                      |

| Observations                                           | 95,164                      | 95,164          | 103,234          | 140,636                      |
| Weights                                                | X                            | X               | X                | X                            |
| Race and ethnicity                                     | X                            | X               | X                | X                            |
| Direct effects - not shown                             | X                            | X               | X                | X                            |
| Month by year indictors                                | X                            | X               | X                | X                            |
| State indicators separately pre and post               | X                            | X               | X                | X                            |
| Occupation and industry effects                        | X                            | X               | X                | X                            |
| Age cubic term                                         | X                            | X               | X                | X                            |
| Education controls                                     | X                            | X               |                  | X                            |
| Employed 12 months prior                               | X                            |                  |                  | X                            |
| Includes previously non-employed                      |                              |                  |                  | X                            |

Note: The effects of having children under six and of having children 6 to 12 among women with lower earnings are similar when separating out by having a partner (including unmarried partners and those of any gender) and of having a Bachelor’s degree or more as opposed to having low earnings. Results are also similar in looking at non-participation, including women who were not employed a year earlier. Presented are estimated effects of each variable on excess labor market exits during the pandemic ($\beta_2$ in equation 2) alongside standard errors clustered by each month. Other aspects follow Table 2.
children under 13 in the household. This estimate requires that there are no general equilibrium or “crowding” effects of women with children on women without, and we need to assume that the differences we estimate are due to childcare disruptions and virus concerns relating to children and not unobserved differences between women with kids and those without. Despite the strong assumptions, the exercise still provides a useful means of understanding the size of our estimated effects.

Based on our regression estimates, the increase in labor force exits among prime-working-age women would be 0.8 percentage points smaller if women living with children experienced the same increases in exits as those without children under 13 in the home. A 0.8 percentage points smaller increase would roughly halve the 1.6 percentage point increase in excess exits comparing our pandemic sample period of September 2020 to February 2021 to our comparison period of February 2015 to 2020. While our estimates do not suggest that all of the increase in exits among women during the pandemic was related to childcare, they do suggest that childcare played a major role.

**Decomposing Differences by Race and Ethnicity**

In this section, we use decompositions to quantify the effects of pandemic induced changes on disparities in labor force exit rates for Latinas and Black women relative to White women. Our covariates of interest include not only factors relating to children but also the well documented, differing effect of the pandemic by occupation and education.

Decompositions show that while much of the larger increases in labor force exits among Latinas and Black women are unexplained by covariates, the presence of children interacted with earnings and marital status differences play the largest role of any observable variables in the heightened differences during the pandemic. Ultimately, covariates only explain about half of the gap between Latinas and White women and between 15 to 30 percent of the gap between Black and White women when we look at them either before or during the pandemic. Additionally, both before and during the pandemic, differences in education, earnings, and job characteristics are the most important observed characteristics for explaining the higher rates of labor force exits among Latinas and Black women. But because of the larger differences in estimated effects during the pandemic, the presence of children interacted with marital status and earnings are the biggest contributors to the larger pandemic-era increases in labor force exits of Latinas and Black women relative to White women.

As shown in figures 3 and 4, a sizeable share of the racial gaps in labor force exits remain unexplained both before and especially during the pandemic, suggesting that other unobserved differences and/or discrimination may have played a role. Before the pandemic, covariates explained
nearly three-quarters of the gap between Latinas and White women’s exit patterns. This share fell to a little over half of Latinas’ six percentage point gap in labor force exits during the pandemic. For Black women, covariates explain around one percentage point, or one quarter, of their four percentage point higher likelihood of exit compared to White women during the pandemic and around half of the pre-pandemic racial gap in labor force exits.

Education, industries, occupations, and earnings describe the largest proportion of the cross sectional differences in exits among women of color relative to White women both during and before the pandemic. Together they account for 80 percent of the explained differences for Latinas and around 100 percent of explained differences for Black women. As we show in appendix table A.2, Latinas and Black women were more likely to be employed in occupations and industries that were adversely effected by COVID-19. Additionally Latinas and Black women had less education on average and lower earnings relative to White women.

Looking at the differences in contributions during the pandemic relative to the years before, the biggest changes relate to the interaction terms between marital status, earnings, and the presence of children shown under “Interactions with children”. Importantly, the effect of these characteristics during the pandemic was to increase exits for women of color relative to White women. Prior to the pandemic they were actually associated with lower levels of exit for Black women and were neutral for Latinas. Black women in our sample were less likely to be married than White women, and prior to the pandemic, married women with children were more likely to exit the labor force. Additionally, women who earned less and lived with children had increases in their excess exits, and Latinas and Black women earned less on average relative to White women. Finally children were associated with larger increases in exits during the pandemic and Latinas and Black women are over-represented among women with children relative to their shares in the overall population. Latinas make up 19 percent of women with children under 6 and 21 percent of women with children 6 to 12 despite making up only 17 percent of the overall population of women. Black women make up 14 percent of both categories of women with children compared with 13 percent of the population.

The presence of children and their interaction with earnings and marital status stand out as the largest contributors to the explained portion of the increase in exits during the pandemic relative to pre-pandemic levels for women of color relative to White women. These results suggest that the childcare disruptions during the pandemic were either larger for women of color or they were less able to navigate them while remaining employed.

The decompositions suggest that the higher rates of exit of women living with young children and with relatively low earnings heightened differences in exit rates for Latina and Black women relative to White women. Our analysis also suggests that differences in education and occupational sorting as well as unobserved factors, like discrimination or unobserved labor supply factors, play
Figure 3: Decomposing the Latina-White Exit Gap

Note: Observed covariates explained a smaller share of the of the higher rate of labor force exits among Latinas relative to White women during the pandemic relative to before. Additionally, the presence of children and interactions of earnings and marital status with the presence of children were more explanatory during the pandemic, leading to essentially all of the increases during the pandemic that are predicted by variables. Initial earnings, education, industry, and occupation however are the most explanatory in both periods. Shown is the proportion of differences in exits by Latinas relative to White women that are not explained by variables and explained by the specified categories of variables according to the decomposition. Shades represent the pre-pandemic decomposition, the pandemic period decomposition, and the differences (in levels) between pre-pandemic and pandemic period decompositions.
Note: Observed covariates explained a smaller share of the of the higher rate of labor force exits among Black women relative to White women during the pandemic relative to before. Additionally, the presence of children and interactions of earnings and marital status with the presence of children were more explanatory during the pandemic, leading to essentially all of the increases during the pandemic that are predicted by variables. Initial earnings, education, industry, and occupation however are very explanatory in both periods. Shown is the proportion of differences in exits by Black women relative to White women that are not explained by variables and explained by the specified categories of variables according to the decomposition. Shades represent the pre-pandemic decomposition, the pandemic period decomposition, and the differences (in levels) between pre-pandemic and pandemic period decompositions.
meaningful roles in Latinas and Black women’s higher rates of labor force exits both before and during the pandemic.

IV Conclusion

This paper investigates patterns in the overall decline in women’s labor force participation during the COVID-19 pandemic focusing on labor force exits. We highlight larger increases in labor force exits among women living with children and women of color. We find that women living with children under age 6, particularly single women, were more likely to exit the labor force during the pandemic than in previous years. Women living with school-aged children working at low-earning jobs were also more likely to exit than before the pandemic. Finally, increases in exits among women with small children contributed to the larger increases in labor force exits among Latina and Black women during the pandemic.

Disaggregating women’s labor force participation helps to show how public health concerns, government-mandated shutdowns, transfer payments, and widespread societal changes during the COVID-19 pandemic has shaped women’s careers and lives. For example, patterns by race, ethnicity, education, and pre-pandemic income are all continuations of labor market trends earlier in the pandemic (Cortes and Forsythe, Forthcoming; Couch, Fairlie and Xu, 2020). Our finding that that increases in labor force exits were larger for women with children suggests that the they were driven by something besides the direct effects of government support programs provided to all women, like expanded unemployment insurance and stimulus payments. But it is also possible that the effects of children would be smaller in an environment with fewer financial supports for women outside of the labor force.

Our results highlight the importance of childcare for women’s labor force participation, and particularly for lower-earning women and women of color. The wide ranging disruptions to formal and informal childcare caused by the COVID-19 pandemic went beyond the cost shocks to formal childcare explored in previous work (Morrissey, 2017). So the coincident increase in labor force exits among women living with children provides additional evidence that both formal and informal childcare plays an important role in supporting women’s labor force participation, building on studies like (Compton and Pollak, 2014) that use geographic variation in access to informal childcare. The characteristics of the women who experienced excess exits during the pandemic also mirror previous examinations of the disproportionate effects of childcare costs on labor force participation, with larger effects for single women, women with children under age 6, and women earning less before the pandemic (Morrissey, 2017).

Our results are also important for policymakers trying to develop measures to increase labor force participation and address the disparities outlined in our paper. A back of the envelope cal-
calculation suggests that around half of the increase in prime-working-age women’s labor force exits during the pandemic was due to larger increases in exits attributable to living with children. So pandemic-era experience suggests that improvements to childcare institutions, workplace flexibility, or both will likely increase women’s labor force participation in the future.

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