dECON
Facultad de Ciencias Sociales
UNIVERSIDAD DE LA REPÚBLICA

Documentos de Trabajo

Gender differences in domestic work during COVID19 in Uruguay

Florencia Amábile, Marisa Bucheli, Cecilia González and Cecilia Lara

Documento No. 12/21
Diciembre 2021
ISSN 0797-7484

Gender differences in domestic work during COVID19 in Uruguay[1]

Florencia Amábile
Departamento de Economía, Facultad de Ciencias Sociales, Universidad de la República, Montevideo, Uruguay

Marisa Bucheli
Departamento de Economía, Facultad de Ciencias Sociales, Universidad de la República, Montevideo, Uruguay

Cecilia González
Departamento de Economía, Facultad de Ciencias Sociales, Universidad de la República, Montevideo, Uruguay

Cecilia Lara
Instituto de Economía, Facultad de Ciencias Económicas y de Administración, Universidad de la República, Montevideo, Uruguay

[1] Florencia Amábile, Marisa Bucheli and Cecilia González
Departamento de Economía, Facultad de Ciencias Sociales, Universidad de la República, Montevideo, Uruguay
Cecilia Lara
Instituto de Economía, Facultad de Ciencias Económicas y de Administración, Universidad de la República, Montevideo, Uruguay

Abstract

The pandemic generated by Covid-19 caused a shock that would change households' distribution of domestic work. Based on a survey conducted in 2020 in Uruguay, this paper analyzes changes in the hours devoted to childcare and housework of a sample of highly educated population living with a partner. We find that women and men increased their hours of domestic work, and this is related to decreasing time in the labor market, but there is no relationship with spouses' time in paid work. The rise (decline) of female (male) time in the labor market leads to equal sharing of couples' domestic work. Finally, the respondents declared that the increase in their domestic work was more intensive than their partners, with women in particular stating they did more housework than men. The sharing domestic work gap tended to decline, but the final result is sensitive to the gender of the respondent.

JEL: J13, J16, J22

Keywords: Covid-19; gender time use gap; domestic work; childcare; housework; Uruguay

Resumen

La pandemia generada por Covid-19 provocó un shock que podría cambiar la distribución del trabajo doméstico en los hogares. Basado en una encuesta realizada en 2020 en Uruguay, este trabajo analiza los cambios en las horas dedicadas al cuidado de los niños y las tareas del hogar de una muestra de población con alto nivel educativo que vive en pareja. Encontramos que mujeres y hombres aumentaron sus horas de trabajo doméstico, y esto está relacionado con la disminución del tiempo en el mercado laboral, pero no existe relación con el tiempo de los cónyuges en el trabajo remunerado. El aumento (disminución) del tiempo de trabajo de las mujeres (hombres) en el mercado laboral conduce a un reparto equitativo del trabajo doméstico de las parejas. Finalmente, los encuestados declararon que el aumento del trabajo doméstico propio fue más intenso que el de sus parejas, y las mujeres en particular afirmaron que realizaonn más tareas domésticas que los hombres. La brecha en la proporción de trabajo doméstico realizado por las mujeres se redujo, pero el resultado final es sensible al género del encuestado.

Palabras clave: Covid-19; brecha de género en el uso del tiempo; trabajo doméstico; cuidado de niños; tareas del hogar; Uruguay

I. Introduction

The Covid-19 pandemic made many governments decide to suspend several economic activities and to pass movement restriction measures. Their effects on the labor market entailed job losses and an increasing incidence of working from home. Furthermore, in many countries, the measures included school and childcare closures. These changes motivated worldwide studies of the potential changes in the gender division of market work and home production.

For this purpose, several researchers carried out online use of time surveys, mainly in OECD countries. They provide robust evidence that the counterpart of the reduction of time spent on the labor market was an increase in the burden of housework and childcare for both men and women (Andrew, Cattan, Costa Dias, Farquharson, Kraftman, Krutikova, Phimister, and Sevilla 2020; Biroli, Bosworth, Della Giusta, Di Girolamo, Jaworska, and Vollen 2020; Carlson, Petts, and Pepin 2020; Sevilla and Smith 2020; Shafer, Milkie, and Scheibling 2020; Del Boca, Oggero, Profeta, and Rossi 2020.; Deryugina, Shurchkov, and Stearns 2021; Collins, Landivar, Ruppanner, and Scarborough 2021). They also indicate that both women and men, particularly fathers and mothers, increased time spent in home production. Most of these studies conclude that sharing tasks remained stable or became slightly more equal. Interestingly, in an Australian study Craig and Churchill (2021) concluded that the gender gap narrowed, but there was more malleability to reach gender equality in childcare than in housework. On the contrary, Ilkkaracan and Memiş (2021) found that in Turkey the Covid-19 shock widened the gender gap, which led them to highlight the fragility of the path prior to the shock to work balance conditions in the country.

Evidence for Latin America is scarce. To our knowledge, there is a study based on an online survey by Costoya, Echeverria, Edo, Rocha, and Thailinger (2020) that analyzes the Argentinian case. As in developed countries, the gender gap in the labor market narrowed slightly after the Covid-19 outbreak due to a more considerable reduction in hours worked by men than by women. But unlike developed countries, they find that unequal sharing of domestic tasks increased. They suggests that the pandemic provoked a reduction in hired domestic services which led to women having to absorb this change.

Another Latin American study refers to the Uruguayan case. ONU Mujeres-Unicef (2020) carried out an online survey one month after the Covid-19 outbreak in the country. They found a reduction of female time spent in the labor market higher than males and a slight increase in time spent in home production, higher for women than men. But this average result differs between educational groups. Among the low-educated, the domestic work gap rose due to higher female home production. But male home production remained stable as men did not increase their household tasks even when facing a reduction of labor market duties. In the highly educated population, both women and men increased their time spent in domestic work, and the gender gap did not change.

Our paper aims to study the possible effects of the pandemic in the domestic work of couples educated to a high level several months after the Covid-19 outbreak. In Uruguay, the first recorded case took place in the second week of March 2020. The government proposed following a "responsible freedom" behavior under the motto "stay at home" and passed regulations and suspensions of selected activities, including the promotion of working from home, and educational and childcare services were closed. For a few months mobility remained relatively low. After June 2020, activities gradually reopened and the "stay-at-home" behavior weakened.

Our study is interesting for several reasons. First, our survey was carried out when imposed and voluntary restrictions were relaxed. One month after the Covid-19 outbreak, according to ONU Mujeres-Unicef (2020), both women and men shared the burden of additional tasks equally. Our study enables us to assess whether this short-term behavior continued some months later.

Additionally, we focus on respondents who at least completed the medium educational level, which enables us to study a homogeneous group that follows more equitable gender social norms. Indeed, population gender gaps in the labor market and home production are structurally lower for the highly educated population (Bucheli, González, and Lara 2019; Lara and Bucheli 2017). We may expect that higher-educated women have a relatively higher bargaining power than low-educated women. This is an additional source of interest because we would focus on women in better conditions and a willingness to deviate from traditional gender roles.

In addition, although the relatively low magnitude of labor market changes, the effects differed between educational groups. Unemployment and suspensions affected mainly low-educated women. Meanwhile, working from home only affected highly educated workers. Note that the Covid-19 outbreak provoked a home production demand increase. So, working from home challenged highly educated workers to maintain labor productivity and meet these additional demands.

We use information from an online survey carried out in June–August 2020. The sample consists of individuals aged 25 to 64, living with a partner, who have at least 12 years of education. The average of working hours before Covid is very similar to the time of the survey, with a considerable increase in working from home incidence, consistent with official statistics. We carry out an OLS estimation using the information of both respondents and partners to analyze the change of hours devoted to domestic work and its two components, childcare and housework. In addition, we make an OLS estimation for couples in which the dependent variable is the change of the couple's sharing of domestic work.

Our main findings are as follows. The first estimation indicates that reducing working hours in the labor market is associated with increasing the time devoted to domestic work. But we do not detect an effect of the spouse's change in the labor market. In turn, the increase in domestic work was higher in the presence of children, while only housework increased when faced with the loss of babysitting or hiring domestic service. In addition, the childcare increase was higher for adults in charge of children who reduced their time spent in school. Finally, respondents informed that they increased their domestic work more intensively than their partners. We suggest that people felt overloaded and tended to perceive and report that they bear the new household demands. However, we cannot rule out that overloaded individuals self-selected to complete the questionnaire. Furthermore, female respondents reported a higher increase in housework than male respondents.

The multivariate analysis of the sharing gap within couples (the second estimation) indicates that a rise (decline) of female (male) time in the labor market leads to equal sharing|. In addition, the sign of the coefficient of the covariate that measures the gender gap prior to the Covid outbreak indicates that its reduction was more likely when it was higher. This finding suggests a reducing effect on the gender

inequity in domestic work sharing. However, the predictive values indicate that, on average, this reducing effect holds when the informant is a man but not a woman.

II. The Uruguayan context

For most of the year 2020, Uruguay succeeded in controlling the pandemic in terms of health management in an international comparison. The first recorded case of Covid-19 was on March 13. Wschebor (2021) identified three stages of the situation: i) from March to June, the pandemic was under control; ii) from June to October, new outbreaks appeared in the frontier with Brazil and in the health system in the capital city Montevideo; and iii) from October onwards, the pandemic began to be out of control.

Until September 2020, the number of Uruguayan daily confirmed new cases of Covid-19 per million people always remained below 6. More precisely, on September 1, Uruguay recorded three daily new cases per million people, while in Argentina it was 216, in Brazil 188, in Europe 41, and for the world 34. In terms of daily confirmed new Covid-19 deaths per million people, the country's position was also favorable: in September this indicator was 0.04, while in Argentina and Brazil it was 4, in Europe 0.4 and for the world 0.7 (Our World in Data, 2020[2]).

The government declared a health emergency at Covid's first outbreak and introduced a range of interventions to restrict social contact. Educational and care services were closed at all levels, and attempts were made to install virtual teaching for primary and secondary schools, apparently with low success. In addition, the government banned mass events and certain nonessential activities, ordered the closure of borders, and forced most public workers to work from home. Ten days after the first recorded case, the government urged employers to implement and promote, whenever possible, working from home. As a result, the number of remote workers increased sharply. It rose from 5.0 percent in March to 29.8 percent in April, and onwards it started to decline slightly (26.4 in May, 20.6 in June, 18.7 in July, and 14.9 in August) (INE 2021).

[2] https://ourworldindata.org/coronavirus

During the first stage, the population widely accepted the voluntary "stay-at-home" proposal, and mobility remained relatively low (Cabana, Etcheverry, Herrera, Fariello, Bermolen, and Fiori 2021). Several factors contributed to increasing mobility from June 2020. Among them, feelings of safety related to the low infection rate gained ground, making the "stay-at-home" behavior decline. In addition, at the end of June 2020, the reopening of schools began gradually. In the public sector, students could attend school twice or three times a week and with a restricted timetable, whereas private institutions could offer a full-time educational service. Thus, the second stage proposed by Wschebor (2021) began with a slight increase in contagions, followed by the spread of the pandemic after October 2020.

Although the health context remained relatively favorable until the last quarter of 2020 (Ministerio de Salud Pública, 2020), the economic activity level sharply declined. Indeed, in 2020 GDP decreased 5.9 percent due to a drop in all economic sectors, except for construction. The government implemented measures to mitigate the adverse effects on income, such as increasing the benefits of main assistance programs by 50%. Many workers lost their jobs in the labor market while others were suspended, and working from home increased.

In Table 1 we report the main indicators of the labor market for the trimester June–August 2020, when we carried out the survey, and for 2019, that is, before the outbreak. We used information about a sample of individuals with similar characteristics to those we focus on in this study. Indeed, the group comprises persons aged 25–64 living with a partner (specifically, those who self-report as heads of the household and their partners). Furthermore, we distinguish between workers with less than 12 years of schooling and more. As reported in Table 1, the unemployment rate increased for women of low educational level, but it remained similar for men and highly educated women. In addition, we also show the proportion of absent workers, i.e., those who had a job but were not effectively working at the time of the interview. This proportion increased because of the incidence of illness and suspension of activities. In our trimester of interest, the relevance of this situation increased particularly for low-educated women. We do not have information about teleworking before the outbreak because it was not considered a relevant feature. Data for 2020 indicate that it concerned around a quarter of highly educated workers, but it was practically inexistent among the low-educated.

Table 1. Unemployed, absent employed, and workers at home as a percentage of the labor force. Household heads and partners aged 25–64

	June–August 2019		June–August 2020	
	Men	Women	Men	Women
Unemployed				
Less than 12 schooling years	3.6	9.6	4.1	12.5
12 schooling years or more	2.9	3.1	2.4	4.3
Absent workers				
Less than 12 schooling years	5.6	5.8	8.0	10.1
12 schooling years or more	2.9	5.5	4.6	7.6
Workers at home				
Less than 12 schooling years	n.a	n.a	1.5	2.0
12 schooling years or more	n.a	n.a	20.9	26.4

Source: Calculations based on Instituto Nacional de Estadísica 2019 and 2020.

III. Data and empirical strategy

III.1 Data

We carried out an online survey the main aim of which was to collect detailed information about how women and men spent their time after the Covid-19 outbreak compared to before the pandemic. We gathered data on 593 women and 202 men living in Uruguay between June 15 and August 17 of 2020. To be eligible for inclusion, people had to be over 18 years old. As usual on self-select participation in surveys, the sample is biased towards high educated people. This is not an issue in this study because our target population is one of a high educational level.

The survey inquired about the weekly hours assigned to paid work, care, and other household activities at present and before the outbreak. Use of time of the partner, if living with the respondent, was also collected.

With regard to paid work, the survey inquired about employment status and hours worked from home and outside. With regard to care, it collected the time to take children to school or other activities, helping with school activities, play, and participation in recreational activities. It also asked about time devoted to the care of other household members and people living in another household. Finally, housework was collected in one question, clarifying that they included cooking, cleaning, shopping, repairs, pet care, etc.

The survey also inquired about the household's composition, whether the home hired domestic services or not, and children's time spent at school. The time reference of these questions also was at present and before the outbreak. Finally, the respondent provided educational level, age, and gender.

This study restricts the sample to the population aged 25 to 64 years old, living with a partner, and with at least 12 years of schooling. We balance observations to have responses in all variables in the multivariate analysis. Thus, we finally worked with the information reported by 460 individuals composed of 330 women and 130 men. We analyze the data using, alternatively, 460 couples and 920 individuals (respondents and their partners).

In Table 2, we report the average values of the principal respondents' characteristics. They are, on average, 43 years old and 58% of them live with children younger than age 13. Their average time spent in domestic work increased from 29 to 37 weekly hours; these numbers are 21 and 24 for their partners. Time spent in market work remained stable around 35 hours for both respondents and partners.[3] Finally, respondents reported that working from home rose from 6 to 16 hours. Unfortunately, we did not inquire about partners' telework.

[3] According to the Encuesta Continua de Hogares carried out in 2020 by the Instituto Nacional de Estadística, when we restrict the sample to individuals aged 25 to 64 years old, living with a partner and with more than 12 years of schoooling, the average age is aproximately 44, 58% do not live with children under age 12, and dedicate 40 weekly hours to market work. This suggests that we do not have major bias in our sample.

Table 2. Average values of main variables (standard deviation in parenthesis)

	Before		After	
Respondent characteristics				
Age (years)		43.29	(9.90)	
Female (1=Yes)		0.72	(0.45)	
Respondent hours of labor and domestic work				
Weekly hours spent in domestic work	28.58	(28.44)	37.20	(37.18)
Weekly hours spent in market work	35.50	(19.41)	34.22	(20.43)
Weekly hours working from home	6.09	(10.51)	15.97	(17.69)
Spouse hours of labor and domestic work				
Weekly hours spent in domestic work	20.87	(22.44)	24.39	(25.55)
Weekly hours spent in market work	35.25	(16.21)	32.02	(18.37)
Information of couples				
No children (aged<13)		0.58	(0.49)	
Hired domestic service or babysitting (1=Yes)	0.45	(0.5)	0.35	(0.48)
Weekly hours spent in school by children a/	8.65	(13.01)	3.96	(6.77)
Hired additional activities of children (1=Yes)	0.32	(0.47)	0.16	(0.37)

a/ For each case, we compute the average weekly hours spent by all couples' children, and we assign 0 when the couple has no children.

In addition, three variables suggest that requirements of domestic work increased. First, couples who hired domestic service or babysitting declined from 45% to 34%. Second, the average weekly hours spent by children in school decreased from 9 to 4 (computing zero for respondents without children). Finally, the percentage of couples that hired recreational services for children decreased from 31 to 16.

III.2 Empirical strategy

We carried out two multivariate analyses. First, we considered all the individuals, respondents and partners, as the analysis unit to study the change of hours spent in household activities. We estimated the following equation using an OLS procedure:

$$\Delta y_i = X_i'\beta + \epsilon_i \quad (1)$$

where Δy is the change in weekly hours (domestic work, childcare and housework), i is the individual, ϵ is a disturbance measure, and X is a vector of individual and household characteristics. We computed the standard errors using clusters by couples.

Among the personal attributes, we considered gender, age, and whether the person is the respondent or not. Gender is captured with a variable that takes value 1 for respondents identified as women and 0 when identified as men. We did not consider those respondents who opted for another category and their partners. The coefficient of this variable is interpreted as the relevant gender gap. We used a dummy variable to identify respondents and include its interaction with the gender variable.

In addition, we included two variables related to the labor market: the average change of hours spent in paid work and the hours spent in the labor market before the Covid-19 outbreak. The inclusion of this last variable seeks to control for omitted variable bias on the female variable since men assign more time to the labor market than women. So, men were more likely to experience a higher loss in the intensive margin.

Furthermore, we built two variables to consider the potential release of housework pressure: the spouse's average change of hours spent in employment and a dummy variable that distinguishes whether the household hired domestic service or babysitting before the pandemic but not at present.

Finally, three variables relate to children were inclulded. First, a dummy variable takes value 1 for individuals who live with at least one child below age 13 and zero if they do not. Second, we used information about the number of hours spent in school (for all children below 13). We calculated the average hours of all households' children before and during the Covid-19 crisis, computing zero in the case of nonattendance or no-child. The variable is the change of the average hours. Third, we considered

whether children have activities outside the home other than attending school. Specifically, we built a dummy variable that takes a value of 1 when children participated in these activities before the outbreak but not at the moment of the survey.

We also estimated equation (1) for male and female respondents separately to disentangle the source of the change in the gender gap. Using simple algebra and following Oaxaca (1973) and Blinder (1973), we decomposed the average outcome into the sum of two components:

$$\overline{\Delta y}_f - \overline{\Delta y}_m = \left(\bar{X}_f - \bar{X}_m\right)' \beta_f + X'_m \left(\beta_f - \beta_m\right) \quad (2)$$

where the subindex f denotes female and m, male. The first term on the right is the component that measures the contribution of the difference in the covariates (characteristics) between groups to the outcome gap. Household characteristics do not contribute to this component because they are, on average, equal for women and men. The second term is the part due to differences in coefficients. This latter component captures asymmetries in behavior reactions. As the covariates contain sets of dummy variables, we transformed the coefficients so that the estimated components are invariant to the choice of the (omitted) base categories using the STATA command by Jann (2008). Alternatively, we also calculated the decomposition:

$$\overline{\Delta y}_f - \overline{\Delta y}_m = \left(\bar{X}_f - \bar{X}_m\right)' \beta_m + X'_f \left(\beta_f - \beta_m\right) \quad (3)$$

where, the second component is weighted by the average attributes of females.

We carried out another estimation that focuses on the change in the domestic work gender gap within the couple. First, we calculated the couple's time devoted to domestic work before and after the Covid-19 outbreak. Then, following Sevilla and Smith (2020), we defined our outcome of interest as the change of the share of female time minus the male share change. We estimated:

$$\Delta Gap_i = \left(share_{i1}^f - share_{i1}^m\right) - \left(share_{i0}^f - share_{i0}^m\right) = \beta X'_{it} + \epsilon_{it} \quad (4)$$

The subindex *i* denotes the couple, the superindexes *f* and *m* refer to female and male, and 0 and 1 refer to before and after the Covid outbreak. The covariates are the same as in equation (1) plus the pre-pandemic share gap.

IV. Results

IV.1 Raw gender gaps and time use of spouses

This subsection analyzes the change in gender time use gaps of respondents and spouses separately. Table 3 presents the average weekly hours dedicated to paid and domestic work for respondents, while Table 4 shows the information concerning their partners.

The sample used in this study was not significantly affected by unemployment and reduction of working time, but experienced a change in the modality of market work: women and men decreased the work time outside the home (by 11 and 12 hours, respectively) and increased working from home (by nearly 10 hours). However, the time spent in domestic work rose after the start of Covid-19: women dedicated 9 more hours (from 30 to 39 weekly hours) and men, 7 (from 26 to 33).[4] Most of this increase was due to childcare (5 hours for both women and men).[5]

The gender gap in paid work remained favorable to men, being almost 6 hours before the pandemic and 4 hours after it. While looking at its components, the gender gap in working outside the home narrows from 5 to 4 hours, and the gender gap in working from home does not change, as the pre- and the post-Covid gap is almost zero. Nevertheless, the gender gap in domestic work in favor of women increases by almost two hours (from 4 to 6 hours), although this result is not statistically significant. The gender

[4] Differences in hours dedicated to domestic work between gender widen when considering time spent in other activities of care not related to childcare. This information is not available for partners.

[5] If respondents split between those who live with children under 12 and those who do not, there are no major differences in the hours dedicated to paid work, but there are differences in the hours dedicated to domestic work. Those with children dedicate three times as many hours to domestic work as those without children. In particular, those with children spend more hours on domestic work than paid work. In addition, before the pandemic, women with children spent 60 hours a week on domestic work and after the pandemic almost 81 hours. Men with children went from 47 to 61 hours. Estimations are available upon request.

gap in childcare remains relatively unchanged at around 2 hours. However, the gender gap in the time dedicated to housework significantly increases, going from 2 to 4.

The ONU Mujeres-Unicef (2020) study finds for both men and women of high socioeconomic status, a greater drop in paid work and a lower increase in domestic work than those found in this paper. Like us, they do not find a significant change in the domestic work gender gap. The differences may be due to different characteristics of the surveys,[6] in particular that the survey conducted by ONU Mujeres-Unicef (2020) asks for the hours of a week from Monday to Friday, while ours includes weekends. On the other hand, our survey could be capturing a certain recovery in the labor market. Finally, several months of the "stay-at-home" proposal could have generated an increase in household chores.

Table 3: Respondents' weekly hours before and after Covid-19 and gender gap

	Paid Work			Domestic Work			N
	Total	In the workplace	From home	Total	Childcare	Housework	
Pre Covid-19							
Women	33.94	27.90	6.04	29.67	15.74	13.92	330
Men	39.46	33.26	6.20	25.80	13.90	11.91	130
Post Covid-19							
Women	33.06	17.05	16.02	38.84	20.47	18.37	330
Men	37.15	21.28	15.87	33.05	18.43	14.62	130
Change							
Pre-Covid Gap	-5.52***	-5.36***	-0.16	3.86	1.85	2.02*	
Pos-Covid Gap	-4.08*	-4.23**	0.15	5.79	2.04	3.74***	460
Gap change	1.44	1.13	0.30	1.92	0.20	1.73**	

[6] The work of ONU Mujeres-Unicef (2020) is based on a telephone survey conducted between April 25 and 28, 2020 of people over 18 years of age, living in households with children under 18 years of age.

Notes: *** p<0.01, ** p<0.05, * p<0.1. Table reports mean hours of market and domestic work (total and its components) before and after the COVID-19 outbreak, and the change in the mean gap for respondents.

Table 4 presents the hours of work that the respondents declare regarding their partners. We observe differences between women and men when comparing self-report (reported in Table 3) and the information given about their spouses. We see that women say that before Covid-19, their partners dedicated 3 hours less to paid work and 8 hours less to domestic work than male respondents. After the start of Covid-19 the differences increased to 4 and 12 hours, respectively.

Meanwhile, men reported that before Covid-19 their partners spent 2 hours less in the labor market than female respondents. This gap increases to 4 hours after the outbreak. Finally, the difference in the average time allocated to domestic work between the sample of women and the spouses of men respondents passed to be null to six hours.

We may surmise that individuals overstate their work in relation to their partners' and this discrepancy increased after the outbreak. It is also possible that individuals who mainly bear the burden of work were more prone to compare the survey.

Table 4: Spouses' weekly hours before and after Covid-19

	Paid	Domestic Work			Observations
	Work[a/]	Total	Childcare	Housework	
Pre COVID-19					
Women (informed by men)	32.00	29.35	10.33	19.02	130
Men (informed by women)	36.52	17.52	6.75	10.78	330
Post COVID-19					
Women (informed by men)	28.99	32.62	11.53	21.09	130
Men (informed by women)	33.22	21.14	8.38	12.76	330

Notes: Table reports mean hours of market work and domestic work (total, childcare, and housework) before and after the Covid-19 outbreak for the respondent's spouse.

a/: No information about weekly hours of paid work from home and outside the home is available for partners.

In the next section, we consider all the information of respondents and spouses. On the basis of this data the gender gap increased by 2 hours, and this difference is significant.

IV. 2 Multivariate analysis of the change in domestic work

Table 5 reports the results of the estimations of equation (1). Columns (1) and (2) present the estimates of the time change spent in total domestic work after and before the Covid-19 outbreak. In columns (3) and (4), the outcome is the change in hours of childcare, and in columns (5) and (6), the change in hours of housework. The covariates in columns (1), (3), and (5) include age, gender, a dummy variable identifying the respondent, the interaction between gender and this dummy, and variables related to the labor market.

A positive change in the time spent in the labor market reduces the change in hours spent in domestic work and housework activities, consistent with most of the evidence on labor supply. As time spent in the labor market declined, these results indicate a time substitution between paid and unpaid work.[7] However, we do not find evidence of effects on the change in hours spent in childcare. Meanwhile, an increase in the spouse's hours of market work does not significantly increase housework.

The estimates indicate that the higher the labor market work hours before the Covid-19 outbreak, the higher the increase of other housework. This result is consistent with having a better chance of reducing time in the labor market when this allocation was higher. As women are likely to spend less hours in the market, introducing this variable is needed to control for omitted variable bias on the female variable.

[7] In Table A1 of the Appendix we present an estimation using information only of respondents. This makes possible the inclusion of a dummy variable that takes value 1 if the person increased the hours worked at home. According to these results, working from home increases the time spent in childcare, housework, and total domestic work.

The coefficient of the variable respondent is positive for total domestic work and childcare, indicating that the increase in respondents' domestic work was 3.8 weekly hours more than the partners. This increase in the gap is composed of 3 hours of childcare and 0.8 hours of housework. The female and respondent's variable interaction does not affect the change in total hours of domestic work nor childcare, while it increases by 1.7 hours the gap in housework. In short, all respondents tend to inform that they increased their domestic work more than their partners, and this trait is more profound among women when reporting housework. Consequently, the domestic work gender gap does not change, but according to women the housework gender gap increases. This result contrasts with the findings that only consider the respondents' information, presented in Table A1 of the Appendix. Indeed when we focus on the information provided by respondents, both domestic work and housework gender gaps increase.

Columns (2), (4), and (6) also include variables related to domestic service, babysitting, children's activities, and school attendance. The increase in domestic work, childcare and housework of individuals without children was lower than those with children. There is no significant effect of the loss of hired domestic services or babysitting on domestic work and childcare. But, there is a substitution of hired services by housework, as found by Costoya et al. (2020) for Argentina. Finally, the decline in the hours of school attendance had a positive effect on childcare, while not on total domestic work or housework.

Table 5. OLS regression results. Outcomes: Change in total hours of domestic work, childcare, and housework between after and before the Covid outbreak

	Domestic Work		Childcare		Housework	
	(1)	(2)	(3)	(4)	(5)	(6)
Age	-0.123***	-0.024	-0.120***	-0.039**	-0.003	0.015
	(0.037)	(0.033)	(0.024)	(0.017)	(0.023)	(0.025)
Female (1=Yes)	-0.028	-0.216	-0.344	-0.594	0.316	0.378
	(0.843)	(0.876)	(0.457)	(0.507)	(0.545)	(0.546)

Respondent (1=Yes)	3.777***	3.630***	3.016***	2.798***	0.761	0.832
	(1.323)	(1.245)	(1.072)	(0.986)	(0.539)	(0.547)
Female##Respondent	2.236	2.562	0.461	0.922	1.775*	1.640*
	(1.902)	(1.747)	(1.360)	(1.187)	(0.953)	(0.954)
Change in hours of labor market work	-0.142***	-0.140***	-0.038	-0.036*	-0.105***	-0.104***
	(0.038)	(0.034)	(0.024)	(0.021)	(0.023)	(0.023)
Spouse's change in hours of labor market work	-0.003	0.001	-0.020	-0.017	0.017	0.018
	(0.046)	(0.043)	(0.030)	(0.027)	(0.022)	(0.022)
Pre total hours of labor market work	0.036	0.031	-0.002	-0.006	0.038**	0.037**
	(0.026)	(0.023)	(0.016)	(0.014)	(0.016)	(0.015)
No child (1=Yes)		-6.310***		-4.829***		-1.480*
		(1.427)		(0.974)		(0.780)
Domestic service or Babysitting (1=Yes before and No after)		1.512		0.105		1.407**
		(1.096)		(0.701)		(0.666)
Change in hours of school attendance		-0.128		-0.158**		0.030
		(0.106)		(0.078)		(0.049)
Additional activities of children (1=Yes before and No after)		3.325		1.857		1.469
		(2.176)		(1.548)		(1.169)
Constant	7.098***	5.504***	6.725***	5.243***	0.374	0.261

	(1.988)	(1.895)	(1.389)	(1.221)	(1.155)	(1.180)
Observations			920			
R-squared	0.082	0.205	0.054	0.227	0.091	0.113

Notes: Table reports estimated coefficients of equation (1) and robust clustered standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

To disentangle the source of the gender gap in the change in hours of domestic work, we perform the Oaxaca decomposition of equation (2) presented in Table 6. In the first row, we report the average change in the gender gap: this is 2.859 hours in total domestic work, 1.278 in childcare, and 1.580 in housework. The following two rows report the contribution of each component (the detailed decomposition is shown in Table A2 of the Appendix). A negative component sign indicates that it contributes to reducing the gender gap. Columns (1), (3), and (5) compute the component when the coefficients gap is weighted by the female characteristics, while Columns (2), (4), and (6) use male characteristics.

The contribution of gender differences in characteristics is positive and significant. The main variable that explains this result is the dummy that distinguishes the respondent. As the gap is computed as the female minus the male change, the findings indicate that the increase in the gender gap widens when the respondent is a female.

The gender difference in coefficients contributed to widen the gap in domestic work, but this finding is not robust when analyzing childcare and housework separately. This is due to two opposite factors. On the one hand, there is a negative contribution of the change in own hours in the labor market. This means that faced with a similar reduction of labor market time, the consequent rise in domestic work is higher for women than men. On the other hand, there is a positive contribution of the time spent in the labor market before Covid. This means that women and men with similar pre-working time, that is, with the same available time to adjust, react differently. Women tend to spend more time in domestic work than men even when allocating similar time to the labor market.

Table 6. Oaxaca decomposition of the change in hours of domestic work, childcare, and housework activities for couples

	Domestic work		Childcare		Housework	
	(1)	(2)	(3)	(4)	(5)	(6)
Average gap (without adjustment)	*2.859***		*1.278***		*1.580***	
	(0.743)		*(0.516)*		*(0.402)*	
Explained	1.216**	2.094***	1.098**	1.508***	0.118	0.586*
	(0.584)	(0.551)	(0.465)	(0.336)	(0.255)	(0.320)
Unexplained	1.643*	0.765	0.181	-0.229	1.462***	0.994**
	(0.998)	(0.748)	(0.803)	(0.511)	(0.444)	(0.412)
Observations	920					

Notes: Table reports the Oaxaca decomposition of equation (1). Normalized equations. Robust clustered standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

IV.3 Changes in domestic work sharing

The share of domestic work done by women before the Covid-19 outbreak was 58.5 percent, corresponding to a gender gap of 17.1 percentage points. These numbers are not significantly different during the pandemic, reaching 59 percent and 18.1 percentage points. To analyze this change, we present the results of three specifications of equation (4) estimation in Table 7.

The estimation of Column (1) only includes the change in hours of market work of women and men. The gender gap narrowed for couples in which the man declined their time allocated to the labor market but widened when it was the women who reduced their working time. The signs are consistent with a behavioral response of reducing domestic work when time increases in the labor market. The absolute values of the coefficients indicate that the response is sharper for men than women. Consequently, a reduction of one hour of male market work narrows the sharing gender gap by 0.49 percentage points, while a similar decrease of female work widens it by 0.24 percentage points.

The magnitudes related to changes in the labor market are similar when also including personal characteristics and variables related to domestic service and school attendance, as reported in Column (2). The coefficient of the female respondent variable is positive and significant, indicating that the increase in the sharing gender gap is higher when the survey's respondent is a woman. This is consistent with the findings of the previous section and may be due to nonobservable gender differences of respondents in the sample. In turn, we do not find significant effects of the other covariates introduced in this specification. In particular, we do not see any effect of the changes in domestic service and babysitting hiring.

Finally, Column (3) also includes the pre-Covid-19 share gap in domestic work (in percentage points). The rest of the coefficients are not affected by the inclusion of this variable. The negative coefficient indicates that an unequal sharing reduction is more likely if the pre-gap is higher. Thus controlling for all the covariates, we find a reducing effect on the gender inequity in the share gap of domestic work. We calculated the average predictive output for women and men respondents using the average values of the other covariates. Interestingly, we obtained a tendency toward equal sharing (a negative predicted value) when the respondent was a man but toward unequal sharing when a woman provided the information.

Table 7. OLS regression results for couples. Outcome: Change in the domestic work sharing gap between after and before the Covid outbreak

	(1)	(2)	(3)
Change in hours of paid work of women	-0.0024***	-0.0025***	-0.0020***
	(0.0008)	(0.0008)	(0.0007)
Change in hours of paid work of men	0.0049***	0.0050***	0.0045***
	(0.0010)	(0.0010)	(0.0009)
Age		-0.0015	-0.0007
		(0.0011)	(0.0010)
Female respondent (1=Yes)		0.0822***	0.1100***

		(0.0198)	(0.0203)
No child (1=Yes)		0.0210	-0.0051
		(0.0261)	(0.0253)
Domestic service or Babysitting		0.0377	0.0328
(1=Yes before and No after)		(0.0422)	(0.0373)
Change in hours of school attendance		-0.0013	-0.0004
		(0.0012)	(0.0012)
Additional activities of children		0.0261	0.0409
(1=Yes before and No after)		(0.0265)	(0.0258)
Pre-gap share of unpaid work			-0.1999***
			(0.0312)
Constant	0.0214**	-0.0011	-0.0024
	(0.0097)	(0.0481)	(0.0452)
Observations	460	460	460
R-squared	0.1058	0.1487	0.2548

Notes: Table reports estimated coefficients of equation (4) and robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1. The gap change is the difference between the domestic work sharing gap after and before the Covid-19 breakout. The domestic work sharing gap is the difference between the share of time spent by women and men.

V. Conclusions

This paper analyzes the effects of the Covid-19 outbreak on domestic work by gender using specific data collected in Uruguay in June–August 2020. We analyze people living with a partner, using information reported by one member of the couple aged 25 to 64, who had completed at least 12 years of schooling.

Respondents declared having increased their time allocated to domestic work after the outbreak. Meanwhile, market work remained stable, but the share of time working from home increased. In addition, they reported that their partners increased their domestic work and diminished their time in

the labor market. The multivariate analysis captures the notion that the growth of domestic work was higher for respondents than for their partners. This gap may be the result of the self-selection of respondents. Indeed, as respondents increased the sum of working time in the labor market and domestic work, they are possibly a pool of individuals who felt overloaded and encouraged to fill in a time use survey. For instance, regarding leisure time and mood, women are more likely than men to feel dissatisfaction. Moreover, they felt worse about these issues after the Covid-19 outbreak than they did before it broke. It is also possible that respondents and partners do not come from different samples. The Covid outbreak could have produced a time stress shock on everyone, and consequently, any respondent would perceive and report that they bear the new household demands.

We also analyze the effect of households' characteristics. We find that the increase in domestic work was higher for individuals living with children. In Uruguay, one of the measures taken to reduce mobility and Coronavirus infections was the closure of schools. Since May 2020, there has been a gradual return to face-to-face activities. Due to distancing measures within the classrooms, not all children returned for the entire timetable but attended a few times a week or for fewer hours per day. In our estimation, childcare growth was higher when children reduced their time spent in school. Additionally, the increase in housework (but not childcare) was associated with the loss of babysitting or hiring domestic service resulting from the "stay at home" behavior and income losses. None of these variables affected the change in the sharing gap.

Other important findings are related to the link between the labor market and domestic work. The multivariate analysis shows the existence of the usual substitution relationship. Interestingly, we do not capture any association between changes in domestic work and the partner's time spent in the labor market. In the analysis of couples, a rise (decline) of female (male) time in the labor market leads to a more equal sharing. This result is favorable in the sense that we may expect that more equalizing policies in the labor market may push the domestic work towards a more egalitarian sharing. We are aware that we found this result in the highly educated group, but we cannot rule out that does not hold for others. For example, for some women an increase in the time spent in the labor market may increase their total workload.

Finally, the results about the change in the gender gap depend on the respondent's gender. On the one hand, both women and men increase their time spent in domestic work, but the gender gap increases when using the sample of respondents. This rise is due only to housework where women faced the burden of the additional tasks more intensively than men. Meanwhile, the childcare gender gap remains stable, indicating that a more equitable balance was achieved. On the other hand, the increase in the gender gap vanishes when taking into account the time spent in domestic work by informants and spouses. We do not find changes in the childcare gender gap like in the respondents' sample. But the findings about the gender gap in housework depends on the respondent's gender. It remains unchanged according to men, but increased according to women.

The analysis of couples shows that the raw sharing gap is similar before and after the Covid-19 outbreak. Nevertheless, when controlling by other covariates, we find a trend towards equality. Indeed, we interpret that the negative coefficient related to the pre-Covid sharing gap decreases the prior unbalance. However, there is a positive coefficient related to the fact that the respondent is female, indicating that according to women, the sharing gap increased. Consequently, the average predictive output for women respondents indicates a more unequal sharing after Covid, whereas there is an equal trend in the prediction for men.

The findings related to the gender gap point to women and men having different perceptions on how they adjust their time allocation to family demands. This highlights the importance of use of time surveys interviewing more than one member of the household in order to cross-examine the information. In addition, inquiring about satisfaction and stress also appears as relevant issues.

References

Andrew, A., Cattan, S., Costa Dias, M., Farquharson, C., Kraftman, L., Krutikova, S., Phimister, A., and Sevilla, A. 2020. The Gendered Division of Paid and Domestic Work Under Lockdown. IZA Discussion Paper No. 13500, Available at SSRN: https://ssrn.com/abstract=3654937

Biroli, P., Bosworth, S., Della Giusta, M., Di Girolamo, A., Jaworska, S., & Vollen, J. (2021). "Family Life in Lockdown." *Frontiers in psychology*, 12, 687570. https://doi.org/10.3389/fpsyg.2021.687570

Blinder, A. S. 1973. "Wage discrimination: reduced form and structural estimates." *Journal of Human resources*, 436-455.

Bucheli, M., González, C., & Lara, C. 2019. "Gender Differences in Home Production and Consumption in Uruguay," in *Time Use and Transfers in the Americas*, pp. 97–118. Cham: Springer.

Cabana, Á, Etcheverry, L, Herrera, D, Fariello, M, Bermolen, P and Fiori, M. 2021. "Efecto de la reducción de movilidad en la segunda ola de COVID-19." *Reporte 11 del Grupo Uruguayo Interdisciplinario de Análisis de Datos de COVID-19* (GUIAD-COVID-19)-Feb 2021. 20 p.

Carlson, D. L., Petts, R., & Pepin, J. 2020. "Changes in Parents' Domestic Labor during the COVID-19 Pandemic." https://doi.org/10.31235/osf.io/jy8fn

Collins, C., Landivar, L. C., Ruppanner, L., & Scarborough, W. J. 2021. "COVID-19 and the Gender Gap in Work Hours." *Gender, Work & Organization* 28: 101–112.

Costoya, V., Echeverria, L., Edo, M., Rocha, A., & Thailinger, A. 2020. "The Impact of COVID-19 in the Allocation of Time within Couples. Evidence for Argentina." Working Paper No 145, Universidad de San Andrés, Argentina.

Craig, L., & Churchill, B. 2021. "Working and Caring at Home: Gender Differences in the Effects of COVID-19 on Paid and Unpaid Labor in Australia. *Feminist Economics* 27(1–2): 310–326.

Del Boca, D., Oggero, N., Profeta, P., & Rossi, M. 2020. "Women's and Men's Work, Housework and Childcare, Before and During COVID-19." *Review of Economics of the Household* 18(4): 1001–1017.

Deryugina, T., Shurchkov, O., & Stearns, J. 2021, May. "Covid-19 Disruptions Disproportionately Affect Female Academics." In *AEA Papers and Proceedings* (Vol. 111, pp. 164–68).

INE. 2021. Encuesta Continua de Hogares de 2020, Instituto Nacional de Estadística. Retrieved from https://www.ine.gub.uy/web/guest/encuesta-continua-de-hogares1

İlkkaracan, İ., & Memiş, E. 2021. "Transformations in the Gender Gaps in Paid and Unpaid Work During the COVID-19 Pandemic: Findings from Turkey." *Feminist Economics* 27(1–2), 288–309.

Instituto Nacional de Estadística. (2021). Infografía COVID-19. Teletrabajo.

Jann, Ben. 2008. "The Blinder–Oaxaca Decomposition for Linear Regression Models. *The Stata Journal* 8(4): 453–479.

Lara, C. & Bucheli, M. 2017. "Producción del Hogar por Edad y Sexo: Nueva Evidencia para Uruguay." *Revista Desarrollo y Sociedad, Colombia* 78: 201–232, ISSN 0120-3584.

Ministerio de Salud Pública, 2020. Informe epidemiológico COVID-19. Actualización al 13 de noviembre de 2020. https://www.gub.uy/ministerio-salud-publica/comunicacion/noticias/informe-epidemiologico-covid-19-del-13-noviembre-2020.

Oaxaca, R. 1973. "Male-female wage differentials in urban labor markets." *International economic review*, 693-709.

ONU Mujeres-Unicef. 2020. "Principales Resultados de la Encuesta Sobre Niñez, Género y Uso del Tiempo en el Marco de la Emergencia Sanitaria." Uruguay. https://lac.unwomen.org/es/digiteca/publicaciones/2020/06/encuesta-ninez-genero-y-uso-de-tiempo-uruguay

Sevilla, A., & Smith, S. 2020. "Baby Steps: The Gender Division of Childcare During the COVID-19 Pandemic." *Oxford Review of Economic Policy* 36 (Supplement_1), S169–S186.

Shafer, K., Milkie, M., & Scheibling, C. 2020, May 23. The Division of Labour Before & During the COVID-19 Pandemic in Canada. https://doi.org/10.31235/osf.io/24j87

Wschebor, N. 2021. Conference on “Uruguay en la pandemia desde la ciencias sociales. Encrucijada y posibles salidas” organized by Facultad de Ciencias Sociales, Unversidad de la República. Retrieved from https://www.youtube.com/watch?v=S11OolArzbw

Appendix

Table A1. OLS regression results for respondents. Outcomes: Change in total hours of domestic work, childcare, and housework

	Domestic work	Childcare	Housework
Age	-0.026	-0.047	0.021
	(0.052)	(0.032)	(0.036)
Female (1=Yes)	2.549*	0.453	2.096***
	(1.389)	(1.070)	(0.682)
Change in hours of labor market work	-0.156***	-0.061*	-0.095***
	(0.051)	(0.033)	(0.034)
Spouse's change in hours	0.041	-0.015	0.056**
of labor market work	(0.069)	(0.059)	(0.026)
Pre-total hours of labor market work	0.036	-0.006	0.042*
	(0.035)	(0.021)	(0.024)
More market work from home (1=Yes)	5.429***	3.606***	1.822**
	(1.358)	(0.956)	(0.773)
No child (1=Yes)	-6.880***	-5.506***	-1.374
	(2.202)	(1.609)	(1.078)
Domestic service or Babysitting	1.408	0.076	1.332
(1=Yes before and No after)	(1.892)	(1.214)	(1.130)
Change in hours of school attendance	-0.325*	-0.329***	0.004
	(0.168)	(0.126)	(0.073)
Additional actitivities of children	7.219**	4.642*	2.577
(1=Yes before and No after)	(3.335)	(2.476)	(1.757)
Constant	5.257*	5.735***	-0.479
	(2.805)	(1.760)	(1.844)
Observations	460	460	460

R-squared	0.278	0.327	0.106

Notes: Table reports estimated coefficients of equation (1) for respondents and robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1.

Table A2. Oaxaca detail decomposition of the change in hours of domestic work, childcare and housework activities

	Domestic work		Childcare		Housework	
	(1)	(2)	(3)	(4)	(5)	(6)
Average gap (without adjustment)	*2.859****		*1.278***		*1.580****	
	(0.743)		*(0.516)*		*(0.402)*	
Explained	1.216**	2.094***	1.098**	1.508***	0.118	0.586*
	(0.584)	(0.551)	(0.465)	(0.336)	(0.255)	(0.320)
Age	--	--	--	--	--	--
	--	--	--	--	--	--
Change in hours of labor market work	-0.353	-0.078	-0.134	0.020	-0.219*	-0.098
	(0.218)	(0.075)	(0.099)	(0.032)	(0.132)	(0.076)
Spouse's change in hours	0.068	-0.068	0.086	-0.037	-0.018	-0.031
of labor market work	(0.109)	(0.069)	(0.085)	(0.039)	(0.050)	(0.042)
Pre total hours of labor market work	-0.007	-0.254*	0.019	0.011	-0.026	-0.265**
	(0.109)	(0.143)	(0.082)	(0.071)	(0.052)	(0.113)
Respondent (1=Yes)	1.507***	2.494***	1.127**	1.513***	0.380	0.981***
	(0.567)	(0.534)	(0.446)	(0.328)	(0.238)	(0.305)
No child (1=Yes)	--	--	--	--	--	--
	--	--	--	--	--	--
Domestic service or Babysitting	--	--	--	--	--	--
(1=Yes before and No after)	--	--	--	--	--	--
Change in hours of school attandance	--	--	--	--	--	--
	--	--	--	--	--	--
Additional actitivities of children	--	--	--	--	--	--
(1=Yes before and No after)	--	--	--	--	--	--
Unexplained	1.643*	0.765	0.181	-0.229	1.462***	0.994**

	(0.998)	(0.748)	(0.803)	(0.511)	(0.444)	(0.412)
Age	-2.171		-1.427		-0.743	
	(2.436)		(1.550)		(1.593)	
Change in hours of market work	-0.263*	-0.538**	-0.148	-0.302**	-0.115	-0.236*
	(0.154)	(0.221)	(0.097)	(0.152)	(0.080)	(0.132)
Spouse's Change in hours	-0.266	-0.130	-0.240	-0.117	-0.026	-0.013
of market work	(0.224)	(0.123)	(0.158)	(0.092)	(0.112)	(0.055)
Pre total hours of market work	2.080	2.327	0.062	0.070	2.018***	2.258***
	(1.282)	(1.434)	(0.876)	(0.980)	(0.777)	(0.869)
Respondent (1=Yes)	0.493	-0.493	0.193	-0.193	0.300	-0.300
	(0.385)	(0.385)	(0.259)	(0.259)	(0.211)	(0.211)
No child (1=Yes)	-0.045		0.000		-0.045	
	(0.216)		(0.158)		(0.092)	
Domestic service or Babysitting	-1.342		-0.843		-0.499	
(1=Yes before and No after)	(0.847)		(0.535)		(0.496)	
Change in hours of school attendance	1.036		0.889		0.147	
	(0.806)		(0.601)		(0.331)	
Additional actitivities of children	-1.686		-1.165		-0.521	
(1=Yes before and No after)	(1.196)		(0.907)		(0.593)	
Constant	3.807		2.860		0.947	
	(2.926)		(1.885)		(1.777)	
Observations	920					

Notes: Table reports the Oaxaca detail decomposition of equation (1). Normalized equations. Robust clustered standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1. Variables Age, No child, Change in hours of school attendance, and Additional activities of children are the same within each household, so these variables do not contribute to the Explained decomposition.