Descriptive Finding

Gender inequality in domestic chores over ten months of the UK COVID-19 pandemic: Heterogeneous adjustments to partners’ changes in working hours

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Gender inequality in domestic chores over ten months of the UK COVID-19 pandemic: Heterogeneous adjustments to partners’ changes in working hours

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Abstract

BACKGROUND
COVID-19 containment measures led to a generalised decrease in working hours. The limited chances of spending time outside the home and the increased needs related to children and housekeeping triggered gender-specific reactions to unpaid labour. Little is known about changes in partners’ division of domestic chores in the months following the pandemic outspread.

OBJECTIVE
Focusing on the United Kingdom, we study whether couples’ reallocation of unpaid labour after a loss of working hours during the first strict lockdown (April 2020) lasted in the following months.

METHODS
Relying on the UKHLS COVID-19 survey (April 2020 to January 2021) and on multivariate OLS regressions, we analyse the gender division of unpaid labour, differentiating couples according to loss of working hours and the subsequent recovery.

RESULTS
In the short term, the partner who lost working hours promptly reacted by increasing time dedicated to unpaid labour, and this adjustment endured over the following months. However, if the man recovered working hours, we observed pre-lockdown or even higher levels of gender inequality, especially in couples with dependent children.

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CONCLUSIONS
The short-term reallocation of time to unpaid labour following the first lockdown translated into more gender equality only if the male partner lost working hours. In the following months, however, all couples went back to pre-lockdown (or even higher) levels of gender inequality, except those in which the man did not recover former working hours.

CONTRIBUTION
Our study documents changes in the gender division of domestic chores in response to alterations in working hours, focusing on couples in the first ten months of the COVID-19 pandemic.

1. Background
From March 2020 to January 2021 the United Kingdom experienced three national lockdowns and a variety of localised restrictions to reduce the transmission of the SARS-CoV-2 virus. As the pandemic progressed, individual, family, and social life all needed to be reorganised. Time allocation within families was continuously and variously influenced by the unfolding pandemic.

Social distancing measures and the closure of non-essential sectors had significant labour market consequences (as in other countries, see e.g., Brini et al. 2021), resulting in decreased working hours outside the home and an increase in home working. A full furlough scheme was introduced through the Coronavirus Job Retention Scheme (UK Government 2020), which came into force in March 2020. Early research estimated a 30% reduction in paid work time for both female and male workers in April 2020 (Zhou et al. 2020). Despite the easing of restrictions in the following months, the introduction of a flexible form of furlough (UK Parliament 2021a), and the observed increase in working hours (Office for National Statistics 2021a), hours of paid work remained at low levels compared with the year preceding the pandemic. Working from home became widespread during the outbreak of the pandemic and remained at unprecedented levels during all of 2020 (Office for National Statistics 2021b).

Restrictions during this period included the temporary closure of schools (Institute for Government 2021) and temporary or permanent closure of Early Childhood Education and Care (ECEC) providers (UK Parliament 2021b), driving an increase in the need for informal and within-household childcare. The first strict national lockdown started in March 2020 and was accompanied by the sudden closure of schools and formal childcare (except for children of essential workers and vulnerable children, which represent a negligible portion of the population) (Education Policy Institute 2020).
Restrictions were eased during the summer months: In June 2020, schools underwent a phased (but limited) reopening; in late July 2020, ECEC settings were able to re-open. All schools reopened in September, after their closure for the summer holidays. The second lockdown started in November 2020 and lasted for four weeks, and a third one started in January 2021. During this period, despite promises and attempts to reopen primary and secondary schools, both remained closed (see also Chung et al. 2021), while formal childcare remained open.

Early studies focusing on the gendered allocation of time to unpaid labour during the COVID-19 pandemic inevitably suffered from the inability to predict trends based on onset data. Some have been cautiously optimistic, showing flexible work arrangements and fathers being more involved in childcare. This was identified as the first step towards a possibly enduring gender equality (Herzberg-Druker, Kristal, and Yaish 2020; Hupkau and Petrongolo 2020; Mangiavacchi, Piccoli, and Pieroni 2020). However, analyses looking at both paid and unpaid labour among couples documented a disproportionate increase in female time devoted to housework and childcare; that is, an increase that did not correspond to the changes in paid work (Del Boca et al. 2020; Hipp and Bünning 2021; Yaish, Mandel, and Kristal 2021). Although this result found some confirmation in studies on the United Kingdom (Sánchez, Fasang, and Harkness 2021; Sönmez 2021; Xue and McMunn 2021; Zamberlan, Gioachin, and Gritti 2021), in general the results have been mixed. Recent contributions suggest a slight increase in gender equality (Hudde, Hank, and Jakob 2021) and a positive influence of flexible working arrangements on the amount of time fathers spend with children (Chung et al. 2021).

The literature on the gender division of unpaid labour has traditionally focused on three main explanations: available time, relative resources, and gender (for a more detailed overview of these frameworks, see Bianchi et al. 2000). This study takes these factors into explicit account by analysing the intra-couple division of unpaid labour conditional on an increase of available time (due to a decrease in working hours), with respect to gender and controlling for the relative resources of each partner.

Scholarship on the gender division of unpaid labour has focused either on the immediate impact of critical events such as job loss (e.g., Foster and Stratton 2018; Gough and Killewald 2011) or on long-term trends over the life course and across cohorts (e.g., Leopold, Skopek, and Schulz 2018). A well-established finding is that the division of housework and childcare between partners is plastic with respect to both specific events and life course transitions. However, few available studies (Kühnle 2012; Voßemer and Heyne 2019) look at changes taking place over years.

Relying on monthly, high-quality longitudinal data, we ask whether couples’ immediate reallocation of unpaid labour after a loss of working hours during the first lockdown lasted in the following months. Notably, the division of paid labour did not crystallize into a predictable pattern beyond the initial shock. Heterogeneous adjustments
may have arisen as some couples recovered from the immediate loss of working hours, whereas others did not. If paid labour matters to the division of unpaid labour in the home, we should observe a return to the pre-shock division of unpaid labour for couples who rebounded to the initial number of working hours, and a levelling-off for those who did not recover.

2. Data and methods

Drawing from UK Household Longitudinal Study data (henceforth referred to as UKHLS or Understanding Society), we link five waves of the monthly COVID-19 survey (University of Essex, Institute for Social and Economic Research 2020) to the last wave of the UKHLS study preceding the outbreak of the pandemic (wave 9, 2017–2019). We identify cohabiting heterosexual couples to compile a balanced panel of information on the division of unpaid labour in January/February 2020 and in five subsequent time points: April, May, June, and September of 2020 and January 2021.

We define the division of unpaid labour according to the percentage female share of the total time dedicated to housework and childcare chores. Respondents were asked to individually report their time spent the preceding week on housework and childcare (including home schooling). Given that the presence of children is likely to alter the overall number of domestic tasks as well as the division of these tasks, we analyse separately couples with and without dependent children (0–16 years old) (see Figure 1 for more details).

To measure the labour market shock induced by the pandemic, we first compare the paid hours declared during the first strict lockdown (April 2020) with those in January/February 2020. A pre/post-pandemic comparison of household chores was unfortunately not possible since the latest pre-pandemic UKHLS time-use information dates back to 2018. Thus, as an alternative, we consider households where both partners reported stable working hours (or even an increase) as resembling the condition in which no initial labour market shock occurred. Although acknowledging that this group might be highly heterogeneous and affected by changes other than loss of working hours, for convenience we refer to these couples as ‘unaffected’. The remaining couples are classified on the basis of lost working hours for each member of the couple. Hence, we distinguish couples where (1) neither partner lost paid hours (the reference group), (2) only the man or (3) only the woman lost paid hours, and (4) both partners lost paid hours.

The last analytical step further distinguishes whether such loss was recovered over the subsequent months. This is determined by the number of working hours that return to the level preceding the first lockdown. We look at the total household working hours and, for each month, we compute whether the initial number of working hours was recovered.
or not. We then rely on the modal status (recovered/did not recover) over the April 2020–January 2021 temporal span to group couples into those who recovered from the initial shock and those who did not.

We perform ordinary least squares (OLS) regressions separately for each time point, including the observable characteristics of both partners that could determine the risk of losing paid working hours and the division of unpaid work. Notably, we use the most detailed administrative classification available (Government Office Regions) to control for regional differences. Tables 1 and 2 show the distribution of covariates across couple types.

Table 1: Descriptive statistics (means) of covariates. Balanced sample of couples without dependent children (April 2020)

|                        | Male Characteristics |                          | Female Characteristics |                          | Both partners’ characteristics | Total |
|------------------------|----------------------|---------------------------|------------------------|---------------------------|--------------------------------|-------|
|                        | No loss              | Man lost: no recover      | Man lost: recover      | Female lost: no recover   | Female lost: recover          | Both lost: no recover | Both lost: recover | Total      |
| Age                    | 55.59                | 57.25                     | 52.73                  | 59.29                     | 55.06                          | 53.77             | 54.22             | 56.23      |
| GCSE or less (ISCED 3C or less) | 0.34                | 0.52                      | 0.29                   | 0.66                      | 0.35                          | 0.17             | 0.40             | 0.43       |
| A-levels (ISCED 3A)    | 0.30                 | 0.18                      | 0.13                   | 0.10                      | 0.29                          | 0.22             | 0.26             | 0.21       |
| Degree (ISCED 5 or more) | 0.36                | 0.31                      | 0.58                   | 0.24                      | 0.37                          | 0.61             | 0.34             | 0.36       |
| Part-time employment   | 0.40                 | 0.14                      | 0.26                   | 0.59                      | 0.12                          | 0.20             | 0.21             | 0.35       |
| Homeworking before COVID-19 | 0.08              | 0.10                      | 0.40                   | 0.04                      | 0.15                          | 0.15             | 0.08             | 0.11       |
| Key worker             | 0.33                 | 0.57                      | 0.76                   | 0.73                      | 0.49                          | 0.44             | 0.35             | 0.52       |
| ISCO 1: managers       | 0.15                 | 0.14                      | 0.16                   | 0.11                      | 0.20                          | 0.11             | 0.22             | 0.14       |
| Male characteristics   | Age                  | 53.68                     | 52.86                  | 52.60                     | 55.47                          | 54.47             | 52.49             | 55.40      |
| GCSE or less (ISCED 3C or less) | 0.43              | 0.57                      | 0.29                   | 0.70                      | 0.23                          | 0.32             | 0.38             | 0.48       |
| A-levels (ISCED 3A)    | 0.17                 | 0.13                      | 0.20                   | 0.10                      | 0.18                          | 0.19             | 0.20             | 0.15       |
| Degree (ISCED 5 or more) | 0.41                | 0.31                      | 0.50                   | 0.20                      | 0.59                          | 0.49             | 0.42             | 0.36       |
| Part-time employment   | 0.67                 | 0.42                      | 0.69                   | 0.29                      | 0.52                          | 0.55             | 0.62             | 0.53       |
| Homeworking before COVID-19 | 0.06              | 0.05                      | 0.00                   | 0.05                      | 0.05                          | 0.18             | 0.14             | 0.06       |
| Key worker             | 0.45                 | 0.61                      | 0.34                   | 0.73                      | 0.57                          | 0.51             | 0.44             | 0.54       |
| ISCO 1: managers       | 0.08                 | 0.11                      | 0.06                   | 0.47                      | 0.09                          | 0.04             | 0.11             | 0.17       |
| Both partners’ characteristics | Married              | 0.78                      | 0.91                   | 0.75                      | 0.89                          | 0.93             | 0.71             | 0.89       |
| Male breadwinner       | 0.30                 | 0.37                      | 0.40                   | 0.17                      | 0.25                          | 0.25             | 0.40             | 0.56       |
| Similar earnings       | 0.59                 | 0.55                      | 0.58                   | 0.24                      | 0.58                          | 0.52             | 0.29             | 0.49       |
| Female breadwinner     | 0.11                 | 0.07                      | 0.02                   | 0.58                      | 0.16                          | 0.09             | 0.16             | 0.20       |
| England                | 0.90                 | 0.91                      | 0.63                   | 0.95                      | 0.97                          | 0.84             | 0.94             | 0.89       |
| Wales                  | 0.03                 | 0.02                      | 0.01                   | 0.01                      | 0.02                          | 0.02             | 0.06             | 0.02       |
| Scotland               | 0.07                 | 0.06                      | 0.36                   | 0.03                      | 0.01                          | 0.13             | 0.00             | 0.08       |
| Northern Ireland       | 0.01                 | 0.01                      | 0.00                   | 0.02                      | 0.00                          | 0.00             | 0.00             | 0.01       |
| N. couples             | 232                  | 93                        | 36                     | 88                        | 23                            | 50               | 32               | 554        |

Source: Understanding Society (9th wave) + UKHLS Covid Survey W1.  
Note: In regression analyses ISCO 1-digit and Government Office Regions are inserted with original categories. For the sake of brevity we present a collapsed version here. The breadwinner is defined as earning more than 65% of total earnings during the baseline period. Cross-sectional weights provided by Understanding Society – which already account for attrition and adjust for the not-(fully)-random participation (Benzeval et al. 2020) – are used.
Table 2: Descriptive statistics (means) of covariates. Balanced sample of couples with dependent children (April 2020)

| Male characteristics | No loss | Man lost: no recover | Man lost: recover | Female lost: no recover | Female lost: recover | Both lost: no recover | Both lost: recover | Total |
|----------------------|---------|----------------------|------------------|------------------------|---------------------|----------------------|------------------|-------|
| Age                  | 45.17   | 43.94                | 44.73            | 43.54                  | 46.34               | 42.69                | 44.83            | 44.32 |
| GCSE or less (ISCED 3C or less) | 0.28    | 0.28                 | 0.49             | 0.39                   | 0.20                | 0.48                 | 0.46             | 0.35  |
| A-levels (ISCED 3A)  | 0.18    | 0.37                 | 0.05             | 0.13                   | 0.00                | 0.24                 | 0.26             | 0.21  |
| Degree (ISCED 5B or more) | 0.54    | 0.35                 | 0.47             | 0.48                   | 0.80                | 0.27                 | 0.29             | 0.44  |
| Part-time employment | 0.09    | 0.11                 | 0.00             | 0.02                   | 0.25                | 0.01                 | 0.06             | 0.07  |
| Homeworking before COVID-19 | 0.02    | 0.08                 | 0.13             | 0.10                   | 0.00                | 0.08                 | 0.03             | 0.06  |
| Key worker           | 0.57    | 0.46                 | 0.31             | 0.70                   | 0.29                | 0.48                 | 0.41             | 0.51  |
| ISCO 1: managers     | 0.26    | 0.13                 | 0.13             | 0.14                   | 0.08                | 0.10                 | 0.21             | 0.18  |
| Female characteristics |         |                      |                  |                        |                     |                      |                  |       |
| Age                  | 41.90   | 42.76                | 42.65            | 43.17                  | 43.07               | 37.61                | 43.70            | 41.87 |
| GCSE or less (ISCED 3C or less) | 0.20    | 0.50                 | 0.10             | 0.19                   | 0.13                | 0.23                 | 0.08             | 0.24  |
| A-levels (ISCED 3A)  | 0.25    | 0.05                 | 0.33             | 0.16                   | 0.00                | 0.59                 | 0.36             | 0.25  |
| Degree (ISCED 5B or more) | 0.55    | 0.45                 | 0.57             | 0.66                   | 0.87                | 0.17                 | 0.55             | 0.50  |
| Part-time employment | 0.74    | 0.87                 | 0.70             | 0.51                   | 0.67                | 0.43                 | 0.55             | 0.67  |
| Homeworking before COVID-19 | 0.10    | 0.06                 | 0.00             | 0.32                   | 0.07                | 0.41                 | 0.16             | 0.17  |
| Key worker           | 0.39    | 0.53                 | 0.77             | 0.32                   | 0.71                | 0.71                 | 0.74             | 0.52  |
| ISCO 1: managers     | 0.06    | 0.11                 | 0.12             | 0.13                   | 0.00                | 0.03                 | 0.11             | 0.08  |
| Both partners’ characteristics |         |                      |                  |                        |                     |                      |                  |       |
| Married              | 0.80    | 0.77                 | 1.00             | 0.94                   | 1.00                | 0.78                 | 0.77             | 0.83  |
| Male breadwinner     | 0.68    | 0.74                 | 0.41             | 0.53                   | 0.52                | 0.52                 | 0.42             | 0.60  |
| Similar earnings     | 0.31    | 0.17                 | 0.54             | 0.44                   | 0.16                | 0.38                 | 0.58             | 0.34  |
| Female breadwinner   | 0.02    | 0.09                 | 0.05             | 0.03                   | 0.32                | 0.10                 | 0.00             | 0.06  |
| England              | 0.90    | 0.96                 | 0.96             | 0.90                   | 0.93                | 0.98                 | 0.92             | 0.93  |
| Wales                | 0.02    | 0.00                 | 0.00             | 0.01                   | 0.02                | 0.01                 | 0.00             | 0.01  |
| Scotland             | 0.06    | 0.04                 | 0.03             | 0.09                   | 0.03                | 0.01                 | 0.00             | 0.05  |
| Northern Ireland     | 0.01    | 0.00                 | 0.01             | 0.00                   | 0.02                | 0.00                 | 0.08             | 0.01  |
| N. couples           | 93      | 51                   | 16               | 38                      | 13                  | 25                   | 21               | 257   |

Source: Understanding Society (9th wave) + UKHLS Covid Survey W1.
Note: In regression analyses ISCO 1-digit and Government Office Regions are inserted with original categories. For the sake of brevity we present a collapsed version here. Breadwinner is defined as earning more than 65% of total earnings during the baseline period. Cross-sectional weights provided by Understanding Society – which already account for attrition and adjust for the not-(fully)-random participation (Benzeval et al. 2020) – are used.

3. Results

3.1 Distribution of loss and recovery of working hours since April 2020 lockdown

Figure 1 shows the distribution of couples according to initial loss and subsequent recovery of working hours. Results are shown for the full sample (all available cases in April 2020) and for the subsamples of couples with and without dependent children (with balanced panels purged from missing values in the variables of interest).
Figure 1: Percentage distribution of changes in working hours across couples, according to different sample specifications

Looking at the two analytic (balanced) samples, it is apparent that at least one member of most couples lost working hours during the first strict lockdown, while around 33%–36% of couples remained stable (and represent the reference group). The majority of couples who underwent an initial loss of working hours did not recover during the following months, especially if the initial shock hit the woman.

3.2 Gender (in)equality in domestic chores from April 2020 to January 2021

Figure 2 presents the percentage of the female share of the couple’s total time spent in household chores, from April 2020 to January 2021.
Figure 2: Predicted female share of domestic chores conditional on labour market changes (if any), April 2020 – January 2021

Total household chores (housework + childcare)

- Man lost hours
- Couples without dep. children
- Woman lost hours
- Both lost hours

Source: Understanding Society (9th wave) + UKHLS Covid Survey W1, W2, W3, W5, and W7.
Note: Percentage values. 95% confidence intervals. Number of sample without dep. children: April: 607; May: 613; June: 614; September: 622; January: 597. Number of sample with dep. children: April: 286; May: 280; June: 269; September: 249; January: 259.

In all panels a grey dashed line is placed at the 50% mark, indicating a perfectly equal gender division of unpaid labour. The green dashed line shows the evolution of the predicted share for couples who did not experience the initial labour market shock. Following the selection on observables framework (Gangl 2010), we assume that after controlling for relevant observable differences between affected and unaffected couples, this latter group represents a comparison benchmark for interpreting the evolution of the consequences of the shock for affected couples.

Figure 2 shows that the short-term reaction (in April 2020) to the initial labour market shock was an overall increased involvement in household chores by the partner who lost working hours, leading to more equality, less equality, or no difference with the reference group if the man, the woman, or both lost working hours, respectively. Couples without children (upper panels) show great stability in inequality over the following months if the woman or both partners lost working hours, with women spending about 65%–70% of the couple’s time on domestic work even ten months after the outbreak of the pandemic. However, we observe an increasing difference with the reference group if the man lost hours but not the woman. More specifically, in this situation we observe a
move towards more gender equality, pointing to an increase in male participation in domestic chores when more time is available.

In households with dependent children (lower panels), the female share of unpaid labour is higher among couples unaffected by the initial shock (around 70%) than among couples without children. If the woman or both partners lost working hours, this share slightly increases (towards more inequality). Interestingly, men who lost working hours show a reduction over time in their initial, more equal involvement, reaching the pre-lockdown level after ten months.

Finally, Figure 3 shows the heterogeneity analysis for the recovery of working hours, or lack thereof, in the months following the first strict lockdown.

Figure 3: Predicted female share of domestic chores conditional on labour market changes (if any), April 2020 – January 2021.

Source: Understanding Society (9th wave) + UKHLS Covid Survey W1, W2, W3, W5, and W7.
Note: Percentage values. 95% confidence intervals. Number in sample without dep. children: April: 607; May: 613; June: 614; September: 622; January: 597. Number in sample with dep. children: April: 286; May: 280; June: 269; September: 249; January: 259.

For couples in which both partners initially lost working hours, the results point to no clear-cut differences in overall (in)equality trajectories with respect to the recovery of working hours; however, findings for households in which either the man or the woman underwent the initial labour market shock qualify the relevance of further differentiating subsequent labour market arrangements to understand (in)equality trajectories. The
increased male involvement in domestic chores after a loss of working hours, observed in Figure 2, is entirely driven by men who did not recover and thus had more available time. Looking at men who recovered working hours, particularly in couples with children, we observe a striking result: fathers became much less involved in domestic chores over time, leading to a predicted female share of about 85% in January 2021 – much higher than the share for the unaffected couples. Focusing on women who underwent the initial labour market shock, we observe that those who recovered took on an even higher share of household working hours than women who did not recover. This surprising observation possibly suggests that mechanisms aimed at re-establishing traditional gender roles were in place.

4. Discussion

The aim of this descriptive contribution is to document the trajectories of heterosexual couples in the division of unpaid labour after a loss of working hours during the first lockdown in the United Kingdom, covering 10 months from April 2020 to January 2021. In most of the couples at least one member lost working hours during the first lockdown, and the majority did not recover during the following months. In general, the short-term reaction to a loss of working hours was an increase in time dedicated to unpaid labour by the partner whose hours of paid labour decreased. This translated into more inequality (i.e., a higher female share) if the woman lost working hours, more equality (i.e., a lower female share) if the man lost working hours, and no significant difference if both partners decreased working hours. In the first scenario, inequality in the division of unpaid labour remained virtually inelastic to subsequent changes in paid work, such that the final share of unpaid labour 10 months after the first lockdown was close to the initial values of those unaffected by the initial shock, or slowly approaching these values, but in any event far from equal. The higher initial equality observed in instances where the man lost working hours was maintained if he did not recover from the initial shock and thus had more time available. However, this new gender-equal equilibrium did not last for long and translated into even more inequality if the man recovered working hours. This is particularly striking in couples with dependent children, where the total amount of household work is probably quite high compared to other households.

In sum, our results point to the importance of accounting for changes in paid labour arrangements when analysing the gender division of unpaid labour following a sudden labour market shock. We found that the relationship between paid and unpaid work differs depending on the gender of the partner who initially reduced their working hours, suggesting that gender differentiation exists across households. While men appear to react to the initial loss and possible recovery by proportionally adjusting the time...
dedicated to household labour, women not only increase their involvement in housework and childcare after a drop in working hours but maintain this level of involvement after returning to paid work.

In conclusion, the adopted time window of ten months proved useful in highlighting the unequal adjustments in male and female contributions to household chores that followed an immediate shock, along with subsequent changes in labour market participation. Overall, the evidence we found seems to be at odds with the argument of a progressive change towards gender equality (Sullivan 2021); further research might shed light on the underlying mechanisms.

**Corrections:**
On October 26, 2022, minor text changes were made on page 567 and 568 and in the source notes to tables and figures at the authors’ request.
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