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## Article

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# The impact of COVID-19 on the gender division of housework and childcare: Evidence from two waves of the pandemic in Italy

## Abstract

The COVID-19 pandemic has had a dramatic impact on families' lives because of the increased demands of housework and childcare. Much of the additional burden has been shouldered by women. Yet, the rise in remote working also has the potential to increase paternal involvement in family life and thus to reduce gender role inequalities. This effect depends on the working arrangements of each partner, whether working remotely, at their usual workplace, or ceasing work altogether. Using two waves of an ad-hoc survey conducted in April and November 2020, we show that the time spent by women in domestic activities did not depend on their partners' working arrangements. Conversely, men spent fewer hours helping with housework and home schooling when their partners were at home. Although men who worked remotely or did not work at all devoted more time to household activities during the second wave of COVID-19, the increased time they spent at home did not seem to lead to a reallocation of couples' time.

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## 1 Introduction

The COVID-19 crisis has affected the lives of millions of people around the world, with devastating consequences on economic, health, and educational outcomes. Lockdowns have forced people to adapt to new working arrangements; an increasing trend of emptying offices was observed as employees started working from home. School closures mean more time must be spent on housework, childcare, and helping students with distance learning. But how is this increased burden of work shared between men and women? Did the pandemic have any effect on the pre-COVID division of labor within the household? What role does remote work play in the reallocation of labor within the household?

Before COVID-19, on average, women in OECD countries spent 2 hours per day more than men on unpaid work at home.<sup>1</sup> If women continue to do the lion's share of work at home, then it is likely that they will take on the extra burden of work resulting from the pandemic. This aggravation in the uneven division of labor between men and women risks widening gender gaps in the economy. However, the new working arrangements and a massive shift to remote work by both men and women could provide an opportunity for a greater involvement of men in family life, thus rebalancing traditional family arrangements. The division of labor within the family would become more balanced and gender gaps would decrease.

A new equilibrium will emerge, depending on which of these two possible scenarios prevail. We expect the first to characterize the short-run impact of COVID-19, especially in countries with conservative gender norms and a substantial asymmetry between men and women in the household. The second scenario needs more time to materialize and is strongly linked to the working arrangements of men and women within the couple. If more men work from home, their involvement in housework and childcare could likely increase.

Prior to COVID-19, the household division of labor in Italy was already highly unbalanced (Del Boca et al., 2020). Our research shows how the situation has changed since the pandemic. Italy was the first European country to report people infected by the new Coronavirus, and one of the countries with the highest number of cases. Italy went through two main periods of restrictions starting in March 2020 and October 2020. Thus, it represents the ideal context for studying whether the division of labor within the household changed at the outbreak of the pandemic and if it has evolved over time.

We use a unique source of data to run our research. A sample representative of Italian working women was surveyed during the two periods of restriction, with the first interviews conducted in April 2020 and the second in November 2020. The subjects were asked about their own working arrangements and those of their partners, especially about whether they were working from home at the time of the survey, at their usual workplace, or currently not working. They were also asked to provide information about how much time they and their partner spent on housework, childcare, and helping their children with distance learning.

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1 In OECD countries, women spend on average 263.4 minutes per day in unpaid work and men 136.5 minutes. The difference amounts to 126.9 minutes, i.e., slightly more than 2 hours. In Italy, the gender gap is even higher, with women spending 306.3 minutes per day in unpaid activities such as routine housework, shopping, and care for household members, and men 130.7 minutes. Data come from OECD statistics, based on national time-use surveys (<https://stats.oecd.org/index.aspx?queryid=54757>).

The timing of the two surveys allowed us to identify any short- and longer-run changes to working arrangements and the household division of labor as a result of the pandemic. We compared how the working arrangements of women and their partners were shaped by the pandemic during the first and second waves, and looked at how the working arrangements during the two waves affected the number of hours each partner spent on housework and childcare. We wanted to see whether the time spent on family-related responsibilities correlated to the time spent at home due to the emergency restrictions. We found that the gender gap in household care related activities increased during the first wave of COVID-19 pandemic. Although the gap was less pronounced during the second wave, the distribution of time spent on housework and childcare within the couple remained highly unbalanced against women, even after accounting for the two partners' working arrangements. Time spent on housework, childcare, and supporting distance learning by women does not depend on their partners' working arrangements. Conversely, men spent fewer hours helping with housework and home schooling when their partners were at home. However, even if men were working remotely from home or not at all and thus spent more hours on family work during the second wave of COVID-19, the increased time they spent at home did not seem to lead to a full reallocation of couples' roles in housework and children care.

While past economic crises had a greater negative effect on men's than on women's employment, COVID-19 has hit women equally or even harder than men, as many of the jobs lost have been in service sectors with large female workforces, such as retail, restaurants, and hospitality (ILO, 2020; Hupkau and Petrongolo, 2020; Alon et al., 2020).<sup>2</sup> The unbalanced division of labor within the household risks amplifying the negative consequences of COVID-19 on gender gaps. Many working mothers are struggling to make things work, since somebody has to stay home and mind the children (Queisser et al., 2020). A growing body of research is thus focusing on the impact that COVID-19 has had on the division of labor within the household in specific countries. Evidence from Spain (Farré et al., 2020) and the UK (Sevilla and Smith, 2020) show that there was an initial shift toward a more equal distribution of household and childcare between men and women in the first months of the pandemic, although most of the extra work caused by the crisis has fallen on women. Zamberlan et al. (2021) show for the UK that both partners who lost paid hours increased their total time devoted to domestic chores; however, gender inequality did not decrease. For other important references on the different impacts of the pandemic on several outcomes in different countries, see Bluedorn et al. (2021), Hanushek and Woessmann (2020), and Wang (2021).

A comparative analysis of a novel data set including Italy, the UK, and the US confirms these results (Biroli et al., 2020). D'Ambrosio et al. (2020) collected and analyzed a new data set of 1,700 partners cohabiting during 2020<sup>3</sup> and compared the impact of COVID-19 and the severity of measures adopted on the time allocation and well-being of couples in several European countries including Italy, Spain, France, Belgium, Germany, Luxembourg, and Sweden.

2 Albanesi and Kim (2021) analyzed US data before and during the pandemic and concluded that the adverse impact of the pandemic on employment, unemployment, and non-participation rates has mostly affected women, particularly mothers. In their analysis of the US case, Béland et al. (2020) and Gupta et al. (2020) show that significant short-term employment effects characterized states that implemented tighter stay-at-home orders. The length of school closures also negatively affects labor supply, especially that of mothers (Amuedo-Dorantes et al., 2020).

3 <https://humanities.uni.lu/virtual-faculty/how-do-different-confinement-measures-affect-people-across-europe>

They found that Italy's longer school closures led to a greater increase in women's childcare time than in Spain or Germany, where the measures adopted do not appear to have exacerbated the gender gap within the family.<sup>4</sup>

In a previous paper, we have showed the differences between working arrangements and domestic activities in Italy before and during COVID-19 (Del Boca et al., 2020). In particular, we showed that most of the additional housework and childcare associated with COVID-19 in March 2020 fell on women, even though childcare activities were more equally shared within the couple than housework activities. However, first wave data alone do not allow us to identify the two possible sides of the relationship between COVID-19 and the division of labor within the household, since more time is needed to see if there is a change in family arrangements. A few months after the lockdown, the number of cases increased again and the virus spread even more widely than it did during the first wave (March–May 2020). The second wave was characterized in a very different way than the first one, since the contagion rates were much higher and the measures adopted much weaker. We then collected new data at the end of November 2020, and in this paper, we explore the different associations between working arrangements and the allocation of domestic activities in the two waves. Indeed, the timing of the two surveys allows us to identify any short- and longer-run changes to the household division of labor as a result of the pandemic. Analyzing the two waves of the pandemic, this paper is the first to explore how and to what extent family roles changed between the first and second waves of COVID-19 in Italy and thus to assess whether a new equilibrium in the intra-family division of work and family work has emerged.

The paper is organized as follows: Section 2 explains the conceptual framework, Section 3 presents our data, Section 4 presents the empirical analysis, and Section 5 concludes.

## 2 The Division of Labor within the Household: Literature

A large body of literature across family economics, demography, and other social sciences has studied the increasing role of women in the economy and society, known as the gender revolution (Goldscheider, 2000; Goldscheider et al., 2015) and the “quiet revolution” (Goldin, 2006). The division of labor within the household plays an important role in the different phases of the revolution. In the first phase, women began to pursue higher levels of education and participated increasingly in the labor market, although they continued to be responsible for housework and childcare within the family. Then, changes in the identity of women in their job and a joint decision-making process within the couple (Goldin, 2006) may imply that men are also more involved in family activities, including housework and childcare. In turn, men's involvement in the family may play a substantial positive role in supporting maternal employment (Fanelli and Profeta, 2021).

While it seems quite intuitive, attention to the role of remote working as a facilitator of equal sharing of family responsibilities within the couple is very recent. Working from home

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<sup>4</sup> Interestingly, the disaggregation of household activities shows that when both partners share more housework as a consequence of COVID-19, there are differences in the tasks performed. Carlson et al. (2020) report that in the US, in housework activities, men contribute more to grocery shopping, and, in childcare activities, men spend more time playing with children, while women are more involved with supervising school-related activities.

may help to rebalance the division of labor within the household (see also Schieman et al., 2009; Mas and Pallais, 2020). Angelici and Profeta (2020) show that flexible work arrangements, which allow some part of the working week to be spent at home, lead to an increase in men's contribution to housework and childcare. Pablonia and Vernon (2021) show that working at home increases men's childcare time but not housework.

The outbreak of COVID-19 has revived attention to both the division of labor within the household and working arrangements. Recent evidence has concentrated on how the increased amount of housework, childcare, and support for distance learning caused by the pandemic was shared between men and women (see, among others, Del Boca et al., 2020; Farrè et al., 2020). In parallel, several studies have documented the spread of remote working arrangements (see for example Dey et al., 2021; Adams-Prassl et al., 2020).

Time spent at home together, due to changes in working arrangements, might play a fundamental role in the division of family tasks. On the one side, in couples where both partners work, the new working arrangement could lead to a better sharing of housework and childcare activities within the couple. On the other side, in contexts dominated by persistent stereotypes and traditional gender norms, women are likely to continue to be the main individual responsible for childcare and domestic activities. We analyze our data to understand which relationship dominates. Our empirical analysis shows that men spend less time on housework and home schooling (but the same time in childcare) when their wives are at home, no matter whether the wives work for pay or not. The time spent by women in domestic activities instead does not depend on their partners' working arrangements. Women work more even when men work from home or do not work at all.

How do we reconcile this result with the large theoretical literature on household behavior (see Chiappori and Meghir, 2021 for a collection of contributions in this area)? In a cooperative solution in which those with higher earnings were given more of the household surplus, we would not expect to have observed such a result. Whether households behave cooperatively or noncooperatively, as shown in Del Boca and Flinn (2012), household production decisions should always be efficient. Thus, women may work more in the household independently of the employment circumstances of the husband and wife because women are more productive in housework than are men (estimates supporting this interpretation can be found in Del Boca and Flinn, 2012; Flinn et al., 2018). In a cooperative setting of the type considered by Chiappori (1997), in which household decisions are taken to be determined through the maximization of a weighted sum of the houses' individual utilities, the results we find are consistent with husbands having a larger welfare weight than their wives, and where the welfare weights are not functions of the relative earnings contributions of the spouses.

Several studies have emphasized that working from home has also important consequences on subjective well-being (Chung, 2011; Moen et al., 2016; Angelici and Profeta, 2020). In times of uncertain economic conditions due to the pandemic, individuals' well-being is expected to be negatively affected. This is particularly relevant for women, who on average have more unstable economic conditions and are shown to be particularly affected by the "she-cession" (Alon et al., 2020). There is no consensus on how working from home affects workers' well-being in the literature and effects are heterogeneous. Flexibility may reduce the stress, but working from home may also create more work-family conflicts, in particular for parents who work at home during weekdays (Song and Gao, 2020).

### 3 Data and Descriptive Statistics

#### 3.1 The Italian context

Our analysis focuses on Italy, which is characterized by a large gender gap in both paid and unpaid work. The situation has been exacerbated by the pandemic. During the first three trimesters of 2020, female occupation rate declined to 48.9% (against an average of 62% in the rest of the European Union). The difference between male and female occupation rates went from 17.8 percentage points in 2019 to 18.3 percentage points in 2020 (ISTAT, 2020). Moreover, the number of inactive women increased by 1.9 percentage points with respect to 2019.

The pandemic in Italy was characterized by two waves in 2020. The first school closures started on February 25, 2020, and the central government and regions adopted measures to reduce the spread of the virus with a full lockdown between March 9 and May 3. This lockdown was the strictest in Europe and the school closures lasted longer than in other countries.<sup>5</sup> While COVID-19 cases were very low in the summer, in October 2020, the number of cases once again increased, and the virus spread more widely across regions. The lack of restrictive measures increased contagion rates, and in mid-November 2020, six times as many cases were reported as during the first wave. The new measures adopted in October to limit the impact on the growing epidemic were not as strict as those implemented earlier.

#### 3.2 Data and descriptive evidence

In our analysis, we use data collected in two waves of a large survey conducted on a representative sample of 699 Italian women who were working before the COVID-19 outbreak. The surveys were administered by Episteme, a professional survey company, using computer-assisted web interviewing (CAWI). The two waves of the survey were conducted in April 2020 (during the strict lockdown) and November 2020 (during the second wave of COVID-19).<sup>6</sup>

The sample was drawn from a panel of respondents built by the professional survey company. Respondents' recruitment takes place only upon company invitation and through a well-balanced mix of differentiated channels (for example: display and affiliate marketing, email marketing, mobile marketing, social media marketing, etc.). Reliability of the respondents is periodically checked by the company to avoid the presence of duplicates, unreliable respondents, or individuals only interested in incentives. Incentives are collected through a system of points and includes vouchers (Amazon, BestChoice), money transfers (PayPal), or donations to charitable organizations (WWF, Amnesty International). Respondents for this study were selected by the survey company uniquely based on their demographic characteristics in order to reproduce the national distribution of working women by geographical areas.

We designed the questionnaire to gather information on changes in the respondents' employment status, hours of housework, childcare, and time spent on children's distance

<sup>5</sup> From March to May 2020, the school closures lasted 103 days versus an average of about 50–55 days in other European countries.

<sup>6</sup> A previous survey was conducted in April 2019 on a nationally representative sample of 1,249 working women (aged 25–64 years) with the objective of understanding the pension gender gap. In April 2020 and November 2020, we repeated the interviews, adding specific questions related to the emergency. Most of the 1,249 women were then surveyed again in April 2020 and November 2020.

learning in a typical day during the strict lockdown and the second wave of COVID-19. Women were also asked similar questions about their partners. Since we do not ask questions directly to partners, we acknowledge that there could be a bias in their reported hours. Due to the level of detail of the questions asked, we were able to identify whether the women and their partners were allowed to continue working at their jobs, from home, or were not working during the two waves of COVID-19.

Table 1 reports the descriptive statistics of the samples used in our regression analysis, i.e., women cohabiting with a partner (Panel A) and women with children cohabiting with a partner (Panel B) during the first and second waves of COVID-19. The average age in our samples is around 45 years, and the percentage of respondents with a university degree varies from

**Table 1** Descriptive statistics

	First wave of COVID-19				Second wave of COVID-19			
	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
<b>Panel (A) Women cohabiting with a partner during the first and second waves of COVID-19<sup>a</sup></b>								
Age	44.79	9.12	26	64	45.04	9.22	26	65
Have a degree	0.48	0.50	0	1	0.44	0.50	0	1
North	0.57	0.50	0	1	0.56	0.50	0	1
Centre	0.19	0.39	0	1	0.19	0.39	0	1
South	0.24	0.43	0	1	0.25	0.43	0	1
Have children	0.67	0.47	0	1	0.66	0.47	0	1
Have children aged 0–5 years	0.20	0.40	0	1	0.20	0.40	0	1
Have children aged 6–10 years	0.21	0.41	0	1	0.21	0.41	0	1
Women's hours of paid work	22.89	15.75	0	50	25.21	15.50	0	50
Working at the usual workplace	0.21	0.41	0	1	0.59	0.49	0	1
Working from home	0.45	0.50	0	1	0.25	0.43	0	1
Not working or other	0.34	0.47	0	1	0.16	0.37	0	1
<b>Panel (B) Women with children cohabiting with a partner during the first and second waves of COVID-19<sup>b</sup></b>								
Age	45.60	8.57	26	64	45.50	8.63	26	64
Have a degree	0.49	0.50	0	1	0.46	0.50	0	1
North	0.55	0.50	0	1	0.54	0.50	0	1
Centre	0.18	0.38	0	1	0.19	0.39	0	1
South	0.27	0.44	0	1	0.27	0.45	0	1
Have children aged 0–5 years	0.30	0.46	0	1	0.30	0.46	0	1
Have children aged 6–10 years	0.31	0.46	0	1	0.33	0.47	0	1
Women's hours of paid work	22.53	15.29	0	50	24.61	15.05	0	50
Working at the usual workplace	0.22	0.42	0	1	0.60	0.49	0	1
Working from home	0.44	0.50	0	1	0.24	0.43	0	1
Not working or other	0.34	0.47	0	1	0.16	0.37	0	1

Notes:

<sup>a</sup>The sample is made up of 405 observations in the first wave of COVID-19 and 504 observations in the second wave of COVID-19.

<sup>b</sup>The sample is made up of 273 observations in the first wave of COVID-19 and 332 observations in the second wave of COVID-19.



44% to 49%. More than half of the women live in the northern regions. To assess the representativeness of our sample, we looked at the characteristics of the population of working women in Italy in 2020, as provided by the Italian National Institute of Statistics (ISTAT). With regard to the geographical areas, our sample shows the same distribution as the national population (ISTAT reports that 54% of working women live in the northern regions of Italy, similar to the percentage in our samples). As ISTAT reports that around one-third of working women have a degree, we acknowledge that our sample is biased toward more educated women, who have access to an online survey.

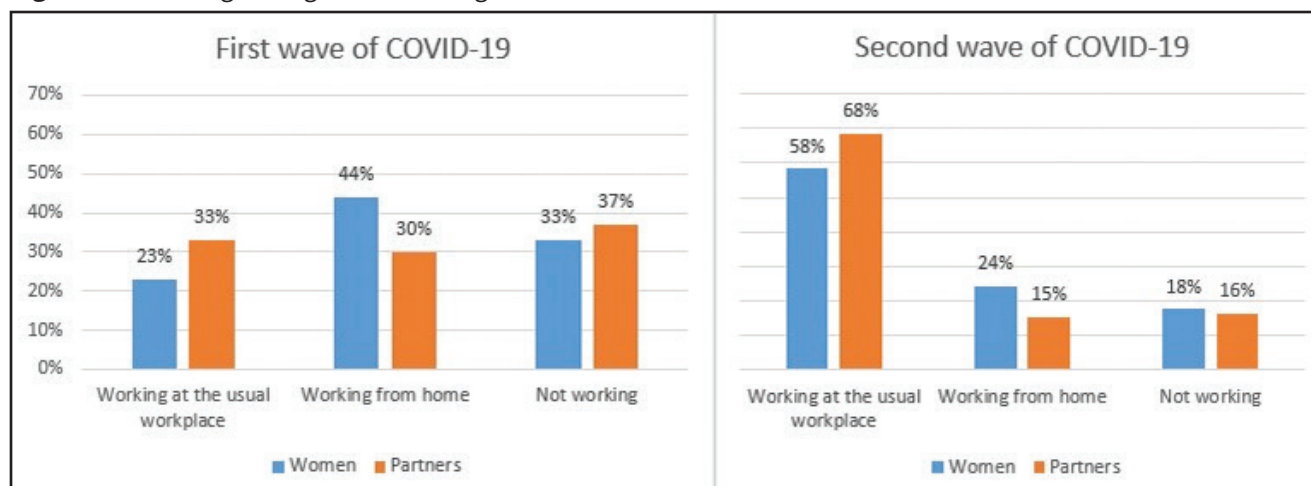
Since the question on the number of hours spent in family work during the lockdown and before the pandemic were asked retrospectively in the second wave, when looking at the short-term effects of the pandemic, we consider only the women who were interviewed in both waves. This reduces the numerosity of the sample used to study the short-run.

In this section, we first present evidence on working arrangements during the two waves of COVID-19. We then move to the division of labor within the couple, taking into account housework, childcare, and support of distance learning. Finally, we look at the link between working arrangements and the division of labor within the household.

Figure 1 shows the working arrangements of women and their partners during the first and second waves of COVID-19. While in April 2020, only 23% of women who were working before the COVID-19 emergency are working at their usual workplace, they become the majority (58%) in November 2020. In fact, as a consequence of less restrictive measures implemented during the second wave, many more individuals have returned to their usual place of work in November 2020.

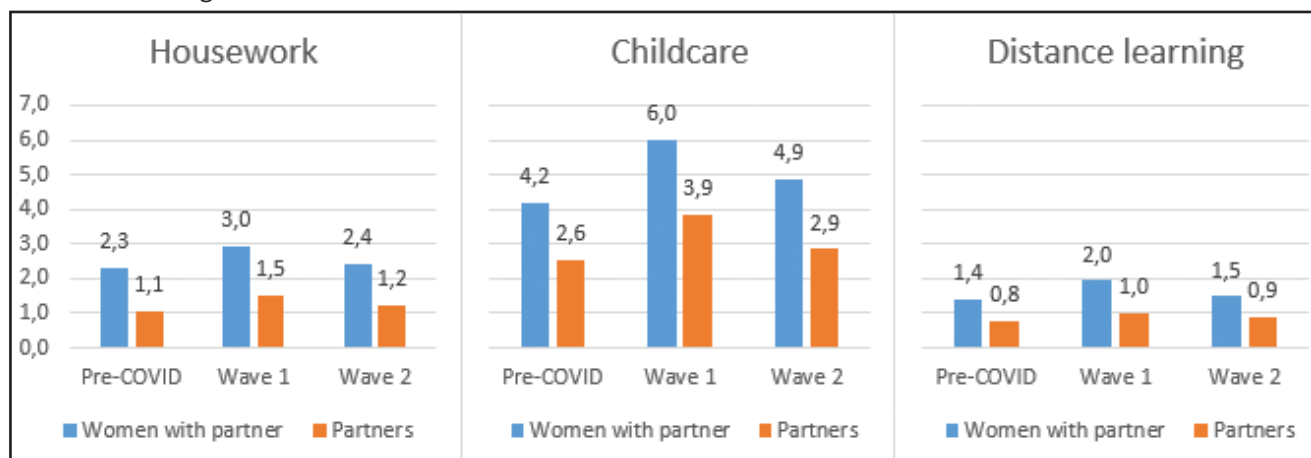
On the other hand, the share of individuals either working from home or not working 9 months after the outbreak of COVID-19 is much lower than during the very first months of the pandemic. In terms of gender differences, while the proportion of individuals not working was higher among men in the first wave (37% of men versus 33% of women), this is not the case in the second wave (16% of men versus 18% of women). More men than women worked from their usual workplace in November 2020 (68% of men versus 58% of women), while more women worked from home (24% of women versus 15% of men).

**Figure 1** Working arrangements during the first and second waves of COVID-19.



Notes: Percentage of working women and their partners by working arrangement in April and November 2020.

**Figure 2** Hours of housework, childcare, and devoted to children's distance learning before the emergency, during the first and second waves of COVID-19.



*Notes:* The sample in the first panel is made up of women cohabiting with a partner. The sample in the second and third panels is made up of women with children cohabiting with a partner.

We now move on to examine the division of labor within the household. The first panel of Figure 2 shows the distribution of the daily hours of housework<sup>7</sup> spent by coupled women and their partners before the emergency, during the first and the second waves of COVID-19. Even though both women and their partners dedicated less time to housework during the second wave than the first, women always spent more time than men on household chores (Figure 2).<sup>8</sup>

A similar trend emerges for childcare<sup>9</sup> when comparing the number of hours spent before the emergency, and during the first and second waves of COVID-19. The second and third panels of Figure 2 show the daily hours spent on childcare, and home schooling in particular, by working women and their partners. Our data show that both women and men spent less time taking care of their children during the second wave than during the first. Women typically spend many more hours per day on childcare; this gap not only increased with the emergency (from 1.6 to 2.2 hours per day), but did not return to the pre-COVID level (the average difference between mothers and fathers in the time devoted to children is 2 hours as of the second wave).

The third panel of Figure 2 shows the hours spent on children's distance learning by both partners and follows the trend observed for housework. Women and their partners spent less time on the education of their children during the second wave than the first, but women still spend more time than men on home schooling. In fact, as of November 2020, women spend an hour and a half per day on home schooling, while their partners spend less than 1 hour. This confirms previous researchers' findings (Carlson et al., 2020).

To understand the link between working arrangements and the allocation of housework and childcare within the household, Table 2 shows the hours of housework during the first and the second waves of COVID-19 according to all the possible combinations of working arrangements between women and their partners. In doing so, we restrict the sample to women cohabiting with a partner.<sup>10</sup>

<sup>7</sup> The question on housework includes a couple of examples like cleaning and cooking.

<sup>8</sup> The hours of housework are higher when considering couples with children, and the gender gap in such couples is greater too.

<sup>9</sup> The question about childcare asks about the time devoted to children in general, including the time devoted to home schooling.

<sup>10</sup> Note that some combinations apply to a very low number of individuals (e.g., women not working and partner working at home).

**Table 2** Hours of housework and childcare during the first and second waves of COVID-19

	Partners working at the usual workplace	Partners working from home	Partners not working
<b>Panel (A) Men and women's hours of housework during the first wave of COVID-19 by working arrangement<sup>a</sup></b>			
Women working at the usual workplace	Women 3.14 Partners 2.19 Difference 0.95*** N = 42	Women 2.47 Partners 2 Difference 0.47 N = 15	Women 2.30 Partners 1.33 Difference 0.96*** N = 27
Women working from home	Women 2.52 Partners 1.26 Difference 1.26*** N = 50	Women 3.03 Partners 1.57 Difference 1.46*** N = 87	Women 2.96 Partners 1.57 Difference 1.38*** N = 47
Women not working	Women 4.03 Partners 1.46 Difference 2.57*** N = 35	Women 2.38 Partners 1.38 Difference 1 N = 21	Women 3.30 Partners 1.54 Difference 1.75*** N = 81
<b>Panel (B) Men and women's hours of housework during the second wave of COVID-19 by working arrangement<sup>b</sup></b>			
Women working at the usual workplace	Women 2.31 Partners 1.17 Difference 1.14*** N = 241	Women 2.92 Partners 1.40 Difference 1.52*** N = 25	Women 2.35 Partners 1.52 Difference 0.84** N = 31
Women working from home	Women 2.56 Partners 0.75 Difference 1.81*** N = 57	Women 2.82 Partners 1.43 Difference 1.39*** N = 44	Women 1.91 Partners 1.30 Difference 0.61** N = 23
Women not working	Women 2.53 Partners 1.04 Difference 1.49*** N = 47	Women 1 Partners 3.37 Difference -2.37 N = 8	Women 2.68 Partners 1.43 Difference 1.25*** N = 28
<b>Panel (C) Men and women's hours of childcare during the first wave of COVID-19 by working arrangement<sup>c</sup></b>			
Women working at the usual workplace	Women 4.34 Partners 3.91 Difference 0.44 N = 32	Women 2.5 Partners 2.25 Difference 0.25 N = 8	Women 3.38 Partners 2.67 Difference 0.71* N = 21
Women working from home	Women 2.87 Partners 1.72 Difference 1.16** N = 32	Women 5.91 Partners 4.40 Difference 1.51* N = 57	Women 6.87 Partners 5.27 Difference 1.6*** N = 30
Women not working	Women 8.23 Partners 3.46 Difference 4.77*** N = 26	Women 10.92 Partners 7.15 Difference 3.77** N = 13	Women 6.65 Partners 4.74 Difference 1.91*** N = 54
<b>Panel (D) Men and women's hours of childcare during the second wave of COVID-19 by working arrangement<sup>d</sup></b>			
Women working at the usual workplace	Women 3.59 Partners 2.18 Difference 1.41*** N = 162	Women 4.56 Partners 3.44 Difference 1.12** N = 16	Women 3.3 Partners 3.4 Difference -0.1 N = 20
Women working from home	Women 5.85 Partners 2.92 Difference 2.92*** N = 39	Women 5.86 Partners 4.03 Difference 1.83*** N = 29	Women 5 Partners 4.46 Difference 0.54 N = 13

(Continued)

**Table 2** Continued

	<b>Partners working at the usual workplace</b>	<b>Partners working from home</b>	<b>Partners not working</b>
Women not working	Women 8.90 Partners 2.86 Difference 6.03*** N = 29	Women 13.2 Partners 6.4 Difference 6.8 N = 5	Women 5.58 Partners 3.63 Difference 0.98* N = 19

**Notes:**

<sup>a</sup>The sample is made up of women cohabiting with a partner ( $N = 405$ ).

<sup>b</sup>The sample is made up of women cohabiting with a partner ( $N = 504$ ).

<sup>c</sup>The sample is made up of women with children cohabiting with a partner ( $N = 273$ ).

<sup>d</sup>The sample is made up of women with children cohabiting with a partner ( $N = 332$ ).

\*\*\* $p < 0.01$ .

\*\* $p < 0.05$ .

\* $p < 0.1$ .

Panels A and B of Table 2 show that the distribution of housework within the couple is highly unbalanced against women. In almost all possible combinations of working arrangements, women spend significantly more hours doing unpaid work at home than their partners. The greatest difference experienced during the first wave (2.57 hours) was for women who were not working because of the emergency but whose partners were working at their usual workplace. Yet, when men were the ones not working while women continued working at their workplace, the gender difference was still positive and significant. The greatest difference in the time devoted to housework during the second wave (1.81 hours) was observed when men kept working at the usual place and women worked from home. However, in the opposite situation, women still spent more time on housework than men (2.92 versus 1.40 hours per day). During both waves, the burden of housework was carried by women in symmetric situations too, i.e., when both partners had the same working arrangements.

Panels C and D of Table 2 focus on women with children and report similar gender gaps in childcare. In most of the combinations of the working arrangements of women and their partners, women spent significantly more time taking care of their children during both waves of the pandemic. Panel C of Table 2 shows that women who did not work at their usual workplace during the first lockdown spent significantly more time on childcare than their partners. During the second wave (Panel D of Table 2), the largest differences in the time devoted to childcare are reported when men kept working at the usual place while women worked from home or did not work. In contrast, men never spent significantly more time on childcare than their spouses. In symmetric situations, women are penalized as well. In fact, when both partners worked at their usual workplace, women spent on average an additional 1.41 hours on childcare and that difference went up to 1.83 hours when both partners were working from home.

## 4 Empirical Analysis

The descriptive evidence of Table 2 suggests a link between working arrangement and the allocation of housework and childcare within the couple. To better explore this link, we now estimate a set of multivariate regressions using ordinary least squares. In Tables 3–5, we show for both working women and their partners, the association between working arrangements,

**Table 3** Multivariate regression model of hours spent on housework by women and their partners during the first and second waves of COVID-19

	(1)	(2)	(3)	(4)
	Hours spent on housework by women during the lockdown	Hours spent on housework by partners during the lockdown	Hours spent on housework by women during the second wave of COVID-19	Hours spent on housework by partners during the second wave of COVID-19
Women's age	0.001 (0.011)	-0.032*** (0.012)	0.009 (0.009)	-0.026*** (0.009)
Women having a degree	0.085 (0.189)	0.144 (0.196)	-0.129 (0.155)	-0.041 (0.157)
Women having children	0.428* (0.233)	0.000 (0.242)	0.404** (0.185)	0.254 (0.188)
Having children aged 0–5 years	0.178 (0.268)	0.167 (0.278)	-0.138 (0.218)	-0.142 (0.221)
Having children aged 6–10 years	0.041 (0.245)	0.188 (0.255)	0.160 (0.200)	-0.074 (0.203)
Centre	-0.047 (0.235)	-0.010 (0.244)	-0.043 (0.196)	0.162 (0.198)
South	1.135*** (0.221)	0.045 (0.229)	0.875*** (0.178)	0.304* (0.181)
Women's hours of paid work	0.002 (0.007)	-0.004 (0.007)	-0.014** (0.007)	0.005 (0.007)
Women working from home	0.045 (0.247)	-0.418 (0.256)	0.040 (0.190)	-0.350* (0.193)
Women not working	0.583** (0.280)	-0.507* (0.291)	-0.297 (0.300)	0.168 (0.304)
Partner working from home	-0.297 (0.238)	-0.043 (0.247)	0.285 (0.221)	0.707*** (0.224)
Partner not working	-0.198 (0.221)	-0.048 (0.229)	-0.202 (0.212)	0.469** (0.215)
Constant	2.209*** (0.614)	3.351*** (0.637)	1.976*** (0.490)	1.917*** (0.497)
Observations	405	405	504	504
R-squared	0.115	0.047	0.092	0.047

Notes: Coefficient estimates from OLS regressions. The sample is made up of women cohabiting with a partner. The baseline category for working arrangements is “working at the usual workplace.” During the lockdown, the average hours spent on housework by women are 3.01 and the average hours spent on housework by men are 1.57. During the second wave of COVID-19, the average hours spent on housework by women are 2.42 and the average hours spent on housework by men are 1.22. Standard errors in parentheses.

\*\*\* $p < 0.01$ .

\*\* $p < 0.05$ .

\* $p < 0.1$ .

**Table 4** Multivariate regression model of hours spent on childcare by women and their partners during the first and second waves of COVID-19

	(1)	(2)	(3)	(4)
	Hours spent on childcare by women during the lockdown	Hours spent on childcare by partners during the lockdown	Hours spent on childcare by women during the second wave of COVID-19	Hours spent on childcare by partners during the second wave of COVID-19
Women's age	-0.033 (0.053)	-0.069 (0.052)	-0.093** (0.040)	-0.083** (0.033)
Women having a degree	0.443 (0.728)	0.037 (0.721)	0.621 (0.549)	0.473 (0.451)
Having children aged 0–5 years	4.041*** (0.933)	2.648*** (0.924)	3.784*** (0.700)	1.611*** (0.575)
Having children aged 6–10 years	2.165*** (0.806)	0.978 (0.799)	-0.114 (0.604)	-0.116 (0.496)
Centre	-1.366 (0.928)	-1.810* (0.919)	-0.155 (0.698)	-0.455 (0.574)
South	1.431* (0.819)	0.583 (0.811)	0.720 (0.622)	0.847* (0.511)
Women's hours of paid work	-0.012 (0.026)	-0.013 (0.025)	-0.019 (0.025)	0.020 (0.020)
Women working from home	0.590 (0.945)	-0.058 (0.936)	1.444** (0.676)	0.482 (0.556)
Women not working	2.635** (1.045)	0.218 (1.036)	3.079*** (1.075)	0.713 (0.884)
Partner working from home	0.802 (0.935)	1.291 (0.927)	0.469 (0.793)	1.192* (0.651)
Partner not working	0.856 (0.830)	1.512* (0.823)	-0.397 (0.761)	1.640*** (0.626)
Constant	3.641 (2.927)	5.548* (2.901)	7.149*** (2.149)	4.660*** (1.766)
Observations	273	273	332	332
R-squared	0.222	0.126	0.285	0.147

Notes: Coefficient estimates from OLS regressions. The sample is made up of women with children cohabiting with a partner. The baseline category for working arrangements is “working at the usual workplace.” During the lockdown, the average hours spent on childcare by women are 5.79 and the average hours spent on childcare by men are 4.04. During the second wave of COVID-19, the average hours spent on childcare by women are 4.86 and the average hours spent on childcare by men are 2.86. Standard errors in parentheses.

\*\*\* $p < 0.01$ .

\*\* $p < 0.05$ .

\* $p < 0.1$ .

**Table 5** Multivariate regression model of hours spent on helping children in distance learning by women and their partners during the first and second waves of COVID-19

	(1)	(2)	(3)	(4)
	Hours spent on distance learning by women during the lockdown	Hours spent on distance learning by partners during the lockdown	Hours spent on distance learning by women during the second wave of COVID-19	Hours spent on distance learning by partners during the second wave of COVID-19
Women's age	-0.003 (0.018)	-0.026 (0.016)	-0.038*** (0.015)	-0.038*** (0.013)
Women having a degree	-0.005 (0.247)	0.042 (0.221)	-0.005 (0.203)	0.143 (0.175)
Having children aged 0–5 years	-0.025 (0.317)	-0.020 (0.284)	-0.027 (0.258)	-0.058 (0.223)
Having children aged 6–10 years	1.719*** (0.274)	0.511** (0.245)	0.705*** (0.223)	0.204 (0.192)
Centre	0.141 (0.315)	0.172 (0.282)	-0.211 (0.258)	-0.138 (0.222)
South	0.497* (0.278)	0.464* (0.249)	0.384* (0.230)	0.111 (0.198)
Women's hours of paid work	0.001 (0.009)	0.001 (0.008)	-0.024*** (0.009)	-0.001 (0.008)
Women working from home	-0.372 (0.321)	-0.609** (0.287)	-0.208 (0.250)	-0.346 (0.215)
Women not working	0.224 (0.355)	-0.632** (0.318)	-0.648 (0.397)	-0.444 (0.342)
Partner working from home	0.510 (0.317)	0.471* (0.284)	0.298 (0.293)	0.387 (0.252)
Partner not working	0.249 (0.282)	0.227 (0.253)	0.284 (0.281)	0.520** (0.242)
Constant	1.184 (0.994)	2.128** (0.890)	3.606*** (0.794)	2.538*** (0.684)
Observations	273	273	332	332
R-squared	0.179	0.083	0.117	0.075

Notes: Coefficient estimates from OLS regressions. The sample is made up of women with children cohabiting with a partner. The baseline category for working arrangements is “working at the usual workplace.” Children's distance learning is included in childcare. During the lockdown, the average hours spent on children's distance learning by women are 1.90 and the average hours spent by men are 1.05. During the second wave of COVID-19, the average hours spent on children's distance learning by women are 1.50 and the average hours spent by men are 0.88. Standard errors in parentheses.

\*\*\* $p < 0.01$ .

\*\* $p < 0.05$ .

\* $p < 0.1$ .

together with individual and family characteristics, and the hours devoted to housework, childcare, and distance learning by women and their partners during the two waves of the pandemic (lockdown and second wave of COVID-19).

The first and third columns of Table 3 show that during both waves of the pandemic, the time spent by women on housework was not related to their home-working arrangement or to the working arrangements of their partners. During the lockdown, women who stopped working spent more hours on housework.<sup>11</sup> Having children and living in the South of Italy increase a woman's probability of doing more unpaid work, since they are the only significant variables explaining the additional time devoted to the household care. The driver of the extra care seems, then, to be more culturally rooted than ruled by working necessity. We also notice that more hours of paid work decreased women's time spent on housework during the second wave of COVID-19. For partners, the working arrangements do matter in terms of the time spent on housework: the last column of Table 3 shows that a few months after the outbreak of COVID-19, men were spending more time on housework if they were working from home or not working. Also, while women's housework is not affected by their partners' working arrangement, men are less likely to spend time on household tasks when their partners are working from home or not working. This happened also during the lockdown in couples with children (Table A1 in the Appendix). Finally, while columns 1 and 3 show that women spend more time on housework when there are children in the household, regardless of their age, this is not true for men.

The results regarding time devoted to childcare, reported in Table 4, are more similar between partners over the longer run, and show a symmetric effect on children's care when one of the partners is absent from home (columns 3 and 4). During both waves, mothers spent more hours with their children if they were not working and, in the second wave, if they were working from home. During the second wave, fathers spent more hours with their children if they were not working or worked from home. During the second wave, working-from-home mothers devoted an additional 1.4 hours to the care of children than mothers not at home and working-from-home fathers devoted an additional 1.2 hours to the care of children than fathers not at home. Also, nonworking mothers spent an additional 3.1 hours on childcare than women who continued working at their workplace, while non-working fathers spent an additional 1.6 hours on childcare compared to men who kept working at their workplace. Having children aged 0–5 years increased the time devoted to childcare especially for women.

Table 5 shows that when we consider the time spent with children in distance learning, the working arrangements either of the partner or of the woman do not affect the woman's decision of how many hours to devote to her children, even though more hours of paid work decreased the time spent on distance learning during the second wave of COVID-19. In contrast, when looking at the portion of childcare specifically devoted to home schooling, we notice that men working from home during the lockdown or not working many months after the COVID-19 outbreak contributed about half an hour more to distance learning. Finally, children aged 6–10 years were particularly demanding in terms of time spent on online schooling.

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<sup>11</sup> Non-working women spent more hours on housework compared to both women working at their usual workplace and women working from home. Regression results where the baseline category for working arrangements is "working from home" are available upon request.



**Table 6** Multivariate regression model of gender gaps in the daily hours of housework, childcare, and children's distance learning during the second wave of COVID-19

	(1)	(2)	(3)
	Gap in hours of housework	Gap in hours of childcare	Gap in hours of children's distance learning
Women's age	0.031*** (0.010)	-0.077*** (0.024)	-0.011 (0.009)
Women having a degree	-0.084 (0.186)	0.108 (0.426)	-0.099 (0.165)
Women having children	0.271 (0.186)		
Center	-0.174 (0.235)	0.236 (0.546)	-0.055 (0.211)
South	0.605*** (0.212)	0.018 (0.483)	0.232 (0.187)
Women working from home	0.433* (0.227)	1.164** (0.523)	0.199 (0.202)
Women not working	0.111 (0.252)	3.736*** (0.595)	0.466** (0.231)
Partner working from home	-0.409 (0.265)	-0.577 (0.619)	-0.050 (0.240)
Partner not working	-0.657** (0.255)	-2.175*** (0.595)	-0.221 (0.230)
Constant	-0.430 (0.477)	4.945*** (1.161)	1.037** (0.450)
Observations	504	332	332
R-squared	0.063	0.169	0.026

*Notes:* Coefficient estimates from OLS regressions. The sample is made up of women cohabiting with a partner in the first column and women with children cohabiting with a partner in the second and third columns. The baseline category for working arrangements is "working at the usual workplace." The average gaps in the daily hours of housework, childcare, and distance learning are 1.20, 2.00, and 0.62, respectively. Standard errors in parentheses.

\*\*\* $p < 0.01$ .

\*\* $p < 0.05$ .

\* $p < 0.1$ .

To conclude, we find that working-from-home and nonworking men spend more hours on family work than men working at the usual workplace. However, this increase of men's involvement does not seem to lead to a reallocation of couples' roles in housework chores and childcare. The time spent on housework, childcare, and helping children in online schooling by women does not depend on their partners' working arrangements. Conversely, men spend less time on housework and home schooling when their spouses are at home. Hence, the extra family work due to COVID-19 is a burden mainly borne by women, regardless of the time men spend at home.

Finally, in Table 6, we analyze the determinants of the difference in the daily hours devoted to housework, childcare, and children's distance learning many months after the outbreak of COVID-19. Such a gap is much higher when the woman is working from home and/or not

working. The gender gap in both housework and childcare is instead lower when the partner does not work.

## 5 Concluding Remarks

In many countries, the Coronavirus pandemic has been associated with a “she-cession,” since many women lost their jobs and have experienced an increase in family work. The pandemic has also imposed new working arrangements, namely working from home, which have the potential of increasing men’s involvement in the family and thus of rebalancing the asymmetry in the division of housework and childcare within the couple. To what extent new work arrangements are able to achieve the goal of a more symmetric equilibrium is an empirical issue, which we have investigated using new data from Italy, a country characterized by high gender conservativeness. We have shown that, so far, working from home has not been able to rebalance the asymmetric equilibrium within the couple: although both men and women working from home are more involved in all family tasks, the time women spend on housework, childcare, and home schooling does not depend on their partners’ working arrangements. Conversely, men devote fewer hours to housework and home schooling when their spouses are at home.

Overall, our results show that COVID-19 may have a long-lasting impact on women. Policy interventions to sustain women’s status during the pandemic and their future outcomes are needed. One of the most important policies discussed in the public debate in Italy [proposed in the Piano Nazionale di Ripresa e Resilienza (PNRR)] in order to reduce the gender gap in Italy has been focused on increasing the supply of childcare for children aged 0–3 years (which is lower in Italy than in the rest of Europe: 25% against 59% in France, 42% in Spain, and 35% in Germany, for example).<sup>12</sup> However, a larger supply of early childcare while important does not seem to be enough for changing the gender unbalance we have discussed in this paper. Our results show that the division of labor within the household is hard to change, since women work more for the family even when both women and men are in the same working arrangements (working from home or not working). Our results show that a “cultural change” is needed in order to involve men more directly in the domestic activities of the household and childcare.

As research carried out in other European countries that experimented longer paternity leaves has shown, the introduction of such a policy has induced a shift toward a more egalitarian family model (Farré et al., 2022; Dunatchik and Özcan, 2021). The implementations of longer mandatory paternity leave (now in Italy 10 days) could potentially contribute to rebalancing women’s workload (at home and in the market), and would possibly shift Italian gender norms from the traditional family structure to a more egalitarian role model.

### Declarations

Not applicable.

### Competing interests

The authors declare that they have no conflict of interest.

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<sup>12</sup> Brilli et al. (2016) have analyzed the significant impact of childcare availability in Italy for mothers’ participation and child outcomes.

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## APPENDIX

**Table A1** Multivariate regression model of hours spent on housework by women and their partners during the first and second waves of COVID-19 (sample restricted to women with children)

	(1)	(2)	(3)	(4)
	Hours spent on housework by women during the lockdown	Hours spent on housework by partners during the lockdown	Hours spent on housework by women during the second wave of COVID-19	Hours spent on housework by partners during the second wave of COVID-19
Women's age	-0.005 (0.017)	-0.016 (0.018)	0.017 (0.015)	-0.024 (0.015)
Women having a degree	0.230 (0.238)	0.077 (0.245)	-0.167 (0.201)	-0.077 (0.206)
Having children aged 0–5 years	0.075 (0.306)	0.341 (0.315)	-0.059 (0.257)	-0.101 (0.262)
Having children age 6–10 years	-0.038 (0.264)	0.276 (0.272)	0.198 (0.221)	-0.076 (0.226)
Centre	-0.130 (0.304)	-0.304 (0.313)	0.104 (0.256)	0.112 (0.262)
South	1.088*** (0.268)	-0.215 (0.276)	0.791*** (0.228)	0.155 (0.233)
Women's hours of paid work	0.003 (0.008)	-0.001 (0.009)	-0.015 (0.009)	0.006 (0.009)
Women working from home	0.152 (0.310)	-0.590* (0.319)	0.249 (0.248)	-0.316 (0.253)
Women not working	0.694** (0.343)	-0.532 (0.353)	-0.225 (0.394)	0.032 (0.403)
Partner working from home	-0.243 (0.306)	-0.027 (0.315)	0.367 (0.291)	0.775*** (0.297)
Partner not working	-0.388 (0.272)	-0.207 (0.280)	-0.182 (0.279)	0.554* (0.285)
Constant	2.878*** (0.959)	2.786*** (0.987)	1.917** (0.788)	2.103*** (0.805)
Observations	273	273	332	332
R-squared	0.103	0.050	0.069	0.036

Notes: Coefficient estimates from OLS regressions. The sample is made up of women with children cohabiting with a partner. The baseline category for working arrangements is “working at the usual workplace.” Standard errors in parentheses.

\*\*\* $p < 0.01$ .

\*\* $p < 0.05$ .

\* $p < 0.1$ .