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Temporary Egalitarian Shift, Persistent Inequality: Intra-Couple Childcare Dynamics during the COVID-19 Pandemic in Germany

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Abstract

Drawing on unique (bi)monthly panel data (IAB-HOPP) that span the immediate post-lockdown months of June to August 2020 and extend through the period before the second lockdown in January/February 2021, we reevaluate competing claims about whether the Covid-19 crisis in Germany expanded or narrowed gender disparities in parental childcare. Using the pre-pandemic allocation as a baseline, we focus on developments over time rather than isolated moments. The evidence points to a modest early move toward a more balanced childcare split, but this trend weakened in the following months. Given the comparatively "traditional'' childcare distribution before Covid-19, the lockdown shock proved far from sufficient to equalize responsibilities. Subgroup analyses based on work conditions specific to the lockdown reveal that the observed adjustments were mainly driven by mothers with comparatively strong labor market ties who were unable to work remotely. Fathers' work settings, by contrast, appear largely irrelevant. We infer that the shift stemmed from short-term necessity instead of newfound opportunity, suggesting it would diminish as pressures ease. Moreover, changes were visible only when fathers had previously taken part in childcare to some degree, underscoring the importance of initial household arrangements.

Keywords: Covid-19, Intra-couple allocation of unpaid labor, Childcare, Gender, Remote work, IAB-HOPP

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Introduction

Ongoing initiatives to foster gender equity in broader society—and the prominent discussion about digitalization as a potential equalizer during and after the pandemic—stand in notable contrast to the enduring gender imbalances within households. Unequal childcare duties are especially salient because childcare—unlike domestic chores—offers little potential for postponement, scaling, or substitution. Simultaneously, closures of daycares and schools placed exceptional strain on parents of younger children during the pandemic. Regarding how Covid-19 influenced couples' childcare arrangements, scholarly debate centers on two opposing perspectives: a "convergence'' view and a "backlash'' view. Some anticipate that a substantial group of employed fathers might gain exposure to family-care responsibilities at home and subsequently raise their contributions in the long run [1-3]. Others warn of a strong return to traditional divisions of labor [4-6]. Empirical studies from various countries so far report minimal or no increases in fathers' share of unpaid labor [7-15]. Yet most of this research captures only short-term lockdown circumstances, frequently omitting differences across individuals and pre-Covid baselines. Our work adds to this literature by analyzing medium-run post-lockdown developments in Germany up to the second, less stringent Covid-19 lockdown in late 2020 and early 2021. We also explore how work-from-home opportunities for mothers and fathers shaped these developments.

Germany offers a noteworthy setting for such an investigation. Compared with other continental-European corporatist welfare states such as France or Belgium, its institutional design places stronger emphasis on within-family caregiving (see e.g. Misra and Moller [16]). This is particularly evident in joint taxation and free co-insurance of non-working or marginally employed spouses in the public health insurance system, both of which reduce women's employment incentives (Jaumotte [17]; Bettio and Verashchagina [18]). In addition, gender norms still diverge between the former East and West, with the eastern states maintaining less traditional attitudes [19-21] and weaker adherence to the (modernized) male-breadwinner model [22, 23]. These differences become especially visible when children are present in the home. The employment gap between fathers and mothers is 19.4 (11.4) percentage points in the western (eastern) regions [24].

This study introduces new empirical insights into how the Covid-19 pandemic shaped medium-run developments in how couples allocate childcare. Drawing on theoretical perspectives on bargaining within couples, the study offers three key contributions. First, it takes the pre-pandemic childcare split as the benchmark, enabling us to trace behavioral adjustments across time. Second, by using a high-frequency panel, we examine not only how quickly these patterns evolve but also how persistent they remain for roughly five months after the initial lockdown—up to August 2020—and further into the phase preceding the second, more moderate, Covid-19 lockdown in early 2021. Third, we are able to explore how work situations specific to the lockdown period affected mothers and fathers differently.

Our analysis relies on unique monthly panel data covering the gradual reopening phase after Germany's first Covid-19 lockdown in spring 2020 through August. In a sample of 1078 parents, we detect only a minor and short-lived increase in fathers' childcare involvement. Extending the panel through the period leading up to the second Covid-19 lockdown shows that couples had generally reverted to their pre-pandemic childcare allocation between the two lockdowns, while another slight shift reappeared in January/February 2021. The primary source of the initial change is mothers with comparatively strong labor market attachment who lack the option to work remotely. Fathers' work setups, by contrast, exhibit no meaningful effect, implying that the observed (and small) change was driven by necessity—because mothers were constrained—rather than by newfound opportunities for fathers. This helps explain why such changes fade once the pressure diminishes. Additionally, a shift occurs only in households where fathers already had some childcare role before Covid-19, highlighting the importance of pre-existing arrangements. Overall, our findings align with neither the 'backlash' nor the 'convergence' scenarios under discussion. Instead, they reveal a pronounced stability in couples' childcare patterns, underscoring how strongly these patterns depend on pre-pandemic starting points.

The paper proceeds as follows: Sect. 2 outlines theoretical frameworks and summarizes empirical evidence on intra-couple childcare allocation, forming hypotheses for the pandemic context; Sect. 3 presents the data, sample construction and variables; Sect. 4 explains the empirical strategy; Sect. 5 provides the findings and interpretation. The last section concludes.

Theories on Intra-Couple Childcare Division and Empirical Findings

The established literature attributes the allocation of household labor within couples to three broad mechanisms: time constraints, relative resources and gender. The time-based explanation, rooted in the 'time availability' perspective [25], asserts that greater engagement in paid work reduces the capacity for unpaid tasks. This framework stresses path dependence and adjustment inertia arising from routine behavior and the costs of altering established work patterns (e.g., through new employment contracts). Partners' relative earnings and productivity in market versus domestic spheres, corresponding to the unitary New Home Economics tradition [26], determine comparative advantage. Cooperative bargaining models (e.g. McElroy and Horney [27]; Manser and Brown [28]) reach similar predictions by arguing that higher human capital enhances a partner's bargaining position when renegotiating unpaid labor. Theories of 'doing gender' emphasize gender as a continual social performance embedded in everyday interaction [29, 30].

These theoretical strands inform both sides of the current Covid-19 debate—those anticipating a 'backlash' and those expecting 'convergence'. Supporters of the backlash view argue that dominant norms will push women to absorb the "sudden spike in childcare needs" [1], leading even formerly egalitarian couples toward more traditional divisions (similarly: Kohlrausch and Zucco [5]). Early German survey evidence indicates that employed mothers scaled back their paid work more sharply than fathers in order to cover additional childcare demands [31], and that mothers working from home devoted more hours to childcare than teleworking fathers [32]. As a result, mothers reported higher levels of stress related to childcare than both before the pandemic and relative to fathers [33]. Time constraints and economic considerations also help explain these patterns: women experienced more pronounced job losses during the crisis [34], and marginal employment—'Minijobs,' dominated by women—declined sharply [35]. Depending on household finances, some women may opt out of job searching once the economy recovers if their earnings are not strictly necessary [36]. Given persistent gender norms and intermittent employment histories, women continue to lag in career advancement and wages [37]. This makes it economically understandable that, in certain households, mothers take over additional childcare responsibilities.

Survey findings from the first Covid-19 lockdown show, conversely, that fathers also increased the amount of time they spent with their children [12, 38, 39] and that a larger proportion of fathers—and a smaller proportion of mothers—identified

themselves as the main caregiver compared to before the pandemic [5]. These observations underpin the 'convergence notion,' implying that greater paternal involvement might help reduce gender disparities in childcare. This outlook is additionally fueled by the fact that women occupy a majority of system-relevant occupations that cannot be carried out remotely. In health and social services, for instance, 77% of workers are women [40]. Using SOEP 2018 data, roughly 16 percent of couples fall into the category where only the mother is employed in a system-relevant position [41]. It is precisely this household constellation—"where the father is able/forced to work from home during the crisis, while the mother is not"—that Alon *et al.* [1] consider most likely to generate notable adjustments in the division of labor within couples. Still, although anticipating increases in fathers' involvement, the authors acknowledge that such changes may not last [1].

We contend that the structural and normative elements embedded in the three theoretical perspectives mentioned earlier (partners' income ratios, available time, and gender norms) heavily influence the pre-pandemic childcare arrangements that couples start from. Accordingly, forming expectations about post-pandemic behavioral change requires accounting for these baseline constellations. Because normative evolution is slow, we do not expect substantial—nor measurable—shifts in gender norms within the timeframe of our study. Furthermore, behavioral adaptation, such as embracing new intra-couple role distributions, may involve symbolic or financial costs (see e.g. Caspi and Moffitt [42]). Fathers may avoid such costs by framing their additional childcare duties as short-term "emergency care," ending once daycares and schools reopen. Hence, it is not self-evident—either immediately or in the medium run—that fathers' care will increase when their prior involvement was minimal ('convergence notion'), nor that it will decline in households that were more egalitarian beforehand ('retraditionalization notion'). The discussed theories suggest that notable and enduring changes require substantial and lasting modifications to the couple's structural conditions, namely relative time and income resources.

Hypotheses

The first of our three hypotheses concerns the distinctive nature of childcare, whereas the second and third stem directly from the notion that partners' relative resources—before and during the pandemic—influence the gendered allocation of childcare afterward:

H1. (Childcare specificity)

Because childcare is less flexible in timing and harder to scale down than other unpaid tasks, we expect the childcare distribution between mothers and fathers to exhibit stronger reactions than other types of unpaid domestic labor.

H2. (Prepandemic conditions)

The greater the gender imbalance in childcare before Covid-19, the lower the likelihood and durability of any subsequent changes, ceteris paribus. This also implies that previously egalitarian couples should exhibit little or no adjustment in their childcare division.

H3. (Change in relative resources during the pandemic)

In the short term, weaker labor market involvement (employment status, working hours) and the ability to work remotely during the lockdown expand available time resources, which should relate to shifts in how childcare is shared if parents' relative time budgets change. For any shift to persist, a long-lasting alteration in relative resources would be required.

This study offers three main advances to existing research.

First, whereas much of the prior work captures only isolated moments from the pandemic period, our analysis uses couples' childcare arrangements *before* Covid-19 as a baseline and incorporates unobserved individual differences. This allows us to trace developments across time and to assess whether patterns moved toward renewed traditional roles or toward greater equality.

Second, the use of high-frequency panel data—spanning the phased reopening following Germany's initial Covid-19 shutdown through August 2020 (and, for robustness, additional waves through January/February 2021)—enables an assessment of whether short-term behavioral changes persisted beyond the acute crisis. Although a few papers also consider initial conditions and unobserved heterogeneity (e.g., Farré *et al.* [11]; Biroli *et al.* [8]), their observation windows end with the first lockdown.

Third, we analyze how work arrangements specific to the lockdown period—especially the opportunity to work from home—affected mothers and fathers. Earlier contributions on remote work (e.g., Hank and Steinbach [12]; Derndorfer *et al.* [43]) do not simultaneously address the other two aspects mentioned above. To our knowledge, our study is the first to combine all three. The only comparable effort is Jessen *et al.* [44], yet their Winter 2020/21 data collection (November 2020 to April 2021) does not allow for the bi-monthly differentiation possible with the HOPP data. Our finer-grained data reveal a secondary, more modest adjustment in childcare division in January/February 2021, which is obscured in the aggregated data used by Jessen *et al.* [44]. Another distinction lies in the measurement of pre-pandemic arrangements: we rely on retrospective reports collected in June 2020, whereas Jessen *et al.* [44] use contemporaneous reports from the 2018/19 pairfam wave. Despite this procedural difference, the resulting distributions are notably alike.

Data, Sample and Variables

Data

To examine how labor division within German parent couples evolved after the first lockdown, we rely on data from the IAB High-Frequency Online Personal Panel (HOPP), a monthly online survey created by the Institute for Employment Research (IAB). The panel is designed to monitor how the Covid-19 crisis affects individuals engaged in the German labor market [45, 46]. Its sampling frame consists of 200,000 randomly drawn individuals from the Integrated Employment Biographies (IEB), which contain comprehensive records on employees liable to social insurance, registered unemployed persons, recipients of unemployment or welfare benefits, and job seekers. Consequently, HOPP reflects the working-age population in Germany. Information on stay-at-home caregivers (primarily mothers) is obtained through survey items dealing with the division of unpaid household work. Where respondents consented, survey data can also be linked to administrative records. The dataset and accompanying documentation are accessible internationally through the Research Data Centre (FDZ) of the German Federal Employment Agency (BA) at the IAB [47]. Our main analyses draw on the waves from May, June, July, and August 2020. Roughly 11,500 respondents—mostly those insured through employment—participated in at least one of these monthly rounds and provided information on changes in their work, family, and social situations during the pandemic. For additional robustness checks, we also consider the bimonthly waves from September/October 2020, November/December 2020, and January/February 2021. Participation declines over time, and the refreshment sample introduced in September/October 2020 cannot be used in the core analysis because it does not include information about the first lockdown or about pre-pandemic labor division. A further robustness test addressing potential effects of school holidays uses federal-state identifiers first collected in the November/December 2020 wave.

Sample

We limit our sample to couples with at least one child younger than 12, as this age group is classified as requiring childcare under the Infection Protection Act (§56, Abs.1a). Two primary subsamples are constructed. The first is an unbalanced panel comprising mothers and fathers interviewed in May and June 2020, yielding 2,676 person-period observations from 1,078 participants. The second is a balanced panel of 258 parents who responded in every wave from May through August, producing 1,032 person-period observations **(Table 1)**. When variables on lockdown-related work arrangements are included, the sample sizes adjust to 1,070 (unbalanced) and 256 (balanced) individuals. For the extended analysis incorporating longer-term developments, we add three additional HOPP waves, resulting in 1,147 (unbalanced) and 182 (balanced) respondents.

Table 1. Summary statistics

	Full sample		**Fathers (Unbalanced)**		**Fathers (Balanced)**		**Mothers (Unbalanced)**		**Mothers (Balanced)**	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Division of childcare between parents (continuous scale)	3.791	0.941	3.957	0.951	3.677	0.909	3.810	0.944	3.895	0.961
Division of childcare (dichotomous, in percent)										
(Almost) entirely by father	0.018	0.131	–	–	–	–	0.014	0.116	–	–
Mostly by father	0.051	0.220	–	–	–	–	0.056	0.230	–	–
Shared equally by both parents	0.309	0.462	–	–	–	–	0.308	0.462	–	–
Mostly by mother	0.366	0.482	–	–	–	–	0.351	0.477	–	–
(Almost) entirely by mother	0.256	0.436	–	–	–	–	0.271	0.445	–	–
Division of housework between parents	3.781	0.879	–	–	–	–	3.799	0.913	–	–
Division of grocery/shopping tasks between parents	3.268	1.212	–	–	–	–	3.373	1.232	–	–
Female respondent	0.519	0.500	–	–	–	–	0.550	0.498	–	–
Work situation during lockdown (May 2020 HOPP wave)										

Working >20 hours/week, remote work possible	–	–	0.611	0.488	0.626	0.484	0.358	0.480	0.355	0.479
Working >20 hours/week, remote work not possible	–	–	0.246	0.431	0.243	0.430	0.127	0.333	0.121	0.326
Working ≤20 hours/week	–	–	0.097	0.297	0.096	0.294	0.325	0.469	0.312	0.464
Not employed	–	–	0.046	0.209	0.035	0.183	0.190	0.392	0.213	0.410
Age of youngest child living in household	5.060	3.360	5.284	3.188	4.884	3.374	5.202	3.316	5.207	3.330
Presence of child aged 0–3 in household	0.399	0.490	0.355	0.479	0.434	0.496	0.384	0.487	0.367	0.482
Number of children under 18 in household	1.737	0.745	1.723	0.696	1.761	0.758	1.748	0.695	1.717	0.734
N (couples)	2676		564		1272		1032		1386	
N (individuals)	1078		141		516		258		554	

a Assessed on a five-level scale ranging from 1 (“entirely father”) to 5 (“entirely mother”). Child age refers to 2020, calculated from year of birth.

Appendix Table 9 contrasts the demographic profile of the balanced HOPP sample with that of the 2019 Microcensus sub-sample consisting of two-parent households with at least one child younger than 12. Overall, the two groups line up closely. Participants in HOPP tend to be slightly older, and their children are on average a bit older as well. These discrepancies could arise from both sampling design and pandemic-related response patterns, although the two sources cannot be distinguished.
Consistent with earlier research, we classify the period prior to March 19, 2020 as “prepandemic.” Even though the first reopening steps after the initial Covid-19 shutdown began late April 2020, the lifting of restrictions proceeded in phases. Daycare centers, in particular, reopened slowly in May under an “extended emergency care” scheme, and most regions shifted to “restricted normal operation” only later **(Figure 1)**. For this reason, the interval from March 19 through the end of May 2020 is treated as the (extended) lockdown phase.

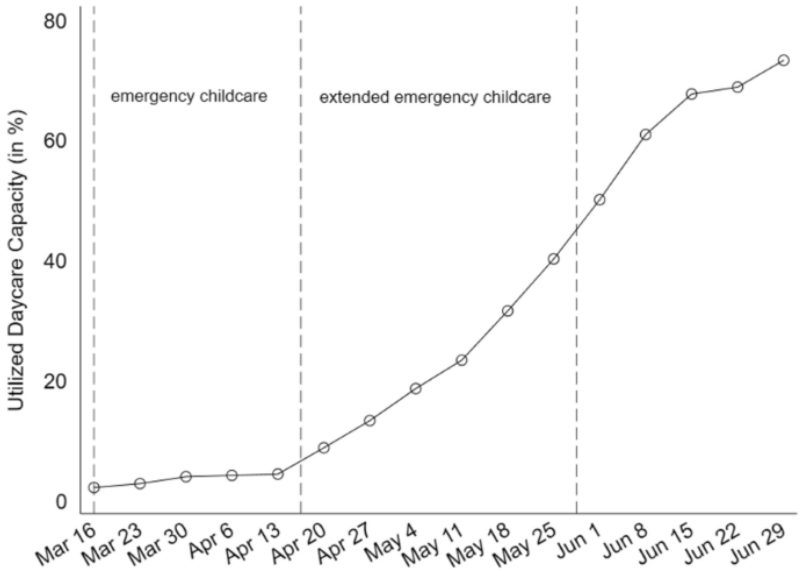

Figure 1. Source: DJI-RKI [48]; own computations. Note: “Utilized daycare capacity” denotes the proportion of children physically attending daycare among those enrolled as of March 2020. DJI-RKI (2020) provides weekly figures by state, compiled from ministerial reports; we compute national averages from these. Transitions between care phases are recorded as the first week in which more than five federal states change status, following the criteria in DJI-RKI (2020, Table 1).

Utilized daycare capacity in Germany during the early-2020 COVID-19 lockdown and subsequent reopening.

Dependent variable

Because childcare responsibilities became substantially more salient during daycare and school closures, our primary outcome focuses on how parents shared childcare. Childcare must be treated separately from other unpaid tasks [49], so we also analyze housework and shopping using equivalent recoding procedures.

The childcare question was asked only of respondents who lived with a partner and at least one child born after 2005 (i.e., under 15). They were asked:

"How do you and your partner currently divide childcare? This refers to periods when children are not supervised by school, kindergarten, etc., but by you and/or your partner."

Response categories were:

1 "(almost) entirely my partner,"

2 "mostly my partner,"

3 "about half and half,"

4 "mostly by me,"

5 "(almost) entirely by me."

We recoded these answers by respondent gender so that the scale reflects whether the father (1) or the mother (5) carries most of the care. Dichotomous variants of the measure were also generated.

Crucially, only the June wave asked respondents to report how childcare had been shared immediately before the pandemic. These retrospective responses serve as our baseline **(Table 2)**. We assume that, given the brief three-month recall period and coarse response categories, parents can reasonably identify their earlier division of care.

Table 2. Survey items used in the analysis

HOPP survey wave	May 2020	June 2020	July 2020	August 2020
Pre-pandemic division of childcare	x			
Pre-pandemic division of housework and errands	x			
Individual work arrangements of mothers and fathers during lockdown	x			
Current division of childcare		x	x	x
Current division of housework and errands		x	x	x

Prepandemic childcare allocation:

"Thinking about the period before the COVID-19 crisis: How did you and your partner divide childcare? This concerns the time when children were not in school or kindergarten but cared for by you or your partner."

Response options:

[1] (almost) entirely partner

[2] mostly partner

[3] about half and half

[4] mostly me

[5] (almost) entirely me

Pandemic-specific work arrangements (mothers and fathers):

"How many hours did you actually work last week, including overtime or additional hours? If your working hours vary, report the average over several weeks."

"Do you have the option to work from home?"

Current childcare arrangement:

"How do you and your partner currently divide childcare? This refers to times when children are not being looked after by school, kindergarten, etc."

Current split of housework and errands:

"How do you and your partner currently divide the following tasks? — Housework (laundry, cooking, cleaning, tidying) — Shopping (groceries)."

Prepandemic division of housework and errands:

"Thinking about the time before the COVID-19 crisis: How did you and your partner divide the following tasks? — Housework — Shopping."

Explanatory variables

To study how childcare allocation evolved once the lockdown ended—and to allow for nonlinear temporal patterns—we introduce monthly indicators for June, July, and August 2020, using the prepandemic division as the baseline. We separately define four categories of lockdown-related work–care configurations for mothers and fathers, combining information on weekly working hours with access to remote work. During the strict lockdown, parents typically navigated work–family conflicts by stopping work entirely, shifting to home-based work, or cutting back on paid hours. For our purposes, we rely on whether employers offered remote-work options (rather than self-reported use), thereby avoiding endogeneity. We assume

that anyone with remote-work access actually worked from home during the acute phase, when childcare institutions were closed and remote work was mandated whenever feasible. Actual labor supply is captured through reported working hours in the week prior to the interview (including overtime).

Because the dataset does not include direct observations of work–care arrangements from March/April 2020, we use the May 2020 HOPP wave to approximate the situation during the lockdown. We assume that most individuals continued the same work–care patterns through the gradual reopening of schools and daycare centers, which extended at least into early June 2020.

We do not further differentiate remote-work access for respondents who worked 20 hours or fewer per week, as time spent at home outside of employment is more likely to be channeled into childcare than time spent working at home. Whether or not remote work was possible, the parent with substantially reduced hours was likely to assume the bulk of care duties. Sample size limitations prevent more detailed categorizations. Since prepandemic work conditions for both partners are not available, changes relative to the pre-crisis situation cannot be directly measured.

When evaluating lockdown-specific work arrangements, we present estimates for mothers and fathers separately. This is necessary because partner-level information on employment, remote-work opportunities, and hours is missing from the May wave, which means we can only classify individuals—not couples—by their lockdown work–care setup. Consequently, we rely on four categories for both mothers and fathers:

(a) more than 20 weekly hours without a remote-work option,

(b) more than 20 weekly hours with a remote-work option,

(c) 20 hours or fewer per week,

(d) not employed.

Our primary analysis covers three consecutive monthly HOPP waves—June, July, and August—where items on childcare sharing within couples were introduced. Information on pre-Covid childcare arrangements comes from the June survey. The prepandemic period functions as a distinct reference category, yielding four total periods in the analysis. We also use the May 2020 wave to explore how the evolution of childcare division differs for subgroups of mothers and fathers according to the work–care arrangements defined above. It is important to emphasize that the HOPP dataset does not link mothers and fathers at the household level; thus, respondents labeled as mothers and fathers are not partners of one another. **Table 2** summarizes the variables and their corresponding survey waves.

Empirical Setup

Our descriptive analysis of how childcare responsibilities were allocated within households following Germany's first Covid-19 lockdown addresses two main research questions. The first asks about the overall trajectory of childcare sharing: did widespread closures of schools and daycare centers meaningfully alter gendered divisions of care, and if they did, in which direction? To assess these patterns, we estimate linear regression models of the following general form:

$$Y_{it} = \alpha + \beta_1 \text{June}_t + \beta_2 \text{July}_t + \beta_3 \text{August}_t + u_i + \epsilon it, \quad (1)$$

where Y denotes the childcare allocation reported by individual i at time t (with t ∈ ['Pre-Covid-19', June 2020, July 2020, August 2020]). June_t, July_t, and August_t are wave indicators. u_i captures person-specific unobserved factors, while ϵ_it is an idiosyncratic error term that varies over time. Throughout, standard errors are clustered by respondent and remain robust to heteroscedasticity. Coefficients β_1, β_2, and β_3 quantify how the distribution of childcare after the lockdown differs from the baseline ('Pre-Covid-19'). In the expanded panel specification, we additionally include wave markers for the subsequent bi-monthly periods—September/October 2020, November/December 2020, and January/February 2021.

A second set of questions addresses whether the post-lockdown evolution of childcare division varies across specific groups: in particular, whether differences stem from distinct work configurations during the phase when (extended) emergency childcare provisions were active (previously labelled 'extended lockdown'). For this, we estimate the following model independently for mothers and fathers:**

$$Y_{it} = \theta + \text{Wave}'_t s_0 + [\text{Work}_i \times \text{Wave}_t]' s_1 + u_i + \epsilon it, \quad (2)$$

**Here, Y again reflects the mother's or father's reported share in childcare. Wave_t is a set of interview-wave dummies. The specification retains individual fixed effects (u_i) and a time-varying error term (ϵ_it). Each wave indicator interacts with Work_i, a mutually exclusive set of dummies describing the lockdown-related work statuses (a–d) defined in Sect. 3. Results for models (1) and (2) are provided for both balanced and unbalanced samples, with and without fixed effects. Since no widely accepted fixed-effects estimator for ordinal dependent variables is available in standard software, we (a) treat the ordinal childcare measure as continuous, and (b) also recode it into a binary form to assess potential nonlinearities. Following Hellevik [50], we use linear probability models for dichotomous outcomes, as logistic approaches do not offer an appropriate decomposition of two-way associations.

Results and Discussion

Overall dynamics: Main findings

We begin by examining the estimates from Eq. (1) in Sect. 4. Relative to the pre-pandemic arrangement, respondents indicated a modest movement toward a greater paternal share of childcare in the months following the lockdown. This shift, however, was limited in size and gradually diminished, as illustrated in **Figure 2**, which displays the wave effects derived from a straightforward OLS model using the unbalanced panel. The same pattern emerges from the fixed-effects estimates in **Table 3**, which rely on the balanced sample. When individual fixed effects are introduced, the effects for July and August 2020 reach statistical significance. By August 2020, we detect a shift toward fathers amounting to roughly 0.06–0.11 units on a six-point scale. Comparable tasks also involving household negotiation—such as domestic chores and grocery shopping—either show no meaningful change (housework) or only minimal, short-lived effects (shopping), consistent with hypothesis H1.

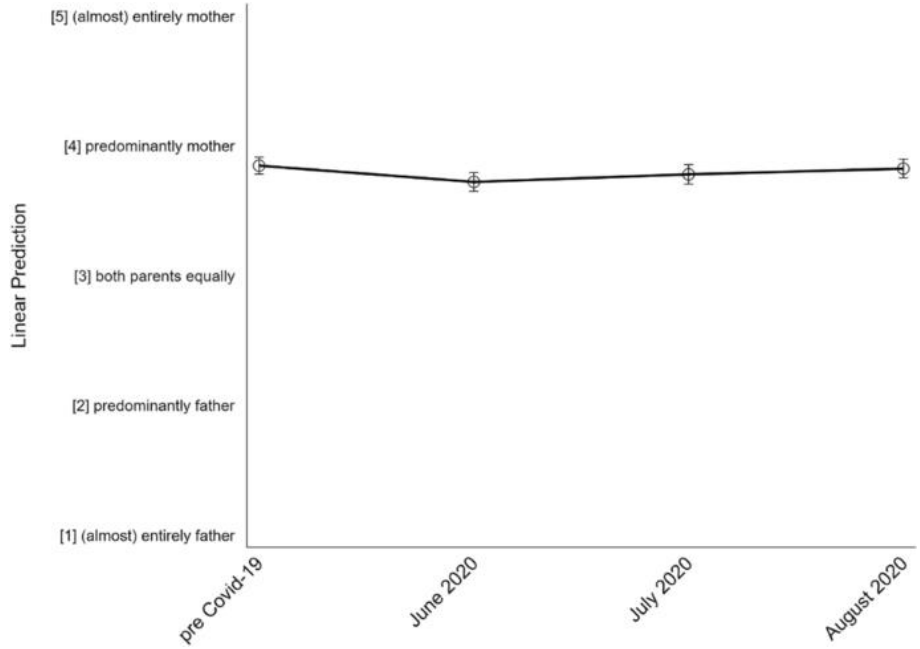

Figure 2. Source: IAB High-Frequency Online Personal Panel (HOPP), authors' computations. Notes: This figure plots period effects corresponding to Column 1 of Table 3

Overall post-lockdown development of parental childcare division.

Table 3. Post-lockdown dynamics of parental division of childcare (housework, shopping)

Dependent variable: Parental division of tasks →	Housework	Housework	Shopping	Childcare	Childcare
Model	(4)	(3)	(5)	(1)	(2)
Reference: Pre-COVID-19 situation					
June 2020	−0.045	−0.167***	−0.120**	−0.126***	−0.131***
	(0.041)	(0.057)	(0.057)	(0.032)	(0.032)
July 2020	0.056	−0.143***	−0.058	−0.067	−0.109***
	(0.047)	(0.054)	(0.052)	(0.042)	(0.037)
August 2020	0.048	−0.109**	−0.031	−0.023	−0.061*
	(0.046)	(0.048)	(0.052)	(0.042)	(0.036)
Female respondent					0.214***
					(0.053)
Constant	3.785***	3.915***	3.425***	3.735***	3.866***
	(0.028)	(0.034)	(0.033)	(0.043)	(0.020)
Individual fixed effects	Yes	Yes	Yes	No	Yes
Number of individuals	258	258	258	1078	1078
Number of couple-waves (N)	1031	1032	1030	2676	2676
Panel type	Balanced	Balanced	Balanced	Unbalanced	Unbalanced

Childcare (housework, shopping) is measured on a five-point scale from 1 = 'entirely father' to 5 = 'entirely mother'. Standard errors clustered at the respondent level. *** p < 0.01, ** p < 0.05, * p < 0.1.

We next investigate where the slight increase in paternal involvement originates—whether among more traditional couples or those closer to egalitarian patterns. To do this, we re-estimate the fixed-effects models on the balanced panel (**Table 3**, Column 3) using several binary indicators. These dichotomous outcomes capture whether childcare was (i) fully undertaken by the mother, (ii) mainly or fully undertaken by the mother, (iii) shared equally, or (iv) primarily or entirely done by the

father. Each binary variable is multiplied by 100 so that the coefficients reflect changes in percentage points. **Table 4** shows that traditionally structured childcare patterns remained strikingly stable. Within the balanced sample, the likelihood that mothers had sole responsibility (around 29% before the pandemic) did not significantly shift post-lockdown (Column 3). Instead, the minor adjustments stem from scenarios where mothers remained the principal caregivers but fathers already contributed substantially prior to Covid-19. Column 2 of **Table 4** shows that the probability of predominantly or completely maternal care dropped significantly from about 67 percent pre-pandemic, by 6.6 (June), 5.4 (July), and 5.8 (August) percentage points.

Table 4. Post-lockdown dynamics of parental childcare division. Dichotomous outcomes

Parental division of childcare	Predom./entirely mother	Predom./entirely father	Both parents equally	Entirely mother
	(1)	(2)	(3)	(4)
Pre-Covid-19 (ref.)				
June 2020	− 6.589**	8.140***	− 1.550	0.00000
	(2.691)	(2.176)	(2.909)	(2.580)
July 2020	− 5.426**	5.039***	0.388	− 3.488
	(2.498)	(1.838)	(2.722)	(3.030)
August 2020	− 5.814**	2.326	3.488	− 2.713
	(2.401)	(1.549)	(2.541)	(2.772)
Constant	66.667***	3.101***	30.233***	28.682***
	(1.621)	(1.182)	(1.712)	(1.769)
Individual FE	Yes	Yes	Yes	Yes
No. individuals	258	258	258	258
N	1032	1032	1032	1032
Sample	Balanced	Balanced	Balanced	Balanced

Binary outcomes multiplied by 100 so that coefficients indicate percentage-point differences. Standard errors clustered at the individual level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Conversely, this adjustment resulted in a higher likelihood that fathers assumed the primary caregiving role, rather than producing an uptick in equal sharing arrangements by June 2020. The probability of an egalitarian setup declined by 1.5 percentage points relative to its prepandemic rate of 30.2 percent, although this decrease is not statistically meaningful. In contrast, the proportion of cases in which fathers became the main caregivers rose by a statistically significant 8.1 percentage points compared to a prepandemic baseline of 3.1 percent. These patterns remain present during July; fathers continued to be around 5 percentage points more likely to take on the primary caregiving position than before the pandemic. By August 2020, the increase subsides to 2.3 percentage points and loses statistical significance. Thus, for this subset, we observe a clear reversion over time—and the subgroup is relatively small. Since neither egalitarian arrangements nor sole maternal caregiving show significant shifts in frequency and because mothers still make up the majority of principal caregivers, hypothesis H2 is fully corroborated.12 Overall, the post–first-lockdown changes in Germany's childcare distribution appear rather modest in scale.

There remains the possibility, however, that H2 might not apply during school vacation periods, when daily routines may diverge from typical work weeks. To investigate whether our findings are influenced by interviews conducted during vacation time, we introduce a variable coded as 1 when the survey invitation week included two or more school-holiday days, and 0 otherwise. In the HOPP design, respondents were allocated to four rotation groups that were contacted at weekly intervals (through August 2020) or at two-week intervals thereafter. Because the timing of invitation was predetermined and because school breaks differ across German federal states, this generates additional exogenous variation. Information on the respondents' state of residence was only collected starting in the November/December 2020 wave, which slightly reduces the number of usable observations for this robustness check. In total, 34.7 percent of observations in our main analytical sample were gathered during weeks overlapping with school holidays. **Table 5** reproduces our baseline estimates but adds the vacation indicator. We find neither substantial nor statistically reliable effects of being surveyed during school breaks.

Table 5. Postlockdown dynamics of parental childcare division. Influence of school vacations

	(1)	(2)	(3)
Pre-Covid-19 (ref.)			
June 2020	− 0.144***	− 0.151***	− 0.172***
	(0.046)	(0.046)	(0.062)
July 2020	− 0.162**	− 0.095*	− 0.152**
	(0.073)	(0.056)	(0.067)
August 2020	− 0.080	− 0.065	− 0.110*
	(0.059)	(0.049)	(0.059)

Surveyed in school vacation week	0.071	− 0.007	0.003
	(0.061)	(0.043)	(0.050)
Female respondent	0.277***		
	(0.074)		
Constant	3.702***	3.866***	3.900***
	(0.063)	(0.029)	(0.037)
Individual FE	No	Yes	Yes
No. individuals	547	547	221
N	1566	1566	884
Sample	Unbalanced	Unbalanced	Balanced

Childcare is measured on a five-point scale (1 = 'entirely father' to 5 = 'entirely mother'). The variable 'Surveyed in school vacation week' equals one when the invitation week includes at least two school-holiday days. Standard errors clustered at the individual level. *** p < 0.01, ** p < 0.05, * p < 0.1.

Overall dynamics: Extended time horizon

Analyses using the extended panel through January/February 2021 largely mirror the core findings, although the balanced panel necessarily contains fewer observations. **Table 6** shows that by September/October 2020, the parental division of childcare had effectively returned to its pre-pandemic configuration.

Table 6. Postlockdown dynamics of childcare division. Extended panel

	(1)	**(2)**	**(3)**
Pre-Covid-19 (ref.)			
June 2020	− 0.125***	− 0.132***	− 0.220***
	(0.032)	(0.032)	(0.071)
July 2020	− 0.068	− 0.114***	− 0.198***
	(0.042)	(0.038)	(0.065)
August 2020	− 0.023	− 0.044	− 0.115*
	(0.042)	(0.035)	(0.061)
September/October 2020	− 0.043	− 0.026	− 0.082
	(0.044)	(0.037)	(0.057)
November/December 2020	0.015	− 0.030	− 0.071
	(0.043)	(0.037)	(0.061)
January/February 2021	− 0.078	− 0.123***	− 0.154*
	(0.050)	(0.044)	(0.079)
Female respondent	0.255***		
	(0.053)		
Constant	3.714***	3.868***	3.896***
	(0.043)	(0.023)	(0.045)
Individual FE	No	Yes	Yes
No. individuals	1147	1147	182
N	4244	4244	1274
Sample	Unbalanced	Unbalanced	Balanced

*Measured on a five-point scale (1 = 'entirely father' to 5 = 'entirely mother'). Standard errors clustered at the individual level. *** p < 0.01, ** p < 0.05, * p < 0.1.*

Interestingly, by January/February 2021, we again detect a modest shift toward greater paternal involvement. This renewed movement coincides with Germany's second—though less stringent—Covid-19 lockdown, during which schools and many daycare centers closed beginning in mid-December 2020. Daycare attendance fell sharply by January/February 2021 **(Figure 3)**. Once individual fixed effects are included, this second shift becomes statistically significant and is slightly smaller than the June 2020 effect relative to the prepandemic period (0.12–0.15 versus 0.13–0.17 on the six-point scale). Taken together, these longer-run results reinforce the interpretation that the observed adjustments are temporary responses to constrained care options and recede once the constraints ease.

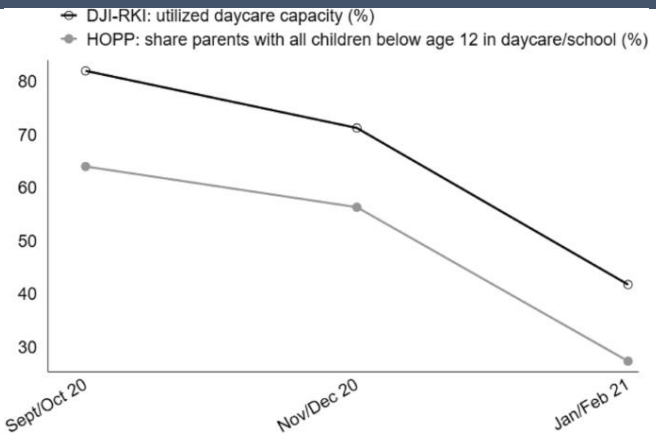

Figure 3. Source: DJI-RKI [51]; HOPP data, authors' calculations. Notes: Daycare utilization represents the proportion of enrolled children currently attending. Weekly figures from the KiTa Register (approx. 3% of German facilities) are aggregated to bimonthly averages. Daycare and school usage in Germany, late 2020 to early 2021

Childcare patterns by lockdown-related work arrangements

We now investigate which factors under lockdown-specific work-care arrangements drove the slight shift toward greater paternal childcare, as specified in Eq. (2) in Sect. 4.13 **Tables 5 and 6** display post-lockdown trends in the parental division of childcare separately for mothers and fathers.

Figure 4 illustrates maternal subgroup dynamics in childcare using OLS estimates from the unbalanced panel. A first observation is that mothers working over 20 hours weekly who lacked the option to work remotely appear to be the main group associated with increased father involvement. From a cross-sectional standpoint, households where mothers have lower paid work engagement exhibit more asymmetry in childcare both before and after the pandemic.

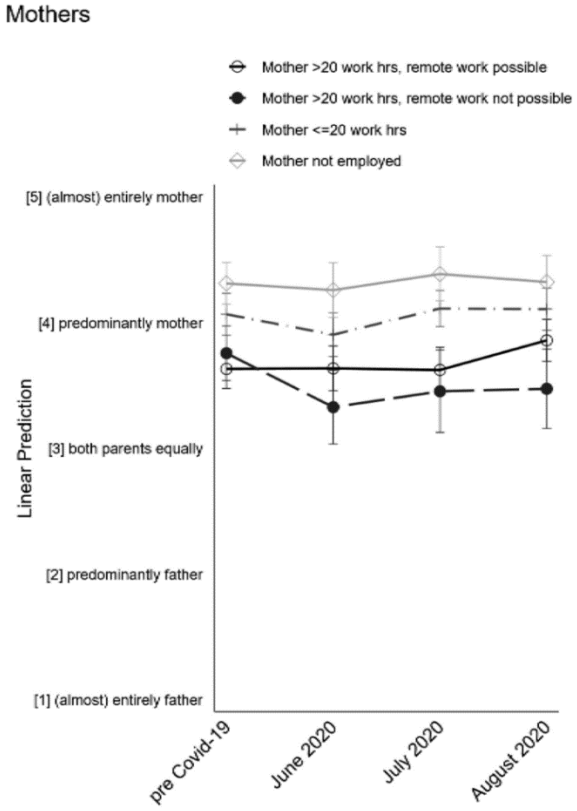

Figure 4. Source: IAB High-Frequency Online Personal Panel (HOPP), own calculations. Notes: Group-specific period effects based on Column 1 of Table 7.

Post-lockdown trends in parental childcare by mothers' lockdown-specific work status.

Table 7. Mothers—Post-lockdown childcare division dynamics by work arrangements

	(1)	(2)	(3)
Pre-Covid-19 (ref.)			
June 2020	0.004	0.011	− 0.120
	(0.085)	(0.084)	(0.154)

July 2020	− 0.009	0.020	− 0.120
	(0.101)	(0.085)	(0.140)
August 2020	0.227**	0.147*	0.060
	(0.099)	(0.085)	(0.123)
Mother > 20 work hrs, remote work possible (ref.)			
Mother > 20 work hrs, remote work not possible	0.125		
	(0.136)		
Mother ≤ 20 work hrs	0.434***		
	(0.116)		
Mother not employed	0.679***		
	(0.116)		
June 2020 × Mother > 20 work hrs, remote work not possible	− 0.432**	− 0.440**	− 0.704*
	(0.185)	(0.184)	(0.363)
July 2020 × Mother > 20 work hrs, remote work not possible	− 0.294	− 0.321*	− 0.351
	(0.214)	(0.176)	(0.314)
August 2020 × Mother > 20 work hrs, remote work not possible	− 0.510**	− 0.252	− 0.472**
	(0.204)	(0.162)	(0.210)
June 2020 × Mother ≤ 20 work hrs	− 0.166	− 0.186*	− 0.016
	(0.111)	(0.109)	(0.178)
July 2020 × Mother ≤ 20 work hrs	0.054	− 0.104	0.006
	(0.136)	(0.113)	(0.168)
August 2020 × Mother ≤ 20 work hrs	− 0.186	− 0.127	0.054
	(0.144)	(0.117)	(0.155)
June 2020 × Mother not employed	− 0.057	− 0.053	0.253
	(0.120)	(0.120)	(0.197)
July 2020 × Mother not employed	0.083	0.088	0.120
	(0.164)	(0.164)	(0.242)
August 2020 × Mother not employed	− 0.216	− 0.149	− 0.060
	(0.153)	(0.137)	(0.183)
Constant	3.630***	3.926***	4.028***
	(0.079)	(0.029)	(0.048)
Individual FE	No	Yes	Yes
No. individuals	554	554	141
N	1386	1386	564
Sample	Unbalanced	Unbalanced	Balanced

*Childcare measured on a five-point scale (1 = entirely father; 5 = entirely mother). Standard errors clustered at the individual level. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.*

We then test this shift using regression models. Individual fixed-effects estimates in Columns 2 and 3 of **Table 7** confirm that the largest changes are observed for mothers working more than 20 hours weekly without remote work access. Mothers with similar hours who could work from home show no significant change, supporting hypothesis H3 for mothers. Both groups had comparable pre-pandemic childcare distributions **(Figure 4)**, suggesting that selection into remote work is not a confounding factor. For mothers unable to work remotely, the increase in paternal care amounts to 0.440 (unbalanced) and 0.704 (balanced) points on the five-point scale by June 2020, decreasing to 0.252 (0.472) by August and losing statistical significance for the unbalanced panel. No other maternal subgroups exhibit significant post-pandemic changes.14 These findings align with May HOPP data showing that mothers working from home reported higher-than-average increases in parental stress compared to all mothers and more than fathers working from home [33]. OLS estimates (Column 1, **Table 7**) further underscore the role of maternal time availability in shaping post-pandemic childcare symmetry.

While precise modeling of working hours reduction before versus after the pandemic is not possible, evidence suggests a considerable number of mothers fell below the 20-hour threshold due to the crisis. The Böckler-Erwerbspersonen-Befragung reports that average weekly working hours for mothers with care-dependent children dropped from 31 pre-COVID to 24 in April 2020 [52]. In May 2020, 22% of male and 19% of female employees under social insurance were in short-time work [53]. Mothers were also more likely than fathers to be furloughed during the early lockdown [54] and disproportionately affected by declines in marginal employment between 31 March 2019 and 31 March 2020 [55] and in Q2 2020 [35].

For fathers, **Figure 5** presents subgroup dynamics from the unbalanced panel OLS estimates. Preliminary observations suggest that unemployed fathers and those working up to 20 hours per week may be the main groups associated with notable increases in paternal caregiving.

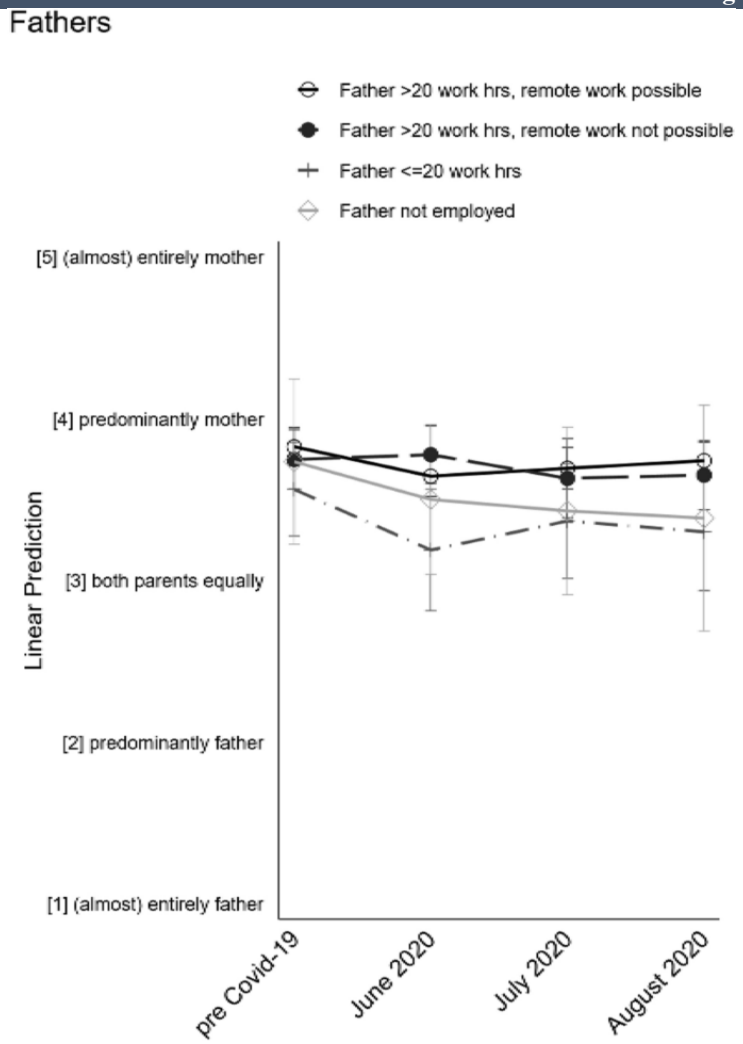

Figure 5. Source: IAB High-Frequency Online Personal Panel (HOPP), own calculations. Group-specific period effects based on regression results from Column 1 of Table 8

Post-lockdown trends in parental childcare by fathers' lockdown-related work arrangements.

Table 8. Fathers—Post-lockdown childcare division by lockdown-specific work arrangements

Dependent variable: Parental division of childcare →	**Fathers only**	**Fathers only**	**Fathers only**
Model	(1)	(2)	(3)
Reference period: Pre-COVID-19			
June 2020	−0.182***	−0.185***	−0.208*
	(0.055)	(0.055)	(0.113)
July 2020	−0.133*	−0.192***	−0.153
	(0.076)	(0.066)	(0.101)
August 2020	−0.087	−0.181***	−0.222**
	(0.070)	(0.065)	(0.096)
Reference category: Father works >20 hrs/week & remote work possible			
Father >20 hrs/week, remote work not possible	−0.078		
	(0.111)		
Father ≤20 hrs/week	−0.263*		
	(0.159)		
Father not employed	−0.092		
	(0.266)		
June 2020 × Father >20 hrs, remote not possible	0.211**	0.205**	0.173
	(0.085)	(0.084)	(0.157)
July 2020 × Father >20 hrs, remote not possible	0.016	−0.007	−0.026
	(0.147)	(0.132)	(0.145)
August 2020 × Father >20 hrs, remote not possible	−0.010	−0.015	−0.135
	(0.127)	(0.117)	(0.152)
June 2020 × Father ≤20 hrs/week	−0.193	−0.190	−0.246
	(0.200)	(0.200)	(0.265)
July 2020 × Father ≤20 hrs/week	−0.063	0.039	−0.029

	(0.202)	(0.171)	(0.156)
August 2020 × Father ≤20 hrs/week	−0.176	−0.064	0.040
	(0.223)	(0.186)	(0.201)
June 2020 × Father not employed	−0.051	−0.077	−0.042
	(0.260)	(0.265)	(0.437)
July 2020 × Father not employed	−0.172	−0.175	−0.347
	(0.358)	(0.313)	(0.578)
August 2020 × Father not employed	−0.262	0.059	−0.278
	(0.407)	(0.463)	(0.577)
Constant	3.826***	3.804***	3.783***
	(0.060)	(0.029)	(0.049)
Individual fixed effects	No	Yes	Yes
Number of individuals	516	516	115
Number of observations (N)	1272	1272	460
Sample type	Unbalanced	Unbalanced	Balanced

*Dependent variable: parental childcare measured on a 5-point scale from 1 = entirely father to 5 = entirely mother. ***p < 0.01, **p < 0.05, p < 0.1

Regression estimates including individual fixed effects (Columns 2 and 3, **Table 8**) indicate that all father subgroups contributed similarly to the modest rise in paternal childcare involvement. The magnitude of the increase hovers around 0.2 points and remains fairly stable over time. One exception occurs in June 2020, when fathers working over 20 hours weekly without remote work options did not participate in the shift. Overall, fathers' work arrangements appear to have had minimal influence on childcare dynamics over time, contradicting hypothesis H3 for fathers. Unlike for mothers, no clear negative relationship emerges between fathers' access to telework and the maternal share of childcare. H3 pertains to longitudinal changes rather than cross-group differences. Nevertheless, OLS estimates from the unbalanced panel (Column 1) show that fathers working ≤20 hours weekly had significantly higher childcare involvement in cross-sectional terms, mirroring patterns seen among mothers. However, non-employment among fathers does not show a significant association with childcare division.

Conclusion

In general, childcare arrangements remained highly stable throughout the pandemic, although small, temporary shifts toward increased paternal involvement were detectable; other forms of unpaid work did not exhibit comparable changes. The primary driver behind these minor shifts is mothers with substantial labor market engagement who lacked the option to work from home. None of the fathers' work arrangement groups can be pinpointed as the main driver. Overall, the evidence suggests that the observed changes stemmed from necessity—due to mothers' inability to assume all childcare responsibilities—rather than opportunity, such as fathers working remotely or reduced paternal hours. Consequently, these effects are likely to disappear once the pressure diminishes. In contexts characterized by pronounced pre-pandemic asymmetry in childcare responsibilities, external stimuli appear short-lived. Our findings therefore neither support retraditionalization nor a lasting equalization of unpaid labor between genders, emphasizing the decisive role of initial conditions in resetting childcare routines post-crisis.

These results align with certain prior findings while diverging from others. We confirm the "stability notion" of Globisch and Osiander [56] based on the first two HOPP waves; our longer observation period, however, captures the fading of initial shifts until August 2020. Unlike Hank and Steinbach [12], we do not find significant changes at the extremes of the distribution. Consistent with hypothesis H2, couples with pre-pandemic egalitarian arrangements or those with mothers as sole caregivers show no notable shifts over time. Although earlier studies documented increased father involvement during the pandemic, our data indicate that these shifts largely receded in subsequent months, with persistent minor increases only in households where the mother was predominantly responsible pre-pandemic and the father already somewhat engaged. These couples appear to have benefited from more egalitarian role models or supportive changes in relative resources, underscoring the importance of policies promoting women's labor market participation throughout their careers.

Regarding telework, our findings corroborate previous research indicating that maternal remote work does not reduce childcare burdens for mothers; instead, it often increases them [33]. In contrast, paternal telework does not automatically correspond to higher father involvement, differing from earlier findings that suggested a reduction in maternal burden [12, 15]. Methodological differences likely explain these inconsistencies. Notably, Hank and Steinbach [12] only observed this effect when the father alone switched to telework, consistent with our conclusion that paternal remote work impacts childcare primarily via maternal behavior. A similar pattern was found for Austria [43].

Some limitations must be acknowledged. First, due to missing data on the couple's work constellation pre- and during the lockdown, we cannot directly observe relative resources; our analysis relies on childcare allocation as a proxy. Second, the findings for mothers working extensive hours without telework options may partly reflect social desirability bias, as reduced maternal childcare could be socially acceptable only under this arrangement. The negligible effect of fathers' work arrangements on childcare involvement supports this interpretation.

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