



Harkness, S. E. (2021). Gender division of housework during the COVID-19 pandemic: Temporary shocks or durable change? *Demographic Research*, 45, 1297-1316. [43].
<https://www.demographic-research.org/volumes/vol45/43/default.htm>

Publisher's PDF, also known as Version of record

License (if available):
CC BY

[Link to publication record in Explore Bristol Research](#)
PDF-document

This is the final published version of the article (version of record). It first appeared online via Max Planck Society at <https://doi.org/10.4054/DemRes.2021.45.43> .Please refer to any applicable terms of use of the publisher.

University of Bristol - Explore Bristol Research

General rights

This document is made available in accordance with publisher policies. Please cite only the published version using the reference above. Full terms of use are available:
<http://www.bristol.ac.uk/red/research-policy/pure/user-guides/ebr-terms/>



DEMOGRAPHIC RESEARCH

A peer-reviewed, open-access journal of population sciences

DEMOGRAPHIC RESEARCH

VOLUME 45, ARTICLE 43, PAGES 1297–1316

PUBLISHED 16 DECEMBER 2021

<https://www.demographic-research.org/Volumes/Vol45/43/>

DOI: 10.4054/DemRes.2021.45.43

Descriptive Finding

Gender division of housework during the COVID-19 pandemic: Temporary shocks or durable change?

Alejandra Rodríguez Sánchez

Anette Eva Fasang

Susan Harkness

© 2021 Rodríguez Sánchez, Fasang & Harkness.

This open-access work is published under the terms of the Creative Commons Attribution 3.0 Germany (CC BY 3.0 DE), which permits use, reproduction, and distribution in any medium, provided the original author(s) and source are given credit.

See <https://creativecommons.org/licenses/by/3.0/de/legalcode>.

Contents

1	Introduction	1298
2	Data and methods	1300
2.1	Data	1300
2.2	Methods	1302
3	Results	1303
4	Discussion	1309
6	Acknowledgements	1311
	References	1312

Gender division of housework during the COVID-19 pandemic: Temporary shocks or durable change?

Alejandra Rodríguez Sánchez¹

Anette Eva Fasang²

Susan Harkness³

Abstract

BACKGROUND

First evidence shows that lockdown and confinement measures were associated with a more egalitarian gender division of housework in the United Kingdom. However, we know little about how the gender division of housework adjusted in different phases of the pandemic.

OBJECTIVE

We ask: (1) How did the gender division of housework change with the first national lockdown in March 2020? (2) Did observed changes persist when the lockdown measures were lifted or did couples revert to the gender division of housework observed before lockdown?

METHODS

We describe changes in the share of housework done by women before, during, and after the first lockdown using data from the Understanding Society COVID-19 study and employing fixed effects regression for couples with pre-school or school age children and couples without children living at home.

RESULTS

The lockdown measures affected the gender division of housework with differential effects by the age of the youngest child in the household. After the initial shock, couples with younger children and couples with school-age children reverted to their pre-pandemic gender division of housework. However, couples without children living at home sustained a more equal share of housework.

¹ Humboldt-Universität zu Berlin, Germany. Email: rodrisad@hu-berlin.de.

² Humboldt-Universität zu Berlin, Germany.

³ University of Bristol, UK.

CONCLUSIONS

Like other shocks to the division of labor, couples tend to adapt to new circumstances, sustaining previous patterns of within household inequality. Initial signs of increasing gender equality at the start of the pandemic had already started to vanish for some by September 2020.

CONTRIBUTION

We show the effects of lockdown depend on couples' life course stage at the time of the shock.

1. Introduction

Lockdown and social distancing measures during the COVID-19 pandemic in the United Kingdom and elsewhere created a care gap for households, especially those with dependent children or adults (Andrew et al. 2020). Although evidence suggests that in the early stages of the pandemic both women and men took on the additional care necessitated by the restrictions, women carried a disproportionate share of the burden (Andrew et al. 2020; Kreyenfeld and Zinn 2021; Sevilla and Smith 2020; Zoch, Baechmann, and Vicari 2021). Little is known about how UK families adapted to the pandemic as the situation evolved. Early commentators speculated that men's increasing involvement in the home during the March 2020 lockdown might permanently lead to greater within-household equity. Alternatively, changes might only be short-lived and fade with time.

Transitory or permanent adaptations indicate families' ability to bounce back and readjust. In this context continual adjustment processes are likely, given that shocks from lockdown and confinement policies affected multiple dimensions of the work–family interface (Adams-Prassl et al. 2020). Some couples had more available time for housework – for example, due to unemployment, furlough, and reduced opportunities for leisure activities (Hupkau and Petrongolo 2020). Furlough was introduced in spring 2020 to allow people to keep their jobs and prevent a generalized rise in unemployment, and paid 80% of wages. Nonetheless, the time demands of housework increased, with more cooking, shopping, and cleaning during confinement and increased needs for homeschooling and developmental childcare due to school and childcare closures.

Previous research shows that other 'shocks' to the family, such as first births, reserved parental leave for fathers, and unemployment, can trigger changes in the gender division of housework, at least temporarily. These shocks are often planned and expected, and surrounded by clear norms that guide couples' reactions. By contrast, the pandemic was unexpected and combined multiple extensive shocks: lockdown, confinement,

economic recession, and school closures. On the one hand, this may limit the transferability to the pandemic setting of findings from previous research on external shocks and the division of housework. On the other hand, familiar shocks, even if they are different in important ways, may provide a guide to the behavior that couples are likely to fall back on in times of extreme uncertainty. These and other shocks to the division of labor have been shown to reinforce or sustain a traditional gender division of housework, despite substantial gradual changes towards a more egalitarian division over multiple generations (Bianchi et al. 2012; Ciccia and Bleijenbergh 2014; England 2010). For example, findings for first births show that a gender gap in unpaid labor that was not present before the birth emerges immediately after entering parenthood, even among couples with egalitarian values (Nitsche and Grunow 2016; Yavorsky, Kamp Dush, and Schoppe-Sullivan 2015). Reserved paternity leave for fathers has been shown to increase fathers' engagement with their children (Cools, Fiva, and Kirkeboen 2015; Wray 2020) and reduce the mental health costs of childbearing (Persson and Rossin-Slater 2019). However, these changes are often short-lived and depend on the relative duration and type of reserved paternity leave (Bünning 2015; Schober and Zoch 2019). Finally, unemployment has been associated with a reallocation of housework to the unemployed spouse, but wives tend to show a much larger increase in housework hours than husbands following unemployment (Dernberger and Pepin 2020; McMunn et al. 2020; Nitsche and Grunow 2018; Scarborough, Sin, and Risman 2019). The lockdown and the ensuing pandemic recession combined many of these changes with the unexpected and new experience of lockdown and confinement.

In this study we ask, first, how the gender division of housework changed with the first lockdown in March 2020; and second, whether the observed changes persisted when the first lockdown measures were lifted, or if couples quickly reverted to the gender division of housework observed before the national lockdown in March 2020. By September 2020 lockdown rules had been eased and most schools had re-opened. This allows us to explore whether men's increased involvement in the home that was noted early on in the pandemic persisted (Sevilla and Smith 2020), or whether, as families adjusted to the new circumstances and children went back to school, there was a reversion to old patterns. We compare couples without dependent children in the household (i.e., without children below 16 years old) with couples who have a youngest child aged between 0–5 years old and with couples with school-age children. We expect the shock to be greater for couples with children, who experienced the largest rise in care demands.

2. Data and methods

2.1 Data

To assess changes in the gender division of housework following the simultaneous public intervention of lockdown and closure of schools and childcare facilities, we use data from the Understanding Society COVID-19 study, an online longitudinal study consisting of a total of 8 waves (the monthly waves of April 2020, May 2020, June 2020, July 2020, and the bimonthly waves of September 2020, November 2020, January 2021, and March 2021). This type of longitudinal study allows us to observe the evolution of effects at short intervals, unlike most previous studies that collected data on a single post-shock effect. This study follows a randomly selected subsample of the UK Household Longitudinal Study (UKHLS), itself a probability sample, and asks respondents about their experiences during the COVID-19 pandemic (Institute for Social and Economic Research 2021). We link the data from this survey to wave 9 of the mainstage UKHLS survey fielded in 2019 (Institute for Social and Economic Research 2020), which was used to draw the COVID-19 subsample. Although this data corresponds to a random sample of UK households, thus allowing for reliable population inference, it has sample size limitations for some subgroup analyses; for example, by racial–ethnic groups. The information on partners in a household were linked with respondents’ personal IDs and partners’ IDs.

We use data from the April, May, June, and September 2020 COVID-19 waves of the Understanding Society COVID-19 study, because the July and November 2020 COVID-19 waves did not incorporate information on the division of housework, and the 2021 COVID-19 waves correspond to a period of renewed lockdown when schools were closed again. The COVID-19 waves further include the most up-to-date information on each person based on the most recent UKHLS-wave prior to the first lockdown, which provides our reference values. We restrict the analysis to opposite-gender couples of prime working age (between 24–54 years old) who were living together in the April 2020 COVID-19 wave and remained together as a couple, and whose household ID variable did not change between the last UKHLS wave and the first COVID-19 wave in April 2020.

Table 1: Description of variables used in the study

Variable	Description	Wave
Age	Age in years	Baseline
Race – ethnicity	Ethnic group: White (=1), Black, Asian, and other minority ethnic groups (=0), derived by UKHLS.	Baseline
Education	Highest obtained qualification recoded into two categories: (a) A-Level, GCSE or lower (=0), and (b) degree or higher (=1).	Baseline
Employment status	We define four employment categories (i.e., employed, working from home; employed, at work; out of the labor force; and furloughed) based on questions about employment status, working from home, and an additional question on whether they had been furloughed.	Baseline, April, May, June, July, and September
Working hours	How many hours did you work, as an employee or self-employed, last week?	Baseline, April, May, June, July, and September
Share of total household paid hours worked by men	We added up the number of hours that both partners work in paid employment and computed the percentage of that total that is done by men.	Baseline, April, May, June, July, and September
Net pay	Net monthly income of each partner, combining net income question with information on which period income refers to.	Baseline, April, May, June, July, and September
Age of youngest child in household	We took the youngest age of all children below 16 years in the household and divided couples into two categories: youngest child 0–5 years and youngest child 6–15 years. When no child was present, couples were classified as without children living at home.	Baseline
Marital status	What is your de facto marital status? (Married or living in a civil partnership/as a couple).	Baseline
Housework hours	For each partner: How much time did you spend on housework, such as time spent cooking, cleaning, and doing the laundry?	Baseline, April, May, June, and September
Share of total housework in household done by women	We added the number of hours spent on housework by women and men and computed the share corresponding to the women.	Baseline, April, May, June, and September
Childcare time	For each partner: About how many hours did you spend on childcare or homeschooling last week? The answers to these questions were in ranges of hours per week (i.e., 0–4, 5–9, 10–19, 20–34 35–49, 50–99, 100 or more).	Baseline, April, May, June, and September
Couple employment typology	Based on each partner's type of employment, we computed the following typology: Both full-time; Both OLF; Both part-time; Man part-time, woman full-time; Man paid work, woman housework; Woman part-time, man full-time; and Woman paid work, man housework.	Baseline, April, May, June, July, and September

Note: Own elaboration based on the UKHLS and COVID-19 studies.

We focus on the sample followed until the September 2020 COVID-19 wave, for which sample weights are available (Institute for Social and Economic Research 2021: 56–57; see also Jenkins 2008). Our final sample size is 2,077 couples who participated in all waves, out of an original sample of 3,055, with the difference due to sample attrition. Excluding couples for which one of the COVID-19 waves was skipped notoriously reduces sample size (Institute for Social and Economic Research 2021: 56–57; see also Jenkins 2008), and although panel attrition in this web survey is an important issue, sampling weights have been carefully adjusted to account for it (see Benzeval et al. 2021). Our final sample thus is a balanced panel with five time points. For our analyses we also computed unweighted estimates, and estimates on complete cases, which gave qualitatively similar results (available upon request).

2.2 Methods

We employ a fixed effects (FE) regression, comparing opposite-gender couples without children living at home to couples with a youngest child aged between 0–5 years and couples with a youngest child of school age, between 6–15 years old. This is expressed in the linear regression Equation (1):

$$Y_{ijt} = \alpha_i + \psi \times X_{ijt} + \beta_1 \times \tau_t + \beta_2 \times \delta_j + \beta_3 \times (\delta \times \tau)_{jt} + \varepsilon_{ijt} \quad (1)$$

where δ_j denotes whether couples have children and the children's age groups, and τ_t is a period indicator marking the period before the national lockdown in March 2020 (i.e., corresponding to the previous most recent information in the period 2018–2020 before the pandemic) and various following periods (April, May, June, and September 2020). We analyze how changes in the share of housework done by women vary across different types of couples using FE regression to adjust for individual time-invariant characteristics, as captured by the term α_i . In the case of panel attrition, which is present in our data, estimates obtained by FE are less biased than estimates obtained by pooling panel waves and using ordinary least squares (Lechner, Rodríguez-Planas, and Fernández Kranz 2016).

We further adjust this FE model for the following time-varying variables, X_{ijt} , during and after the first lockdown of March 2020: each partner's employment status (including on furlough, working from home, working at work, or out of the labor force), working hours, net pay, and childcare time in ranges of hours spent on childcare. Table 1 shows the definition, corresponding survey question, and operationalization of these variables. By design, all time-invariant characteristics in a FE model are dropped. We present estimates with and without adjustment for these time-varying variables – which are all potentially endogenous, given that couples' work and care decisions during the pandemic may be jointly determined (Harkness 2021). Our FE estimates capture the difference between couples without dependent children and couples with a child aged 0–5 years living at home or with a school-age child aged 6–15 years, at multiple time periods; and correspond to the estimates of the parameter β_3 in Equation (1), which compares the trajectory of women's share of housework followed by couples with children of different ages to the trajectory followed by couples without children. The latter might serve as an approximation of the unobserved trajectory of the share of housework that would have been observed for couples with children had schools and nurseries not closed. Although another comparison group would provide a different angle on the analyses, we believe that childless couples is the most informative group because lockdown is expected to have less effect on their division of housework. Our outcome variable corresponds to the inverse hyperbolic sine transformation of the share of

housework done by women in opposite-gender couples (*IHS*, Bellemare and Wichman 2020), which we denote by $IHS(s)$, and where s takes values between 0 and 1, $s \in [0,1]$. Analyses were performed in R version 4.0.5 and the following packages were used for estimating our FE models and the robust standard errors, respectively: *plm* v. 2.4-1 and *clubSandwich* v. 0.5.3 (Croissant and Millo 2019; Zeileis et al. 2020). In addition, some of the couples had missing information on key variables of interest. To avoid bias due to missing information, we performed multiple imputation on the 2,077 couples followed through the September 2020 COVID-19 wave, with 21 multiply imputed data sets and 10 iterations, employing sequential regression trees.

3. Results

Table 2 shows descriptive statistics for our sample at three selected time-points: the period before the national lockdown in March 2020, the first measurement during lockdown in April 2020, and September 2020. This shows no strong selection in terms of these observed characteristics. Working hours reduced substantially, especially during April 2020, but had largely recovered by September 2020 (Crossley, Fisher, and Low 2021). We also see a substantial increase in housework hours for both men and women in the April 2020 COVID-19 wave and a return to the levels observed before the first national lockdown by the September 2020 COVID-19 wave. We also observe changes in the proportion of women and men on furlough, increases in the share of those employed but working from home, and a reduction and then rise in the number of working hours. Finally, there was an important increase in the percentage of men and women providing any childcare hours in comparison to our reference values.

Table 2: Descriptive statistics for analytical sample

Variable	Statistic: mean (s.e.) or %	Baseline UKHLS wave	April 2020 COVID-19 wave	September 2020 COVID-19 wave
Woman's age	Mean (s.e.)	42.43 (0.43)	42.43 (0.43)	42.43 (0.43)
Man's age	Mean (s.e.)	44.81 (0.46)	44.81 (0.46)	44.81 (0.46)
Woman's race-ethnicity	White	91.82	91.82	91.82
	Black, Asian, Minority Ethnic	8.18	8.18	8.18
Man's race-ethnicity	White	92.3	92.3	92.3
	Black, Asian, Minority Ethnic	7.7	7.7	7.7

Table 2: (Continued)

Variable	Statistic: mean (s.e.) or %	Baseline UKHLS wave	April 2020 COVID-19 wave	September 2020 COVID-19 wave
Woman's education	A-Level, GCSE, or lower	46.7	46.7	46.7
	Degree or higher	53.3	53.3	53.3
Man's education	A-Level, GCSE, or lower	52.11	52.11	52.11
	Degree or higher	47.89	47.89	47.89
Woman's employment status	Employed, at work	69.76	29.18	49.54
	Employed, working from home	12.35	32.96	27.02
	OLF	17.89	18	19.66
	Furloughed	0	19.86	3.78
Man's employment status	Employed, at work	77.26	29.83	47.22
	Employed, working from home	13.11	33.99	31.41
	OLF	9.63	12.56	13.55
	Furloughed	0	23.62	7.82
Woman's working hours	Mean (s.e.)	24.56 (0.6)	16.84 (0.68)	22.2 (0.71)
Man's working hours	Mean (s.e.)	34.46 (0.56)	23.14 (0.77)	28.48 (0.73)
Share of household paid-labor hours worked by men	Mean (s.e.)	0.59 (0.01)	0.56 (0.01)	0.55 (0.01)
Woman's net pay	Mean (s.e.)	2124.45 (577.59)	3329.86 (1263.02)	2835.05 (779.42)
Man's net pay	Mean (s.e.)	3343.21 (800.74)	4132.79 (1060.57)	3521.33 (984.76)
Age of youngest child in household	Without children living at home	44.55	44.55	44.55
	Youngest child 0–5 years old	25.22	25.22	25.22
	Youngest child school-age 6–15 years old	30.23	30.23	30.23
Marital Status	Cohabiting	19.44	19.44	19.44
	Married	80.56	80.56	80.56
Woman's housework hours	Mean (s.e.)	12.53 (0.3)	15.47 (0.34)	13.55 (0.36)
Man's housework hours	Mean (s.e.)	6.67 (0.2)	9.81 (0.3)	8.29 (0.27)
Share of housework done by women	Mean (s.e.)	0.65 (0.01)	0.61 (0.01)	0.61 (0.01)

Table 2: (Continued)

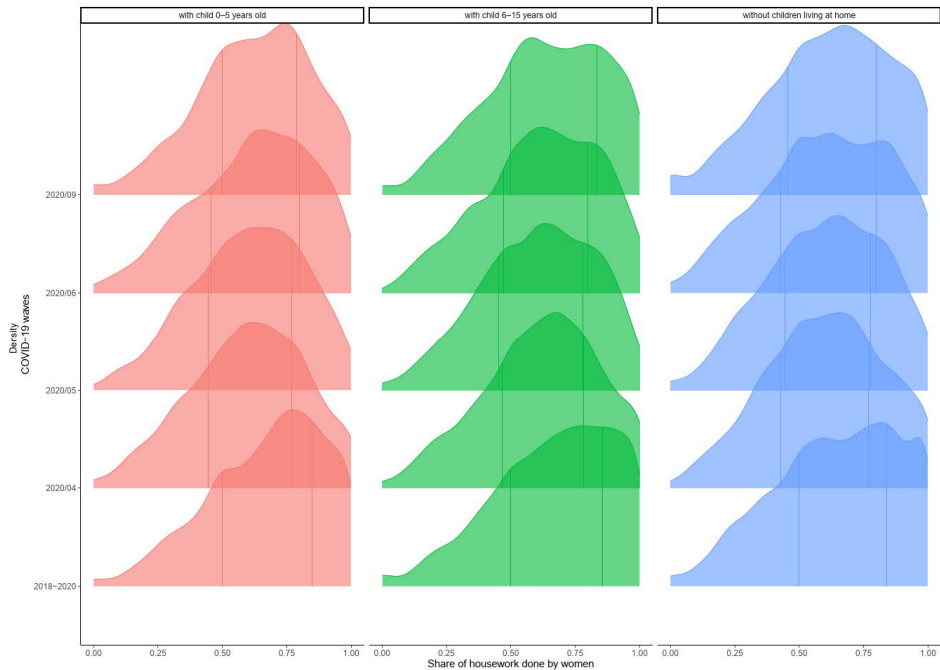
Variable	Statistic: mean (s.e.) or %	Baseline UKHLS wave	April 2020 COVID-19 wave	September 2020 COVID-19 wave
Woman's childcare hours	No childcare responsibilities	83.26	37.22	38.12
	0–4 hours per week	5.83	17.58	27.84
	5–9 hours per week	3.6	5.63	6.55
	10–19 hours per week	1.42	11.99	7.14
	20–34 hours per week	2	13.44	7.11
	35–49 hours per week	0.75	2.63	5.13
	50–99 hours per week	0.88	8.75	5.02
	100 or more	2.26	2.76	3.09
Man's childcare hours	No childcare responsibilities	87.01	39.03	39.14
	0–4 hours per week	5.81	27.07	32.26
	5–9 hours per week	3.13	7.12	8.62
	10–19 hours per week	1.62	9.68	9.82
	20–34 hours per week	0.81	8.95	5.21
	35–49 hours per week	0.49	4.49	2.68
	50–99 hours per week	0.48	2.89	1.56
	100 or more	0.64	0.78	0.72
Couple employment typology	Both full-time	30.11	13.52	20.42
	Both OLF	2.93	2.58	3.5
	Both part-time	8.26	21.44	14.13
	Man part-time, woman full-time	4.7	9.88	7.75
	Man paid work, woman housework	14.96	15.42	16.15
	Woman part-time, man full-time	32.35	27.18	28
	Woman paid work, man housework	6.7	9.99	10.05

Note: UKHLS and COVID-19 study. Own calculations. Weighted results.

Figure 1 shows ridged density plots of the share of housework done by women at baseline, and at each of the UKHLS COVID-19 surveys where housework hours were captured, and for the three types of couples, with two vertical lines marking the 25th and 75th percentiles of each distribution. These density plots show the change in the gender division of housework right after lockdown, and then the general pattern of return to reference levels. They further reveal that the immediate effect of the lockdown and school closures was a reduction in the women's share of housework and therefore a strong shift towards greater equality across the distribution. However, as we move further away from

the initial shock the distribution of the share of housework tends to return to the original left-skewed distribution. This reversion is more marked for couples with children, especially those with older children.

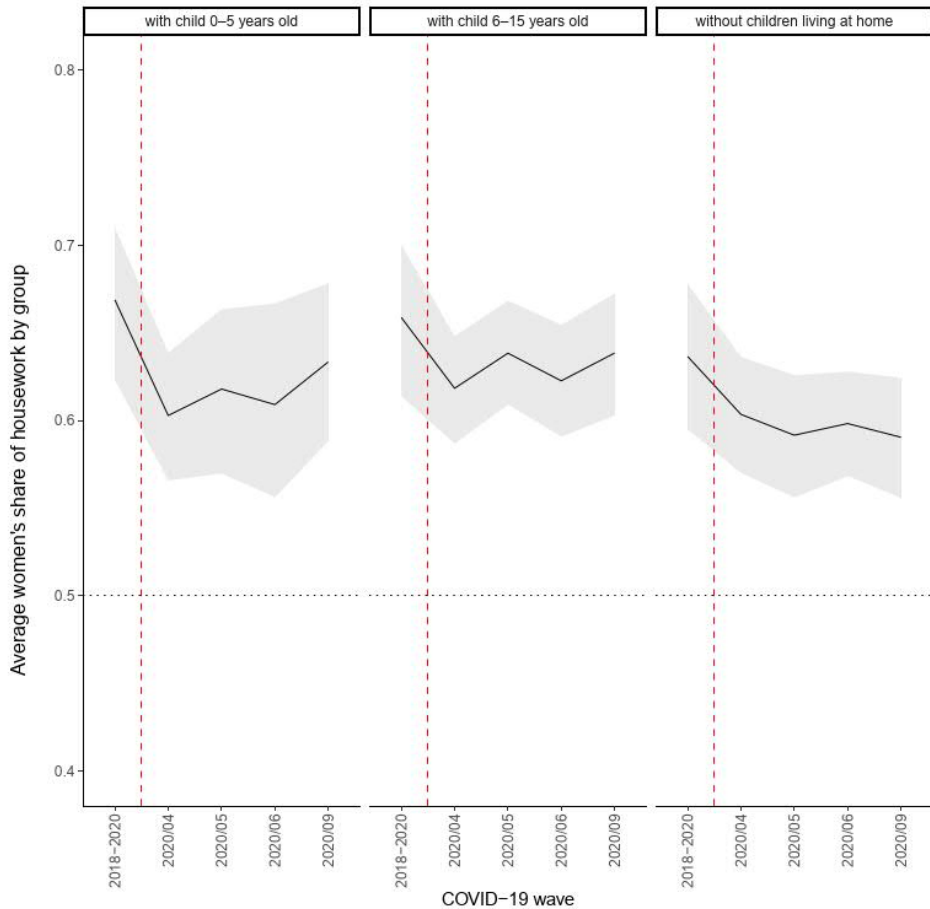
Figure 1: Changes in the distribution of women’s share of housework by couple group



Note: UKHLS and COVID-19 study. Own calculations. Weighted results. The y-axis shows the estimated Kernel density of the share of housework done by women at different time points. These were estimated employing a cross-validation bin-width selection method. The more traditional plug-in estimators (e.g., following Silverman’s rule of thumb) do not deviate much from this.

Those dynamics are further reflected in Figure 2, which tracks the change in the average women’s share of housework. Following the lockdown, women’s share initially declined for all types of couples but more noticeably for couples with a 0–5 year old, then slightly increased in the month of May and decreased again in June. However, by September 2020 the three groups had diverged: Couples with school-age children and couples with a 0–5 year old were already clearly retreating to a more traditional gender division of housework, though still below the reference levels before the national lockdown in March 2020.

Figure 2: Changes in the average share of housework by couple group



Note: UKHLS 10th and COVID-19 April, May, June and September COVID-19 waves. Own calculations. Weighted results.

Overall, these descriptive findings show a reduction in women’s share of housework for all household types during this period. These descriptive results do not adjust for potential time-invariant characteristics that may explain some of the differences between types of couples. Table 3 shows the estimates of our FE regressions for the two specifications discussed above, one further adjusting for time-varying characteristics. Couples with young children are more specialized than couples without children and

couples with school-age children. Couples with younger children saw the greatest changes in the gender division of housework towards more equity ($\exp(\beta_{3, April, No\ child} + \beta_{3, April, child\ 0-5\ yo}) - 1 = -5.10\%$ with $CI: [-12.0; 2.32]$), though all these changes are relatively small and with wide confidence intervals. Regarding the reverting tendencies seen in the descriptive results, initially the two groups followed a similar trend, but couples without children showed a longer-lasting trend towards a more equitable division of housework. By contrast, by September 2020, couples with children between 0–5 years were already tending towards the previous reference levels ($\exp(\beta_{3, Sept., No\ child} + \beta_{3, Sept., child\ 0-5\ yo}) - 1 = -3.08\%$ with $CI: [-9.28; 3.54]$), as well as couples with school-age children ($\exp(\beta_{3, Sept., No\ child} + \beta_{3, Sept., school\ age}) - 1 = -1.70\%$ with $CI: [-8.69; 5.82]$).

Table 3: Estimates of the FE regression, two specifications

	COVID-19 wave	Unadjusted			Adjusted		
		Estimate	[C.I.]	P-value	Estimate	[C.I.]	P-value
Without children living at home	2020/04	-0.023	[-0.054; 0.008]	0.138	-0.033	[-0.054; 0.008]	0.031
	2020/05	-0.038	[-0.064; -0.01]	0.009	-0.047	[-0.064; -0.01]	0.001
	2020/06	-0.033	[-0.061; -0.003]	0.031	-0.044	[-0.06; -0.003]	0.002
	2020/09	-0.043	[-0.0; -0.015]	0.004	-0.047	[-0.07; -0.015]	0.002
With child 0–5 years old	2020/04	-0.051	[-0.12; 0.023]	0.192	-0.041	[-0.12; 0.023]	0.762
	2020/05	-0.033	[-0.096; 0.034]	0.813	-0.022	[-0.096; 0.034]	0.293
	2020/06	-0.052	[-0.118; 0.019]	0.351	-0.045	[-0.118; 0.019]	0.983
	2020/09	-0.031	[-0.093; 0.035]	0.497	-0.018	[-0.093; 0.035]	0.144
With child 6–15 years old	2020/04	-0.028	[-0.1; 0.051]	0.850	-0.035	[-0.1; 0.051]	0.935
	2020/05	-0.016	[-0.076; 0.049]	0.196	-0.021	[-0.076; 0.049]	0.184
	2020/06	-0.029	[-0.093; 0.04]	0.826	-0.037	[-0.093; 0.04]	0.697
	2020/09	-0.017	[-0.087; 0.058]	0.233	-0.019	[-0.087; 0.058]	0.211

Note: UKHLS and COVID-19 study. Own calculations. Weighted results, unadjusted and adjusted by men and women's employment status, including furlough or working from home, their working hours (employing IHS), their respective time spent on childcare, and their net incomes (as well, employing IHS transformation). We exclude from the table the estimates of time-varying variables given that these are endogenous and lack proper interpretation.

Further adjustment for time-varying factors marginally changed the size of the coefficients, but not their direction. The fact that the changes over time across groups are not affected by this adjustment suggests that changes in the share of housework were mostly related to the life-course stage of couples, and not simply driven by labor market changes or closure of daycare and schooling facilities.

4. Discussion

This study highlights that lockdown measures may have lasting consequences for some families, but not for others. Although women's share of housework in the United Kingdom initially shifted towards greater equity, in a relatively short period of time it tended to shift back to the levels observed before the national lockdown in March 2020. Furthermore, this shift was seemingly faster for couples with school-age children and couples with a child aged 0–5 years in comparison to couples without children, for whom greater equity in the household has been more sustained. Therefore, how lockdown measures affected the gender division of housework at different stages of the pandemic depends on the presence of children and the life-course stage of the family. Although smaller children are much less able to keep themselves busy and were not offered online alternatives to the same extent as school-age children, we did find noticeable differences between couples with children at different developmental stages. However, our results are consistent with the stronger specialization of housework among new mothers (Harkness, Borkowska, and Pelikh 2019), who are more likely to reduce their working hours than fathers.

Overall, the often debated and feared re-traditionalization of women's role in family life under lockdown (Beaujouan 2021: 11) did not appear to take place in the United Kingdom. However, in absolute terms women did more, not less, housework during the pandemic. Therefore, our findings are consistent with the fact that women's share of housework primarily declined because men temporarily contributed more housework while on furlough or working from home (Sevilla and Smith 2020). Work hours, earnings, working from home, and childcare arrangements are important explanatory factors for the dynamic adjustment of the division of housework. However, given that lockdown measures also affected these by destabilizing the labor market and the provision of school and childcare, we cannot disentangle their relative importance for explaining changes in the gender division of housework. Couples had to make decisions about work and care, and mothers have tended to reduce work hours to take up the extra burden of care. For example, the Coronavirus Job Retention Scheme (CJRS) was effective in keeping both men and women on furlough and protecting their jobs (Harkness 2021). Thus, working hours or couple employment typologies were also affected by the onset of the lockdown.

Our study highlights the need for a dynamic perspective on changes in family life during the pandemic, going beyond simple before-and-after comparisons that may obscure important changes occurring over shorter time intervals. Other studies based on time-use data showed similar immediate effects of the lockdown (Andrew et al. 2020), but these studies do not capture longer-term dynamics or changes in short time intervals. However, our study has several limitations. Measurement error in self-reported

housework hours is well-known. Although some studies suggest bias to be important (Bryant et al. 2004), others consider that stylized measures as dependent variables may not necessarily lead to wrong conclusions (Kan and Pudney 2008). In our case, the bias should be similar across waves and would not affect the dynamics described here. Some selection and attrition bias in our study is likely but should at least be alleviated by the re-weighting of the sample (Crossley, Fisher, and Low 2021). Further work could explore whether work and family demands, as well as extra housework, have led to a temporary or enduring decrease in the mental health of women with families (Hiekel and Kühn 2021; Xue and McMunn 2021), as recent findings suggest the mental load of household labor falls largely on women (Daminger 2019).

Some studies have similarly found that the early shocks of lockdown measures pushed the gender division of housework or childcare towards more equity, in the United States (Carlson, Petts, and Pepin 2020), Canada (Shafer, Scheibling, and Milkie 2020), France (Domínguez-Folgueras 2021), Germany (Boll, Müller, and Schüller 2021; Kreyenfeld and Zinn 2021; Zoch, Baechmann, and Vicari 2021), and Italy (Jessen et al. 2021). However, other studies find increases in inequality in Italy (Boca et al. 2021; Meraviglia and Dudka 2021), Israel (Yaish, Mandel, and Kristal 2021), Germany (Hipp and Bünning 2021), and Argentina (Costoya et al. 2021). Methodological differences may explain these divergent findings in part. Some of these studies adopted an individual-level perspective (Boca et al. 2021; Hipp and Bünning 2021), whereas others (Boll, Müller, and Schüller 2021; Carlson, Petts, and Pepin 2020) favored a couple perspective, as we did. Additionally, some studies are based on probabilistic samples, building on previous larger panels, as opposed to studies based on non-probabilistic or convenience samples, and effect sizes tend to be smaller in the former and larger in the latter. In general, the extent to which the levels and trends observed for the United Kingdom apply to other countries will depend on the details of the lockdown policies and the ensuing economic recession. For example, effects may depend on long-term structural and normative conditions concerning women's and men's paid and unpaid labor (Qian and Hu 2021), which differ across welfare state contexts (Brini et al. 2021).

However, despite the differences in the studies, the overall conclusion is that changes in the gender division of labor were small and temporary and that the underlying dynamics of gender inequality remained in place. Our results suggest that in the United Kingdom the gender division of housework was only altered temporarily, as has also been found for Germany in the study whose data and methodological approach most resembles ours (Boll, Müller, and Schüller 2021). Occupational gender segregation and the associated prevalence of men and women being on furlough, in essential occupations, or self-employed will alter time availability and thereby gendered contributions to housework (Graeber, Kritikos, and Seebauer 2021). In addition, couples' reliance on public versus private childcare provision might also be important for the gender division

of housework, as in most countries private care was not as uniformly shut down during lockdown, and there were important differences by country in school and nursery closure schemes. Further cross-national comparative analyses would allow us to test the generalizability of trends in the gender division of housework in the United Kingdom during the pandemic in different contexts, and will depend on the availability of data on short time intervals.

6. Acknowledgements



NORFACE
NETWORK

The authors gratefully acknowledge funding from the project EQUALLIVES, which is financially supported by the NORFACE Joint Research Programme on Dynamics of Inequality Across the Life-course, which is co-funded by the European Commission through Horizon 2020 under grant agreement No 724363.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 724363.

Research for this contribution is part of the Cluster of Excellence "Contestations of the Liberal Script" (EXC 2055, Project-ID 390715649), funded by the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation) under Germany's Excellence Strategy.

This work was supported by the Economic and Social Research Council ES/S012486/1.

References

- Adams-Prassl, A., Boneva, T., Golin, M., and Rauh, C. (2020). Inequality in the impact of the coronavirus shock: Evidence from real time surveys. *Journal of Public Economics* 189: 104245. doi:10.1016/j.jpubeco.2020.104245.
- Andrew, A., Cattan, S., Costa Dias, M., Farquharson, C., Kraftman, L., Krutikova, S., Phimister, A. et al. (2020). How are mothers and fathers balancing work and family under lockdown? *IFS Briefing Note BN290*.
- Andrew, A., Cattan, S., Dias, C., Farquharson, C., Kraftman, L., Krutikova, S., Phimister, A., and Sevilla, A. (2020). How are mothers and fathers balancing work and family under lockdown? *IFS Briefing Note BN290*. <https://ifs.org.uk/publications/14860>.
- Andrew, A., Cattan, S., Dias, C., Farquharson, C., Kraftman, L., Krutikova, S., Phimister, A., and Sevilla, A. (2020). Parents, especially mothers, paying heavy price for lockdown. London: Institute for Fiscal Studies. <https://ifs.org.uk/publications/14861>.
- Beaujouan, E. (2021). Covid-19 global demographic research needs? Replacing speculative commentaries with robust cross-national comparisons. In: MacKellar, L. and Friedman, R. (eds.). *Covid-19 and the global demographic research agenda*. New York: Population Council: 8–14. doi:10.31899/pdr1.1001.
- Bellemare, M. and Wichman, C. (2020). Elasticities and the inverse hyperbolic sine transformation. *Oxford Bulletin of Economics and Statistics* 82(1): 50–61. doi:10.1111/obes.12325.
- Benzeval, M., Burton, J., Crossley, T., Fisher, P., Gardiner, C., Jackle, A., and Moore, J. (2021). High frequency online data collection in an annual household panel study: some evidence on bias prevention and bias adjustment. (Understanding Society Working Paper Series).
- Bianchi, S., Sayer, L., Milkie, M., and Robinson, J. (2012). Housework: Who did, does or will do it, and how much does it matter? *Social Forces* 91(1): 55–63. doi:10.1093/sf/sos120.
- Boca, D., Oggero, N., Profeta, P., and Rossi, M. (2021). Did COVID-19 affect the division of labor within the household? Evidence from two waves of the pandemic in Italy. (CESifo Working Paper). doi:10.2139/ssrn.3870183.

- Boll, C., Müller, D., and Schüller, S. (2021). Neither backlash nor convergence: Dynamics of intracouple childcare division after the first COVID-19 lockdown and subsequent reopening in Germany. (CESifo Working Paper). doi:10.2139/ssrn.3849869.
- Brini, E., Lenko, M., Scherer, S., and Vitali, A. (2021). Retraditionalisation? Work patterns of families with children during the pandemic in Italy. *Demographic Research* 45(31): 957–972. doi:10.4054/DemRes.2021.45.31.
- Bryant, W., Kang, H., Zick, C., and Chan, A. (2004). Measuring housework in time use surveys. *Review of Economics of the Household* 2(1): 23–47. doi:10.1023/B:REHO.0000018021.36768.37.
- Bünning, M. (2015). What happens after the daddy months? Father’s involvement in paid work, childcare, and housework after taking parental leave in Germany. *European Sociological Review* 31(6): 738–748. doi:10.1093/esr/jcv072.
- Carlson, D., Petts, R., and Pepin, J. (2020). Changes in parents’ domestic labor during the COVID-19 pandemic. SocArXiv. doi:10.31235/osf.io/jy8fn.
- Ciccía, R. and Bleijenbergh, I. (2014). After the male breadwinner model? Childcare services and the division of labor in European countries. *Social Politics* 21(1): 50–79. doi:10.1093/sp/jxu002.
- Cools, S., Fiva, J., and Kirkeboen, L. (2015). Causal effects of paternity leave on children and parents. *The Scandinavian Journal of Economics* 117(3): 801–828. doi:10.1111/sjoe.12113.
- Costoya, V., Echeverría, L., Edo, M., Rocha, A., and Thailinger, A. (2021). Gender gaps within couples: Evidence of time re-allocations during COVID-19 in Argentina. *Journal of Family and Economic Issues* 1–14. doi:10.1007/s10834-021-09770-8.
- Croissant, Y., and Millo, G. (2019). *Panel data econometrics with R*. Wiley Online Library. doi:10.1002/9781119504641.
- Crossley, T., Fisher, P., and Low, H. (2021). The heterogeneous and regressive consequences of COVID-19: Evidence from high quality panel data. *Journal of Public Economics* 193: 104334. doi:10.1016/j.jpubeco.2020.104334.
- Daminger, A. (2019). The cognitive dimension of household labor. *American Sociological Review* 84(4): 609–633. doi:10.1177/0003122419859007.
- Dernberger, B.N. and Pepin, J. (2020). Gender flexibility, but not equality: Young adults’ division of labor preferences. *Sociological Science* 7: 36–56. doi:10.15195/v7.a2.

- Domínguez-Folgueras, M. (2021). Difficult times: The division of domestic work under lockdown in France. *Social Sciences* 10(6): 219. doi:10.3390/socsci10060219.
- England, P. (2010). The gender revolution: Uneven and stalled. *Gender and Society* 24(2): 149–166. doi:10.1177/0891243210361475.
- Graeber, D., Kritikos, A., and Seebauer, J. (2021). COVID-19: A crisis of the female self-employed. *Journal of Population Economics* 34: 1141–1187. doi:10.1007/s00148-021-00849-y.
- Harkness, S. (2021). Update: How is the response to coronavirus affecting gender equality? Economics Observatory <https://www.economicsobservatory.com/update-how-is-the-response-to-coronavirus-affecting-gender-equality>.
- Harkness, S., Borkowska, M., and Pelikh, A. (2019). Employment pathways and occupational change after childbirth. Government Equalities Office.
- Hiekel, N. and Kühn, M. (2021). Mental health before and during the COVID-19 pandemic: The role of partnership and parenthood status in growing disparities between types of families. (MPIDR Working Paper WP-2021-013). doi:10.4054/MPIDR-WP-2021-013.
- Hipp, L. and Bünning, M. (2021). Parenthood as a driver of increased gender inequality during COVID-19? Exploratory evidence from Germany. *European Societies* 23(sup1): S658–S673. doi:10.1080/14616696.2020.1833229.
- Hupkau, C. and Petrongolo, B. (2020). Work, care and gender during the covid-19 crisis. *Fiscal Studies* 41(3): 623–651. doi:10.1111/1475-5890.12245.
- Institute for Social and Economic Research (2020). *Understanding Society: COVID-19 Study, 2020. [data collection]. 7th Edition*. Colchester: University of Essex.
- Institute for Social and Economic Research (2021). *Understanding Society COVID-19 User Guide. Version 7.0*. Colchester: University of Essex. <https://www.understandingsociety.ac.uk/sites/default/files/downloads/documentation/covid-19/user-guides/covid-19-user-guide.pdf>.
- Jenkins, S. (2008). *Marital splits and income changes over the longer term*. (Changing relationships 217). Abingdon: Taylor and Francis.
- Jessen, J., Spiess, K., Waights, S., and Wrohlich, K. (2021). Sharing the caring? The gender division of care work during the covid-19 pandemic in Germany. (IZA Discussion Paper). doi:10.2139/ssrn.3870188.

- Kan, M. and Pudney, S. (2008). Measurement error in stylized and diary data on time use. *Sociological Methodology* 38(1): 101–132. doi:10.1111/j.1467-9531.2008.00197.x.
- Kreyenfeld, M. and Zinn, S. (2021). Coronavirus and care: How the coronavirus crisis affected fathers' involvement in Germany. *Demographic Research* 44(4): 99–124. doi:10.4054/DemRes.2021.44.4.
- Lechner, M., Rodríguez-Planas, N., and Fernández Kranz, D. (2016). Difference-in-difference estimation by FE and OLS when there is panel non-response. *Journal of Applied Statistics* 43(11): 2044–2052. doi:10.1080/02664763.2015.1126240.
- McMunn, A., Bird, L., Webb, E., and Sacker, A. (2020). Gender divisions of paid and unpaid work in contemporary UK couples. *Work, Employment and Society* 34(2): 155–173. doi:10.1177/0950017019862153.
- Meraviglia, C. and Dudka, A. (2021). The gendered division of unpaid labor during the covid-19 crisis: Did anything change? Evidence from Italy. *International Journal of Sociology* 51(1): 64–75. doi:10.1080/00207659.2020.1832346.
- Nitsche, N. and Grunow, D. (2016). Housework over the course of relationships: Gender ideology, resources, and the division of housework from a growth curve perspective. *Advances in Life Course Research* 29: 80–94. doi:10.1016/j.alcr.2016.02.001.
- Nitsche, N. and Grunow, D. (2018). Do economic resources play a role in bargaining child care in couples? Parental investment in cases of matching and mismatching gender ideologies in Germany. *European Societies* 20(5): 785–815. doi:10.1080/14616696.2018.1473626.
- Persson, P. and Rossin-Slater, M. (2019). *When dad can stay home: Fathers' workplace flexibility and maternal health*. (NBER Working Paper Series). Cambridge, MA: National Bureau of Economic Research. doi:10.3386/w25902.
- Qian, Y. and Hu, Y. (2021). Couples' changing work patterns in the United Kingdom and the United States during the COVID-19 pandemic. *Gender, Work and Organization* 28(S2): 535–553. doi:10.1111/gwao.12661.
- Scarborough, W., Sin, R., and Risman, B. (2019). Attitudes and the stalled gender revolution: Egalitarianism, traditionalism, and ambivalence from 1977 through 2016. *Gender and Society* 33(2): 173–200. doi:10.1177/0891243218809604.

- Schober, P. and Zoch, G. (2019). Change in the gender division of domestic work after mothers or fathers took leave: exploring alternative explanations. *European Societies* 21(1): 158–180. doi:10.1080/14616696.2018.1465989.
- Sevilla, A., and 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. doi:10.1093/oxrep/graa027.
- Shafer, K., Scheibling, C., and Milkie, M. (2020). The division of domestic labor before and during the COVID-19 pandemic in Canada: Stagnation versus shifts in fathers' contributions. *Canadian Review of Sociology/Revue canadienne de sociologie* 57(4): 523–549. doi:10.1111/cars.12315.
- Wray, D. (2020). Paternity leave and fathers' responsibility: Evidence from a natural experiment in Canada. *Journal of Marriage and Family* 82(2): 534–549. doi:10.1111/jomf.12661.
- Xue, B. and McMunn, A. (2021). Gender differences in unpaid care work and psychological distress in the UK Covid-19 lockdown. *PloS One* 16(3): e0247959. doi:10.1371/journal.pone.0247959.
- Yaish, M., Mandel, H., and Kristal, T. (2021). Has the economic lockdown following the Covid-19 pandemic changed the gender division of labor in Israel? *Gender and Society* 35(2): 256–270. doi:10.1177/08912432211001297.
- Yavorsky, J.E., Kamp Dush, C., and Schoppe-Sullivan, S. (2015). The production of inequality: The gender division of labor across the transition to parenthood. *Journal of Marriage and Family* 77(3): 662–679. doi:10.1111/jomf.12189.
- Zeileis, A., Lumley, T, Berger, S., Graham, N., and Zeileis, A. (2020). Package 'sandwich'.
- Zoch, G., Baechmann, A.C., and Vicari, B. (2021). Who cares when care closes? Care-arrangements and parental working conditions during the COVID-19 pandemic in Germany. *European Societies* 23(sup1): S576–S588. doi:10.1080/14616696.2020.1832700.