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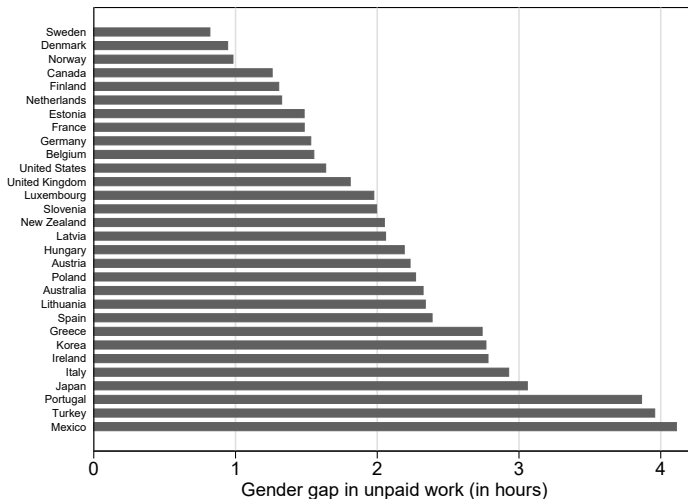
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Suddenly a Stay-At-Home Dad: The Effect of Job Loss on Fathers' Time Investment in the Household

Gender Gap in Unpaid Work

Source: OECD Time-Use Database, 2015 or nearest year.

Motivation

- Persistent gender difference in domestic work in virtually all countries, despite strong increase in female (and maternal) labor force participation and public child care coverage
- Changes in paternity leave regulation induced limited shifts in fathers' time investments + selection issue of paternity leave policies
- Little evidence on causal factors that actually shape and change the intra-household allocation of unpaid work

Q: How do negative employment shocks change paternal time investments?

Related Literature

- **Gender differences in time allocation:**
  - Coltrane (2000); Hook (2010); Sanchez and Thomson (1997); Bianchi (2000); Samtleben (2019)
- **Paternity leave and time investment:**
  - Bünning (2015); Schober (2014); Ekberg et al. (2013); Tamm (2019); Patnaik (2019); Pailhé et al. (2018)
- **Economic shocks and allocation of housework:**
  - Foster and Stratton (2018): parental unemployment and promotion, HLFS
  - Fauser (2019) and Voßemer and Heyne (2019): parental unemployment, SOEP
- **Negative consequences of parental unemployment on children's outcomes:**
  - Financial constraints and psychological distress: Mörk et al. (2014); Coelli (2011); Schaller and Zerpa (2019); Peter (2016)

Theory and Channels

1 Time availability
- Job loss $\rightarrow$ more time available $\rightarrow$ partly directed to child care and housework

2 Financial constraints and outsourcing
- Job loss $\rightarrow$ less money available for outsourcing of tasks (childcare, nanny, cleaner) $\rightarrow$ more domestic duties for parents

3 Bargaining
- Job loss $\rightarrow$ lower bargaining power in division of domestic duties $\rightarrow$ relatively more domestic duties

4 Gender role attitudes
- Job loss $\rightarrow$ exposure to nontraditional division of labor $\rightarrow$ change in gender attitudes $\rightarrow$ more equal division of domestic work

5 Emotional bonding
- Job loss $\rightarrow$ father spends more time with child(ren) $\rightarrow$ stronger emotional bond $\rightarrow$ permanent change in time investment

Theory and Channels: Hypothesis

| | Persistent | Type of Work | | Days | | Partner |
		CC	HW	Weekday	Weekend	
Time Availability	✗	✓	✓	✓	✗	✓(-)
Financial Constraints	✗	✓	✓	✓	✗	✓(+)
Bargaining	✗	✓/✗	✓	✓	✓	✓(-)
Gender Role Attitudes	✓	✓	✓	✓	✓	✓(-)
Emotional Bonding	✓	✓	✗	✓	✓	✗

This Paper: Contributions

We study the **effect of paternal involuntary unemployment** on time allocated to **child care** and **housework**

1. **Focus on child care:**
   To the best of our knowledge we are the first to do so

2. **Event study approach with individual fixed effects:**
   We analyze short- and long-run effects

3. **Mechanisms:**
   We calculate heterogenous effects and differentiate between weekdays and weekends

4. **Partner spillovers and household investments:**
   If paternal time allocation changes, what happens with the partner? How do total time investments change? How does the outsourcing change?

Results in a Nutshell

- Paternal involuntary job loss increases average domestic work in the short run (period after job loss)
- **Long term effects** are
  - **Positive** for fathers who remain unemployed
  - **Negative** for fathers who return to employment (and have a not working partner
- **Mothers** react to changed paternal time allocation:
  - **Working** mothers **reduce** domestic time investments
  - **Not working** mothers **increase** domestic time investments
- **Households increase** domestic time investment if both partners are not working and **decrease** it when both are in employment

Data

- German Socio-Economic Panel, SOEP, waves 1992-2018
- **Outcome:** Time use on weekdays *(annually)* and weekends *(bienially)*
  - *What is a typical day like for you? How many hours do you spend on the following activities on a typical weekday, Saturday, and Sunday?*
    - Job, apprenticeship, second job
    - **Errands**
    - **Housework**
    - **Child care**
    - Care and support for persons in need of care
    - Education or further training
    - Repairs on and around the house, car repairs, garden work
    - Physical activities
    - Other leisure activities and hobbies

Histogram

Data cont.

- **Unemployment due to an involuntary job loss**
  How did that job end?
    - **My place of work or office closed**
    - I resigned
    - **I was dismissed by my employer**
    - Mutual agreement with my employer
    - I completed a temporary job or apprenticeship
    - I reached retirement age / retired
    - I took a leave of absence(*Beurlaubung*) / maternity leave
      (*Mutterschutz*) / parental leave (*Elternzeit*)
    - I gave up self-employment / closed my business

Data cont.

- **Sample restrictions:**
    - Paternal age 18-65 living with one dependent child up to the age of 18
    - At time of job loss:
        - Living together with partner
        - Not in education, self-employed, or retired
        - No parallel job loss of partner
    - Observed for at least two periods
    - Non-missing information on main variables

- **Final sample:**
    - 68,871 father-year combinations from 8,761 fathers observed for 8 years on average of which 1,301 experience a job loss

Event Study Approach

$$y_{it} = \sum_{j=\underline{j}}^{\overline{j}} \beta_j b_{it}^j + \alpha_i + \theta_t + X_{it} + \epsilon_{it} \qquad (1)$$

- y_{it} - Outcome y of individual i at time t
- b_{it}^j - Treatment indicator for an event happening $j \in [\underline{j}, \overline{j}]$ periods away from t
- α_i - Individual fixed effects
- θ_t - Time fixed effects
- X_{it} - Vector of control variables
- ϵ_{it} - Robust standard errors

Building the Empirical Model and Channel Investigation

Individual and **time fixed effects** $+$

1. **Interview characterstics**:
   - Mode of interview (D)
   - Gender of interviewer (D)

2. **Spousal characteristics**:
   - Age, employment status

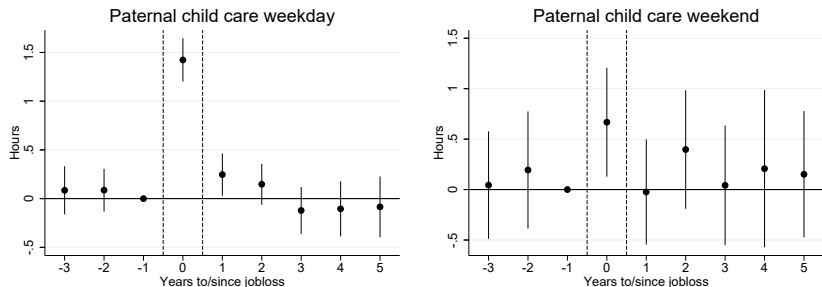3. **Child characteristics**:
   - Youngest child: age, in daycare (D), in school (D), in allday care (D)
   - Number of children in household

4. **Co-determined characteristics**:
   - Individuals' and partners wellbeing, health, and household income

Descriptives

Main Results

Paternal child care weekday

Paternal child care weekend

Notes: The figure plots coefficient estimates from an interaction of the involuntary job loss with indicators on the time difference to the event. The regressions include individual and year fixed effects and interview controls. The dashed lines indicate the timing of the job loss. Confidence intervals refer to the 95 percentile.
Source: Own calculations based on SOEP (2019).

Regression results   Added Controls

Main Results cont.

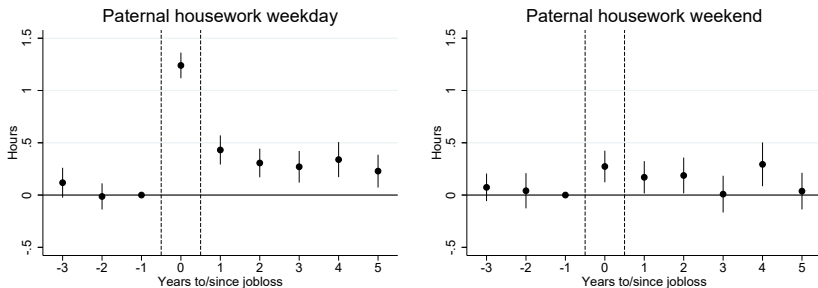Paternal housework weekday · Paternal housework weekend

Notes: The figure plots coefficient estimates from an interaction of the involuntary job loss with indicators on the time difference to the event. The regressions include individual and year fixed effects and interview controls. The dashed lines indicate the timing of the job loss. Confidence intervals refer to the 95 percentile.
Source: Own calculations based on SOEP (2019).

Regression results   Added Controls

Robustness Checks

1 Fathers with job loss only

2 Plant closures only

3 Fathers living with partner

4 Excluding very large hours

Robustness checks Childcare   Robustness checks Housework

Heterogeneity: Employment Status and Partner Interaction

	Estimated treatment effect of job loss			
	Child care		Housework	
	Weekday	Weekend	Weekday	Weekend
Job loss ($t = 0$)				
Both not working	1.464***	0.344	1.023***	0.065
	(0.161)	(0.359)	(0.073)	(0.083)
Mother working	1.381***	0.846*	1.562***	0.450***
	(0.151)	(0.334)	(0.096)	(0.110)
1-2 periods post				
Both not working	0.903***	0.608	0.743***	-0.004
	(0.197)	(0.434)	(0.107)	(0.109)
Father working	-0.586***	-0.195	-0.258**	-0.060
	(0.143)	(0.374)	(0.084)	(0.096)
Mother working	0.886***	0.150	1.245***	0.438**
	(0.192)	(0.393)	(0.146)	(0.153)
Both working	-0.165	0.128	0.109	0.228*
	(0.117)	(0.287)	(0.075)	(0.095)

Notes: The table reports treatment effect estimates of an involuntary job loss on paternal time alloca-
tion. Robust standard errors in parantheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.
Source: own calculations based on SOEP (2019).

Further Heterogeneities

- Child age: Results
  Effects are larger when the youngest child is under age six and when the child is not in daycare

- Education: Results
  Effects are more pronounced among the highly educated

- Child gender:
  No difference

Partner Spillovers

	Estimated treatment effect of job loss on partner			
	Child care		Housework	
	Weekday	Weekend	Weekday	Weekend
Job loss of the Father				
Both not working	0.825***	0.180	0.423***	0.018
	(0.225)	(0.398)	(0.100)	(0.145)
Mother working	-1.351***	-0.710	-0.518***	-0.387**
	(0.215)	(0.405)	(0.090)	(0.126)
1-2 periods post				
Both not working	1.155***	1.362**	0.331*	-0.020
	(0.313)	(0.494)	(0.132)	(0.153)
Father working	0.969***	0.594	0.478***	0.108
	(0.286)	(0.463)	(0.134)	(0.167)
Mother working	-0.956***	-0.519	-0.772***	-0.325
	(0.255)	(0.435)	(0.129)	(0.169)
Both working	-0.453*	0.071	-0.427***	-0.095
	(0.220)	(0.380)	(0.101)	(0.116)

Notes: The table reports treatment effect estimates of an involuntary job loss on paternal time allocation.
Robust standard errors in parantheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.
Source: own calculations based on SOEP (2019).

Household Spillovers

| | Estimated treatment effect of job loss | | | |
| | Child care | | Housework | |
	Weekday	Weekend	Weekday	Weekend
Job loss				
Both not working	2.290***	1.078	1.446***	0.174
	(0.293)	(1.215)	(0.127)	(0.358)
Mother working	0.030	0.298	1.045***	0.127
	(0.276)	(1.214)	(0.124)	(0.352)
1-2 periods post				
Both not working	2.057***	3.992*	1.074***	-0.031
	(0.390)	(1.582)	(0.183)	(0.415)
Father working	0.383	0.854	0.220	0.086
	(0.325)	(1.332)	(0.154)	(0.392)
Mother working	-0.070	-0.758	0.473**	0.218
	(0.321)	(1.411)	(0.176)	(0.423)
Both working	-0.618*	0.415	-0.318*	0.233
	(0.261)	(1.101)	(0.126)	(0.297)

Notes: The table reports treatment effect estimates of an involuntary job loss on paternal time allocation. Robust standard errors in parentheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.
Source: own calculations based on SOEP (2019).

Conclusion

- Paternal involuntary job loss increases average domestic work in the short run
- Positive Long term effects only for fathers who remain unemployed and **negative** for fathers who return to employment
  - → **Time availability**
  - → **No emotional bonding or gender role attitude changes**
- Working mothers reduce domestic time investments, while not working mothers increase time investments
  - → **Bargaining**
- Households increase domestic time investment if both partners are not working and decrease it when both are in employment
  - → **Financial constraints and outsourcing**
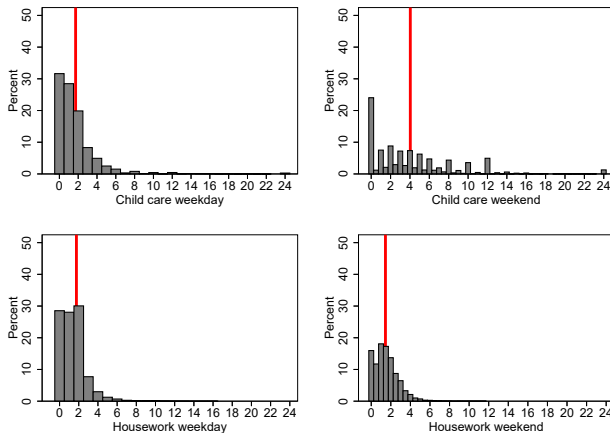
THANK YOU FOR YOUR ATTENTION!

Comments and Feedback are highly welcome.

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Paternal Time Spent on Child Care and Housework

Notes: Figure shows the distribution of time variables of fathers. The red line indicates the mean.

Source: Own calculations based on SOEP (2019).

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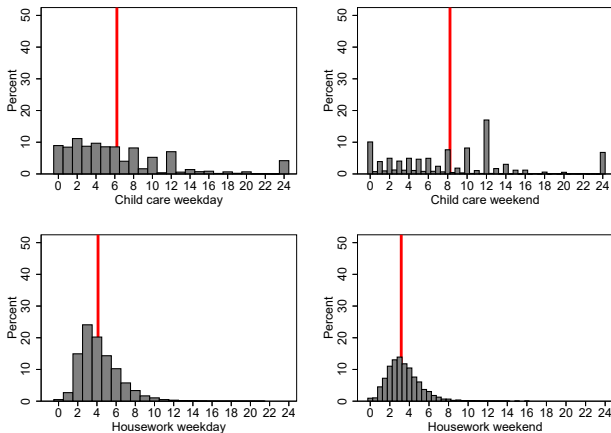# Maternal Time Spent on Child Care and Housework

Notes: Figure shows the distribution of time variables of mothers. The red line indicates the mean.

Source: Own calculations based on SOEP (2019).

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Descriptives

	Inv. job loss		No inv. job loss	
	Sample mean	s.d.	Sample mean	s.d.
Paternal characteristics (time invariant)				
No degree (D)	0.22	(0.41)	0.12	(0.33)
Vocational degree (D)	0.70	(0.46)	0.65	(0.48)
Academic degree (D)	0.08	(0.28)	0.25	(0.43)
Migration background (D)	0.36	(0.48)	0.25	(0.43)
Number of observations	7,369		61,502	
Interview characteristics				
Self completed	0.32	(0.47)	0.35	(0.48)
Orally (compl. by other person)	0.67	(0.47)	0.65	(0.48)
Proxy/Translator	0.01	(0.09)	0.00	(0.06)
Female interviewer	0.40	(0.49)	0.38	(0.49)
Number of observations	7,369		61,502	

Notes: The table provides descriptive statistics. Standard deviations are reported in parentheses.
Source: own calculations based on SOEP (2019).

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Descriptives cont.

	Inv. job loss		No inv. job loss	
	Sample mean	s.d.	Sample mean	s.d.
Partner characteristics (for those with a partner)				
Partner in household	1.00	(0.00)	1.00	(0.00)
Age	36.59	(7.48)	38.40	(6.93)
Working	0.48	(0.50)	0.54	(0.50)
In education (D)	0.02	(0.13)	0.02	(0.14)
In labor force	0.81	(0.39)	0.84	(0.37)
Number of observations	6,888		53,860	
Child characteristics				
Total number of children up to age 18	1.86	(0.97)	1.77	(0.87)
Age child 1	7.36	(4.70)	7.63	(4.86)
In daycare (D)	0.25	(0.43)	0.26	(0.44)
In school (D)	0.49	(0.50)	0.52	(0.50)
In daycare allday (D)	0.11	(0.31)	0.10	(0.30)
In school allday (D)	0.11	(0.32)	0.11	(0.31)
Number of observations	7,369		61,502	
Endogenous controls				
Net household income (month)	2655.71	(1071.12)	3854.71	(2143.89)
Subjective wellbeing	6.54	(1.85)	7.37	(1.56)
Subjective wellbeing partner	6.83	(1.78)	7.47	(1.53)
Mental health	50.38	(9.46)	51.34	(8.73)
Physical health	50.67	(9.55)	53.19	(7.86)
Number of observations	4,367		36,545	

Notes: The table provides descriptive statistics. Standard deviations are reported in parentheses.
Source: own calculations based on SOEP (2019).

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Regression results

| | Estimated treatment effect of job loss | | | |
| | Child care | | Housework | |
	Weekday	Weekend	Weekday	Weekend
3 periods pre	0.085	0.044	0.118	0.074
	(0.126)	(0.272)	(0.073)	(0.067)
2 periods pre	0.086	0.194	-0.013	0.041
	(0.112)	(0.296)	(0.064)	(0.086)
Job loss	1.423***	0.668*	1.240***	0.273***
	(0.114)	(0.275)	(0.063)	(0.077)
1 period post	0.246*	-0.024	0.431***	0.170*
	(0.111)	(0.266)	(0.071)	(0.079)
2 periods post	0.147	0.397	0.307***	0.187*
	(0.107)	(0.300)	(0.070)	(0.087)
3 periods post	-0.122	0.042	0.270***	0.009
	(0.123)	(0.302)	(0.077)	(0.090)
4 periods post	-0.105	0.207	0.339***	0.294**
	(0.144)	(0.398)	(0.085)	(0.107)
5 periods post	-0.085	0.152	0.229**	0.037
	(0.159)	(0.319)	(0.080)	(0.089)
Sample mean	1.66	4.08	1.40	1.52
Number of observations	68,871	35,451	68,871	35,451

Notes: The table reports treatment effect estimates of an involuntary job loss on paternal time allocation. Regressions include individual and time fixed effects and interview controls. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.
Source: Own calculations based on SOEP (2019).

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Channels Child Care

	(1) Ind. and year FE + int. controls		(2) + partner controls		(3) + child controls		(4) + end. controls	
	Estimated treatment effect of job loss							
Child care weekday								
2 periods pre	0.086	(0.112)	0.094	(0.112)	0.077	(0.112)	0.067	(0.188)
Job loss	1.423***	(0.114)	1.417***	(0.113)	1.411***	(0.111)	1.496***	(0.153)
1 to 2 periods post	0.203*	(0.096)	0.210*	(0.096)	0.184	(0.095)	0.095	(0.123)
3 to 4 periods post	-0.111	(0.117)	-0.097	(0.116)	-0.128	(0.116)	-0.089	(0.154)
Number of obs.	68,871		68,871		68,871		36,067	
Child care weekend								
2 periods pre	0.136	(0.293)	0.123	(0.292)	0.094	(0.294)	-0.248	(0.646)
Job loss	0.606*	(0.271)	0.578*	(0.270)	0.585*	(0.267)	0.213	(0.512)
1 to 2 periods post	0.136	(0.241)	0.136	(0.241)	0.093	(0.239)	-0.492	(0.438)
3 to 4 periods post	0.080	(0.280)	0.107	(0.279)	0.021	(0.275)	-0.307	(0.484)
Number of obs.	35,451		35,451		35,451		15,497	

Notes: The table reports treatment effect estimates of an involuntary job loss on paternal time allocation. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.
Source: Own calculations based on SOEP (2019).

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Channels Housework

	Estimated treatment effect of job loss							
	(1) Ind. and year FE + int. controls		(2) + partner controls		(3) + child controls		(4) + end. controls	
Housework weekday								
2 periods pre	-0.013	(0.064)	-0.012	(0.064)	-0.014	(0.063)	-0.000	(0.099)
Job loss	1.240***	(0.063)	1.232***	(0.062)	1.231***	(0.062)	1.234***	(0.082)
1 to 2 periods post	0.377***	(0.062)	0.370***	(0.062)	0.368***	(0.062)	0.416***	(0.086)
3 to 4 periods post	0.304***	(0.070)	0.302***	(0.070)	0.300***	(0.070)	0.335***	(0.099)
Number of obs.	68,871		68,871		68,871		36,067	
Housework weekend								
2 periods pre	0.024	(0.086)	0.025	(0.085)	0.023	(0.085)	-0.074	(0.148)
Job loss	0.254***	(0.075)	0.248***	(0.075)	0.248***	(0.075)	0.108	(0.134)
1 to 2 periods post	0.169*	(0.069)	0.160*	(0.068)	0.156*	(0.068)	0.015	(0.109)
3 to 4 periods post	0.115	(0.078)	0.109	(0.078)	0.104	(0.078)	0.026	(0.124)
Number of obs.	35,451		35,451		35,451		15,497	

Notes: The table reports treatment effect estimates of an involuntary job loss on paternal time allocation. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.
Source: Own calculations based on SOEP (2019).

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Robustness Checks Child Care

	(1) Fathers with job loss only		(2) Plant closures		(3) Fathers living with partner		(4) Excl. very large hours	
Estimated treatment effect of job loss								
Child care weekday								
2 periods pre	0.065	(0.118)	-0.332	(0.186)	0.040	(0.120)	0.179	(0.103)
Job loss	1.429***	(0.117)	1.308***	(0.223)	1.422***	(0.118)	1.209***	(0.093)
1 to 2 periods post	0.247*	(0.112)	-0.218	(0.165)	0.161	(0.099)	0.248**	(0.086)
3 to 4 periods post	-0.054	(0.154)	-0.430*	(0.186)	-0.119	(0.123)	0.001	(0.100)
Number of obs.	7,369		63,551		59,764		68,232	
Child care weekend								
2 periods pre	0.154	(0.303)	-0.618	(0.580)	0.143	(0.314)	0.183	(0.241)
Job loss	0.610*	(0.280)	-0.113	(0.505)	0.580*	(0.287)	0.464*	(0.218)
1 to 2 periods post	0.072	(0.256)	-0.794	(0.495)	0.164	(0.254)	0.082	(0.191)
3 to 4 periods post	-0.035	(0.332)	-0.977	(0.560)	0.206	(0.290)	0.008	(0.227)
Number of obs.	3,770		32,743		30,753		34,918	

Notes: The table reports treatment effect estimates of an involuntary job loss on paternal time allocation. Robust standard errors in parantheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.
Source: own calculations based on SOEP (2019).

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Robustness Checks Housework

	Estimated treatment effect of job loss							
	(1) Fathers with job loss only		(2) Plant closures		(3) Fathers living with partner		(4) Excl. very large hours	
Housework weekday								
2 periods pre	-0.011	(0.065)	-0.395***	(0.119)	0.002	(0.069)	-0.022	(0.063)
Job loss	1.238***	(0.064)	1.112***	(0.118)	1.265***	(0.063)	1.230***	(0.063)
1 to 2 periods post	0.375***	(0.066)	0.032	(0.116)	0.365***	(0.066)	0.390***	(0.062)
3 to 4 periods post	0.300***	(0.082)	-0.005	(0.132)	0.293***	(0.073)	0.307***	(0.071)
Number of obs.	7,369		63,551		59,764		68,232	
Housework weekend								
2 periods pre	0.028	(0.087)	0.102	(0.151)	0.024	(0.092)	0.017	(0.087)
Job loss	0.245**	(0.077)	0.302*	(0.146)	0.246**	(0.079)	0.263***	(0.075)
1 to 2 periods post	0.156*	(0.075)	0.100	(0.120)	0.136	(0.070)	0.187**	(0.069)
3 to 4 periods post	0.089	(0.093)	0.098	(0.135)	0.121	(0.080)	0.122	(0.078)
Number of obs.	3,770		32,743		30,753		34,918	

Notes: The table reports treatment effect estimates of an involuntary job loss on paternal time allocation. Robust standard errors in parantheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.
Source: own calculations based on SOEP (2019).

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Heterogeneity: Child Age and Daycare

	Child care		Housework	
	Weekday	Weekend	Weekday	Weekend
Job loss				
Children > 6	0.690***	0.313	1.254***	0.276**
	(0.109)	(0.303)	(0.082)	(0.091)
Child $<= 6$ not in daycare	2.697***	0.812	1.210***	0.162
	(0.260)	(0.482)	(0.098)	(0.126)
Child $<= 6$ in daycare	1.431***	0.856*	1.209***	0.285*
	(0.219)	(0.390)	(0.122)	(0.119)
1-2 periods post				
Children > 6	0.231*	0.056	0.425***	0.180*
	(0.099)	(0.261)	(0.072)	(0.081)
Child $<= 6$ not in daycare	0.478*	0.413	0.415***	0.232*
	(0.237)	(0.410)	(0.112)	(0.116)
Child $<= 6$ in daycare	0.006	0.107	0.196	0.053
	(0.158)	(0.366)	(0.101)	(0.103)
3-4 periods post				
Children > 6	-0.113	0.016	0.345***	0.058
	(0.120)	(0.298)	(0.085)	(0.092)
Child $<= 6$ not in daycare	0.268	-0.022	0.263*	0.099
	(0.295)	(0.644)	(0.125)	(0.139)
Child $<= 6$ in daycare	-0.141	0.459	0.197	0.220
	(0.217)	(0.447)	(0.102)	(0.121)
Number of observations	68,871	35,451	68,871	35,451

Notes: The table reports treatment effect estimates of an involuntary job loss on paternal time allocation. Robust standard errors in parantheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.
Source: own calculations based on SOEP (2019).

Heterogeneity: Education

	Child care		Housework	
	Weekday	Weekend	Weekday	Weekend
Job loss				
Voc. or academic degree	1.729***	1.084*	1.033***	0.093
	(0.265)	(0.473)	(0.095)	(0.117)
No degree	1.330***	0.472	1.307***	0.302***
	(0.123)	(0.293)	(0.072)	(0.086)
1-2 periods post				
Voc. or academic degree	0.415*	0.744	0.563***	0.101
	(0.202)	(0.469)	(0.111)	(0.125)
No degree	0.143	-0.031	0.322***	0.187*
	(0.106)	(0.253)	(0.069)	(0.075)
3-4 periods post				
Voc. or academic degree	-0.122	0.082	0.401***	0.120
	(0.267)	(0.551)	(0.106)	(0.138)
No degree	-0.107	0.088	0.278***	0.112
	(0.119)	(0.297)	(0.078)	(0.085)
Number of observations	68,871	35,451	68,871	35,451

Notes: The table reports treatment effect estimates of an involuntary job loss on paternal time allocation. Robust standard errors in parantheses. * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.
Source: own calculations based on SOEP (2019).

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