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Abstract

This paper studies the effects of Covid-19 related daycare and school closures on gender role attitudes toward maternal employment in Germany. We compare women and men with dependent children to those without children one year after the outbreak of the pandemic. Using data on gender role attitudes from 2008 through 2021, we find that fathers' egalitarian attitudes toward maternal employment dropped substantially in 2021. This drop is observed for men in West Germany, who showed a steady progression toward more egalitarian attitudes in the pre-pandemic period. Attitudes by women are not affected. These findings suggest that the pandemic not only affected the short-term allocation of housework and childcare, but also reversed recent trends toward more egalitarian gender roles.

JEL-Codes: J130, J160, J180, J220.

Keywords: Covid-19, gender role attitudes, childcare, difference-in-difference, ALLBUS, COMPASS.

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I Introduction

Globally, Covid-19-related closures of daycare and schools required parents to step in and take over a significant amount of care and education work normally provided by these institutions. Families adapted by changing the intra-household division of labor and care work in various ways (Jessen *et al.*, 2021). In the large majority of households in the Western world, women took over a disproportionately large share of the additional care duties, adjusting their labor supply accordingly. This rising gender inequality was further fueled by the excessive employment losses of women during the pandemic, a phenomenon now dubbed *Shecession* (Alon *et al.*, 2021). However, little is known about whether these observed shifts toward more traditional specializations within families also translate into underlying gender role attitudes.

To the best of our knowledge, only two other studies investigate gender role attitudes during the pandemic. Boring and Moroni (2021) use French data from 2020 to show that gender norms became more traditional during the lockdown, particularly among fathers of young children. Survey data from three countries in mid 2020 suggest male attitudes became more egalitarian if they became unemployed while their partners worked, while unemployed women with a working partner became more traditional (Reichelt, Makovi and Sargsyan, 2021).

In this paper, we contribute to the literature by assessing the effects of the pandemic on gender role attitudes in a difference-in-differences setup using new representative data for Germany until 2021, one year after the onset of the pandemic. We account for historical differences in gender norms between West and East Germany; the East having traditionally more egalitarian gender role attitudes (Barth *et al.*, 2020; Lippmann, Giorgieff, and Senik, 2020). In West Germany, the trend toward more egalitarian attitudes is relatively new and associated with recent increases in maternal employment and daycare coverage of young children.

II Data

We combine data from two German surveys containing identical questions on gender norms to cover the 2008 to 2021 period. The COMPASS survey tracks the development of Covid-19 in Germany since March 12, 2020 (see Huebener *et al.*, 2021), and surveyed attitudes on gender roles between January 7 and February 14, 2021, for German citizens. The ALLBUS (German General Social Survey) is a biennial cross-sectional survey covering attitudes in Germany since 1980 (Wasmer *et al.*, 2017). Combined, we use ALLBUS data from three pre-pandemic years 2008, 2012, and 2016 along with COMPASS data for one pandemic year, 2021. To harmonize the data, we exclude individuals without German nationality from the ALLBUS data and restrict the sample to individuals aged 18-65. Our dataset includes 4,791 observations from the ALLBUS and 7,795 from the COMPASS dataset. Most variables, like age, region, and gender, are balanced across datasets (Table A.1).

We measure gender role attitudes toward working mothers based on whether respondents “disagree completely,” “disagree somewhat,” “somewhat agree,” or “agree completely” to the following statements:

1. *A working mother can have just as loving and trusting a relationship to her children as a mother who does not do paid work.*
2. *It is good for a child if its mother does paid work and does not only concentrate on the household.*
3. *A toddler will definitely suffer if its mother is doing paid work.*

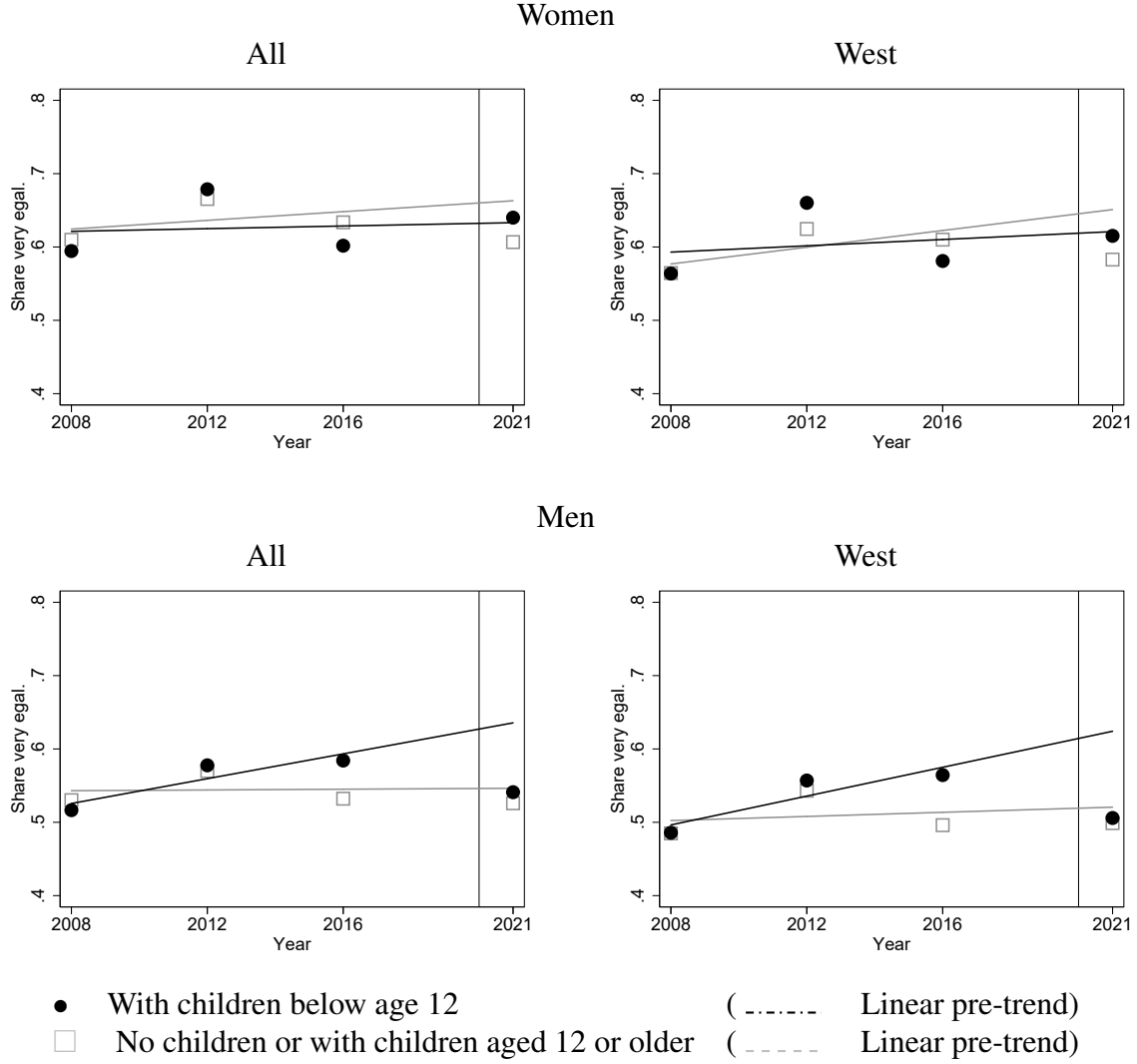
We classify answers as representing *very egalitarian* (or *egalitarian*) views if respondents “agree completely” (or at least “agree somewhat”) with statements 1 or 2 and “disagree completely” (or at least “disagree somewhat”) with statement 3. We count the number of *very egalitarian* and *egalitarian* statements per individual in two separate indices, which we standardize between zero and one.

III Empirical Approach

To isolate the effect of daycare and school closures on gender role attitudes, we exploit the fact that families with dependent children below the age of 12 have been more exposed to daycare and school closures (Goodman-Bacon and Marcus, 2020). Attitudes of these treated parents are compared to all other parents or those without children (control group).

Figure 1 plots the raw shares in *very egalitarian* gender role attitudes separately for the two groups by region and gender. Linear trends for the treatment and control groups reflect the evolution of gender roles based on pre-pandemic years. In general, women’s attitudes are more egalitarian than men’s and we observe a positive trend, which is particularly pronounced among West German men. Women’s attitudes do not differ by presence of dependent children. In contrast, the upward trend in gender norm “progressivity” is stronger among fathers of young children. In 2021, the group of men with dependent children in West Germany experience the largest drop relative to their predicted linear trend. A similar picture arises for egalitarian attitudes over time (Figure A.1).

Figure 1. Gender role attitudes toward maternal employment: Very egalitarian



Notes: Linear trend based on pre-pandemic years. Vertical line indicates start of pandemic.

Though the framing of questions is similar in both datasets, substantial differences due to the survey mode and the sampling design remain. However, our main empirical strategy implicitly accounts for this. We estimate the overall effect of Covid-19 on gender role attitudes based on the following difference-in-differences framework (see Huebener *et al.*, 2021):

$$y_{it} = \alpha + \beta(Covid_t \times ChildB12_i) + \gamma Covid_t + \delta ChildB12_i + \sigma(Trend \times ChildB12_i) + \theta X_{it} + \varepsilon_{it} \quad (1)$$

We regress the attitude indices for individual i at time t on $Covid_t$ which is equal to one if the observation stems from the period after the onset of the pandemic and zero otherwise, $ChildB12_i$

indicating whether there is a child below age 12 in the household, and the interaction of the two. Thus, the treatment effect of daycare and school closures – net of other Covid-19-measures affecting all individuals – is β . Vector X_{it} includes fixed effects for age and federal states. To account for differential trends prior to the pandemic, we include a group-specific linear trend and year fixed effects. Since our specification nets out potential overall changes in gender role attitudes resulting from the pandemic, we will underestimate the true effect if attitudes of the control group are also affected.

IV Results

We assess changes in *very egalitarian* gender role attitudes toward maternal employment in several specifications, separately by gender and region (Table 1). First, estimating changes within the treatment group using first differences from 2016 to 2021, we find a significant 7 percentage point reduction in the share reporting *very egalitarian* gender role attitudes among men in West Germany, but not among women. Next, we use all available pre-treatment years, namely 2008 to 2016, and account for pre-pandemic trends. The negative effect for men becomes larger and highly statistically significant. In the difference-in-difference framework, we find a reduction in very egalitarian gender role attitudes by West German men of 10 percentage points, which is significant at the 5 percent level. For women, we do not find significant effects. Similar results apply when estimating effects on *egalitarian* attitudes (Table A.2). Our results are robust to several sensitivity checks (Table A.3).

Table 1: Main results: very egalitarian gender role attitudes

	Women		Men	
	All	West	All	West
First difference (2021 – 2016)	0.02 (0.03)	0.02 (0.04)	-0.05 (0.03)	-0.07** (0.03)
N	752	577	693	528
Linear trend	-0.01 (0.04)	-0.02 (0.05)	-0.08** (0.04)	-0.12*** (0.04)
N	1,219	910	1,031	771
Difference-in-difference	0.05 (0.04)	0.05 (0.05)	-0.07* (0.04)	-0.10** (0.05)
N	6,286	4,708	6,300	4,643

Notes: First difference and linear-trend: change within treatment group incl. age and state fixed effects. Difference-in-difference based on eq. (1). All coefficients from separate regressions. Robust standard errors in parantheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Do the observed effects differ with respect to age of the youngest child or parental education? When comparing gender role attitudes between 2016 and 2021, the largest declines in very egalitarian attitudes occur among West German fathers of children below age six (Figure A.2). Intuitively, this seems plausible. Younger children require more care and this might become more salient during closures inducing more (self-)stereotyping in line with traditional norms. Furthermore, for these fathers, gender role attitudes may not yet be stable and, thus, more prone to change. This might be case, as the increase in day care centers and their egalitarian attitudes is a rather recent development in West Germany (Zoch and Schober, 2018).

Table 2: Heterogeneity analysis: very egalitarian

	Women		Men	
	All	West	All	West
Age 0-5	0.04 (0.06)	0.04 (0.07)	-0.05 (0.06)	-0.11* (0.06)
Age 6-11	0.06 (0.06)	0.07 (0.07)	-0.09* (0.06)	-0.10 (0.07)
N	6,286	4,708	6,300	4,643
High educated	0.10* (0.06)	0.09 (0.07)	-0.08 (0.05)	-0.10* (0.06)
Low educated	0.03 (0.06)	0.03 (0.06)	-0.06 (0.06)	-0.10 (0.07)
N	6,286	4,708	6,300	4,643
Urban	0.00 (0.07)	-0.02 (0.08)	-0.09 (0.07)	-0.11 (0.08)
Rural	0.06 (0.05)	0.07 (0.06)	-0.06 (0.05)	-0.09 (0.06)
N	6,286	4,708	6,300	4,643

Notes: All coefficients from separate regressions based on eq. (1). Robust standard errors in parantheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

This finding is confirmed in our difference-in-difference approach, where we interact the treatment indicator from equation (1) with group indicators and add group-specific pre-pandemic trends (Table 2). The main effect stems from fathers with very young children. Moreover, the drop is statistically significant for high educated fathers.

V Discussion and Conclusion

This paper studies how daycare and school closures designed to contain the spread of Covid-19 impacted gender role attitudes of parents in Germany. We find that West German fathers' (very) egalitarian attitudes toward maternal employment dropped substantially in 2021. Attitudes by

women were not affected. Overall, shocks like the pandemic can reverse recent trends toward more egalitarian gender attitudes. This change in attitudes matters, as the pandemic's longer term impact on gender equality and parental employment will be determined not only by short-run effects on employment and working hours, but also by prevailing gender roles.

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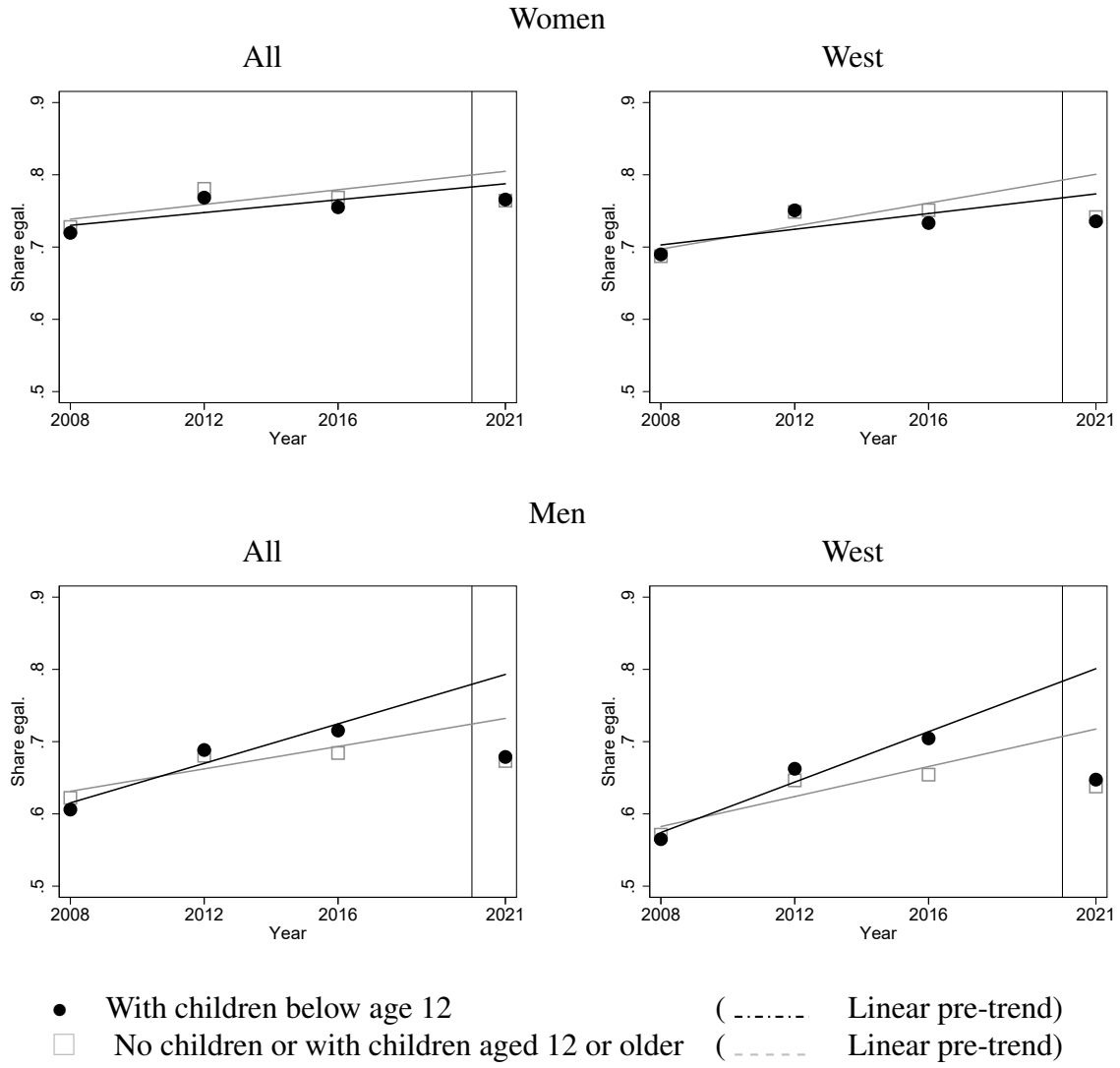
Supplementary material related to this article can be found in the Appendix.

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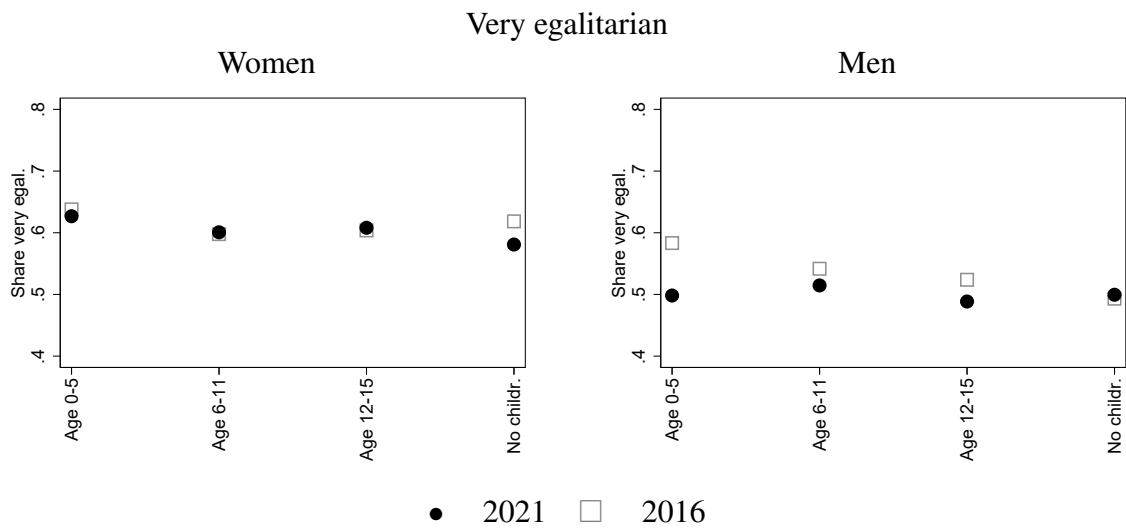
Appendix

Figure A.1. Gender role attitudes toward maternal employment: egalitarian



Notes: Linear trend based on pre-pandemic years. Vertical line indicates start of pandemic.

Figure A.2. Gender ideology by child age in West Germany



Notes: Share of very egalitarian gender role attitudes by child age 2016 and 2021.

Table A.1: Descriptives

	<i>ALLBUS</i>		<i>COMPASS</i>	
	Mean	(SD)	Mean	(SD)
Age	43.65	(13.30)	43.67	(13.09)
Female	0.51	(0.50)	0.50	(0.50)
No or basic schooling	0.28	(0.45)	0.13	(0.34)
Medium schooling	0.36	(0.48)	0.48	(0.50)
Higher schooling	0.36	(0.48)	0.39	(0.49)
Household size	2.13	(0.86)	2.46	(1.22)
Partner in household	0.55	(0.50)	0.74	(0.44)
Single parent	0.09	(0.28)	0.03	(0.16)
Two parent household	0.22	(0.41)	0.21	(0.41)
No children	0.70	(0.46)	0.76	(0.43)
Age 0-2	0.07	(0.26)	0.04	(0.20)
Age 3-5	0.05	(0.22)	0.06	(0.24)
Age 6-11	0.11	(0.31)	0.08	(0.28)
Age 12-16	0.07	(0.25)	0.05	(0.22)
Household net income	2916.55	(1395.19)	2782.52	(1219.78)
Employed	0.75	(0.43)	0.80	(0.40)
Full time	0.55	(0.50)	0.60	(0.49)
Part time	0.20	(0.40)	0.18	(0.38)
Not working	0.25	(0.43)	0.22	(0.41)
East	0.20	(0.40)	0.20	(0.40)
Observations	4,791		7,795	

Notes: Weighted.

Table A.2: Main results: egalitarian gender role attitudes

	Women		Men	
	All	West	All	West
First difference (2021 – 2016)	-0.01 (0.03)	-0.03 (0.04)	-0.05 (0.03)	-0.08** (0.04)
N	752	577	693	528
Linear trend	-0.03 (0.04)	-0.05 (0.05)	-0.11** (0.05)	-0.16*** (0.05)
N	1,219	910	1,031	771
Difference-in-difference	0.01 (0.05)	0.02 (0.05)	-0.07 (0.05)	-0.09 (0.06)
N	6,286	4,708	6,300	4,643

Notes: First difference and linear-trend: change within treatment group incl. age and state fixed effects. Difference-in-difference based on eq. (1). All coefficients from separate regressions. Robust standard errors in parantheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A.3: Robustness checks

	Egalitarian				Very egalitarian			
	Women		Men		Women		Men	
	All	West	All	West	All	West	All	West
Panel A: Linear trend								
No control variables	-0.02 (0.04)	-0.04 (0.05)	-0.10** (0.05)	-0.14** (0.05)	-0.00 (0.04)	-0.01 (0.04)	-0.09** (0.04)	-0.11*** (0.04)
N	1,219	910	1,031	771	1,219	910	1,031	771
Panel B: Difference-in-difference								
No control variables	0.02 (0.05)	0.02 (0.05)	-0.05 (0.05)	-0.07 (0.06)	0.06 (0.04)	0.05 (0.05)	-0.06 (0.04)	-0.09* (0.05)
N	6,286	4,708	6,300	4,643	6,286	4,708	6,300	4,643
2016 only	0.00 (0.03)	0.01 (0.04)	-0.04 (0.04)	-0.06 (0.04)	0.05 (0.03)	0.05 (0.04)	-0.04 (0.03)	-0.07** (0.03)
N	4,492	3,510	4,516	3,477	4,492	3,510	4,516	3,477
No year fixed effects	0.01 (0.05)	0.02 (0.05)	-0.06 (0.05)	-0.09 (0.06)	0.05 (0.04)	0.05 (0.05)	-0.07* (0.04)	-0.10** (0.05)
N	6,286	4,708	6,300	4,643	6,286	4,708	6,300	4,643

Notes: Linear-trend: change within treatment. Difference-in-difference based on eq. (1). All coefficients from separate regressions. Robust standard errors in parantheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.