Who is Doing the Chores and Childcare in Dual-earner Couples during the COVID-19 Era of Working from Home?

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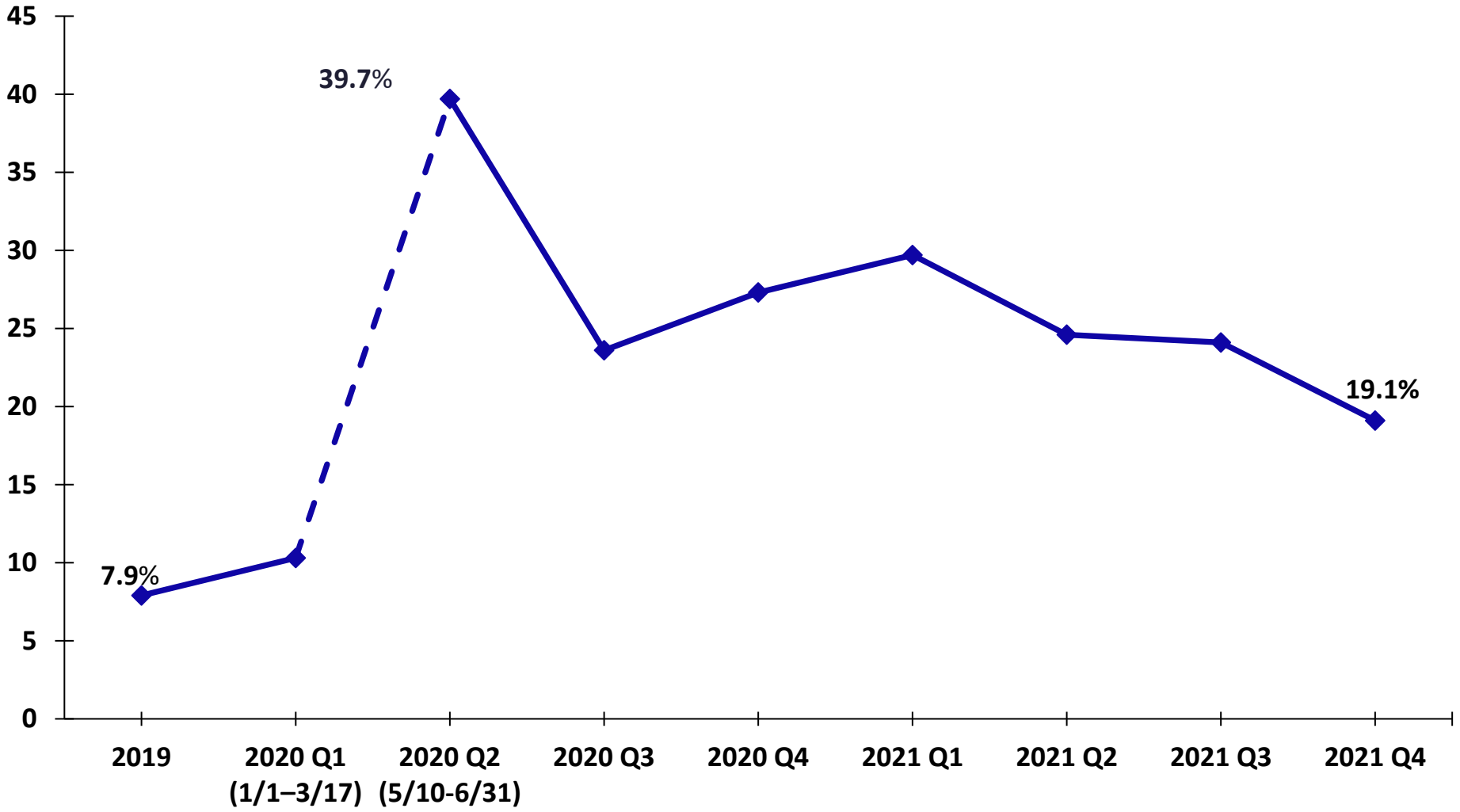
Percentage of Full 4h+ Workdays Worked from Home



Source: American Time Use Survey 2019–21

Notes: The dashed line indicates missing data when diaries were not collected.

Background

- There was a massive increase in remote work in 2020.
  - 35.4% worked at home *because of* COVID-19 in last four weeks (May 2020 CPS).
- 37–45% of all jobs just prior to the pandemic could be done from home (Dey et al. 2020, 2021; Dingel and Neiman 2020).
  - Take-up of work from home was strongly positively correlated with whether their job was considered "teleworkable."
- Teleworkers save about 75 min on work-from-home days by reducing time spent on commuting and grooming activities (Vernon & Pabilonia 2022).
- The pandemic increased the demand for household-provided childcare and chores.

Questions

1) How do mothers and fathers working from home (WFH) spend their time compared to those working away from home (WAFH)?
   - We focus on differences in time spent on paid work, childcare, and household production.
   - Did the COVID-19 pandemic change these differences? Selection pre-pandemic
2) Does parents' time use when WFH vary by the WFH status of their partner? (COVID period only)
   - Do they share chores and childcare more equally when both WFH?
3) How does having a child at home during core working hours (9 a.m. to 2 p.m.) impact mothers' and fathers' time use on WFH days?

Hypotheses

- Parents who WFH will pick up chores and childcare due to reduced time constraints and may work fewer paid hours.
- When both parents WFH, they will share chores and childcare more equally.
- If children are home during the workday, mothers' time allocation will be affected more when both WFH because they have traditionally been the primary caregivers.

American Time Use Survey (2015–2021)

- Nationally representative sample of individuals in households who recently completed their final month in the CPS
- Time diary covers a 24-hour period beginning at 4:00 a.m. on the day before the interview
  - One diary for one respondent per household
- For most activities, interviewers collect information on
  - where the respondent was
  - who was in the room or accompanied the respondent while away from home for each activity
  - Secondary childcare of children under age 13

Challenges

- A single respondent per household aged 15 and older
- WFH status of the other parent is not observable
  - Predict prob(WFH) using probit models separately by gender
  - Main innovation of this study
- Not "normal" times
  - Many childcare facilities remained closed/not enough childcare workers
    - 18% of daycares were closed in July 2020 (National Association for the Education of Young Children)
  - Many public schools were virtual or hybrid during the 2020–21 school year
    - 66% of parent had a child in remote schooling in spring 2021 (Aughinbaugh and Rothstein 2021)
  - Leisure choices constrained
  - Results may not be generalizable outside of the pandemic period
- Some mothers exited the labor force → potential selection issues

Main Sample

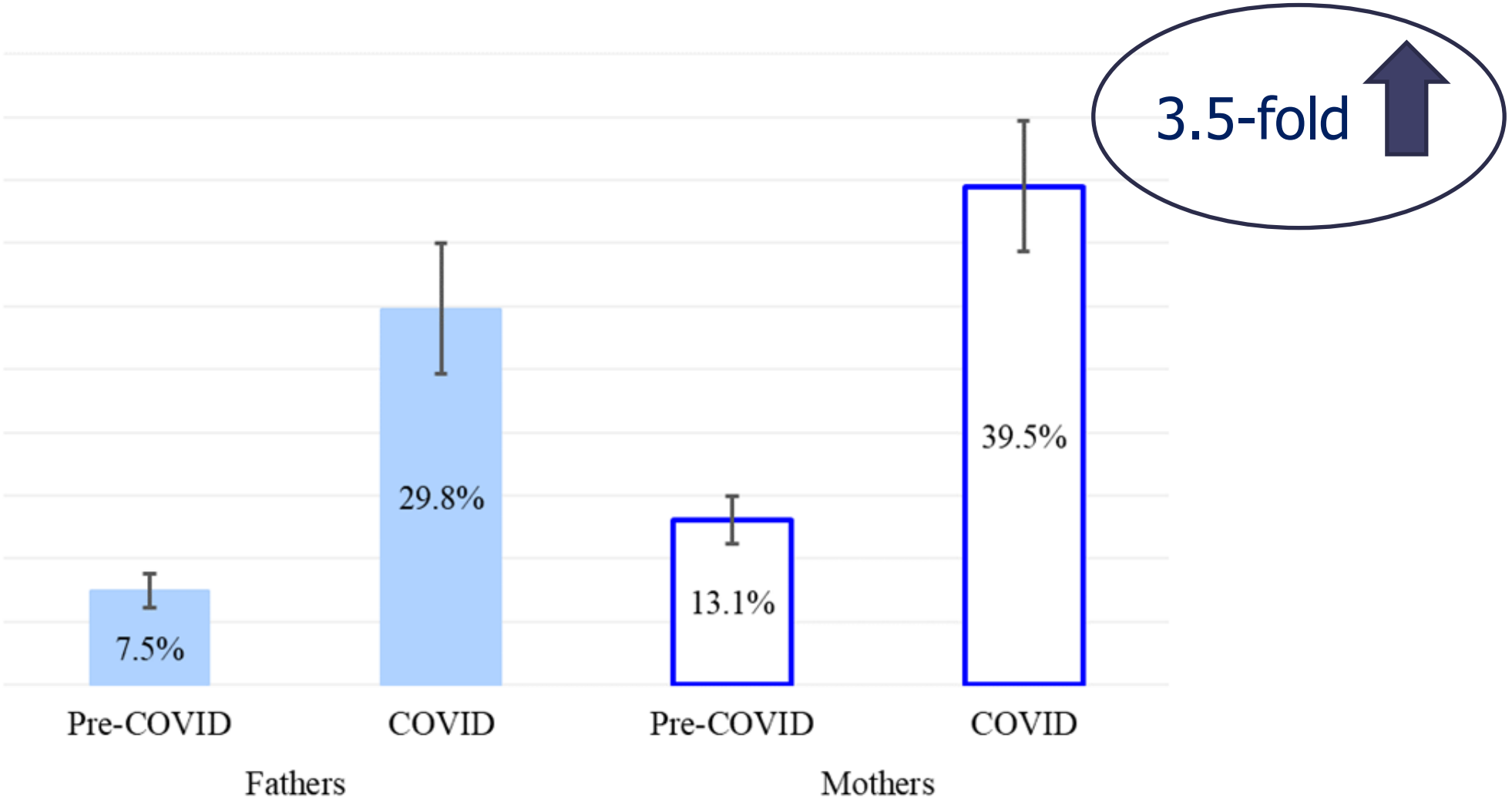
- Mothers and fathers in dual-earner couples
- Both members of the couple are aged 21–65
- Own household children under age 13
- Weekday workdays with >=1 hour of paid work
- No diaries collected for March 18th – May 9th

Work location	Pre-COVID Observations (2015–Feb 2020)	COVID Observations (May 2020–Dec 2021)
Fathers, WAFH	1321	259
Mothers, WAFH	1202	189
Fathers, WFH	126	132
Mothers, WFH	193	148
Total	1,137	728

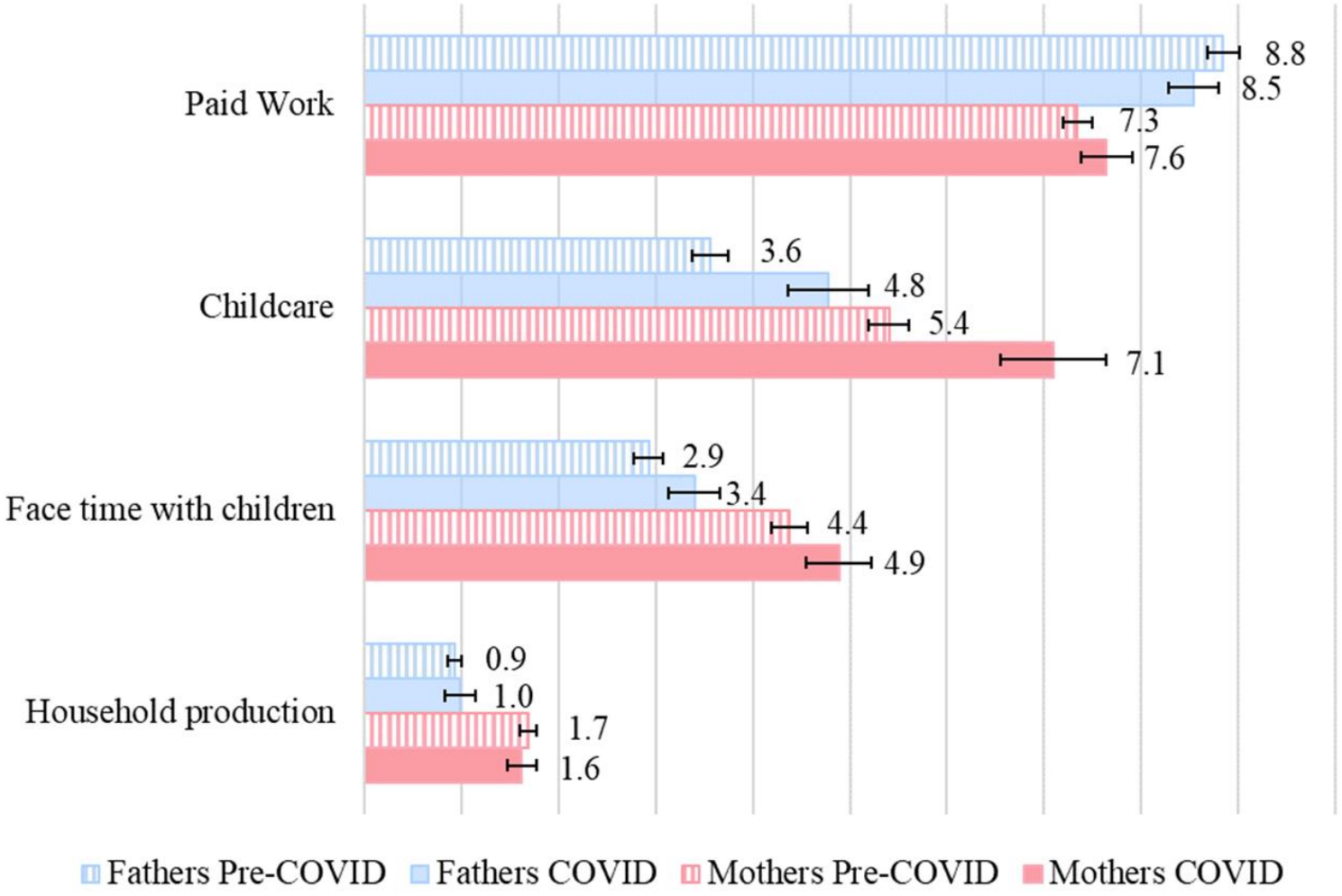
Sub-samples

- Weekday workdays during the COVID period
  - Both parents are full-time wage and salary workers
    - Mothers and fathers have more similar work hours
    - Less control over scheduled hours than the self-employed
  - Parents interviewed about school-year diary days
    - Virtual schooling demands attention
    - Summer camps limited in 2020
- Parents on WFH days
  - Is a child at home too?
    - Definition: At least 5 min with child at home between 9 a.m. – 2 p.m.

Percentage of Weekday Workdays Worked Exclusively from Home by Parents Before and During the Pandemic



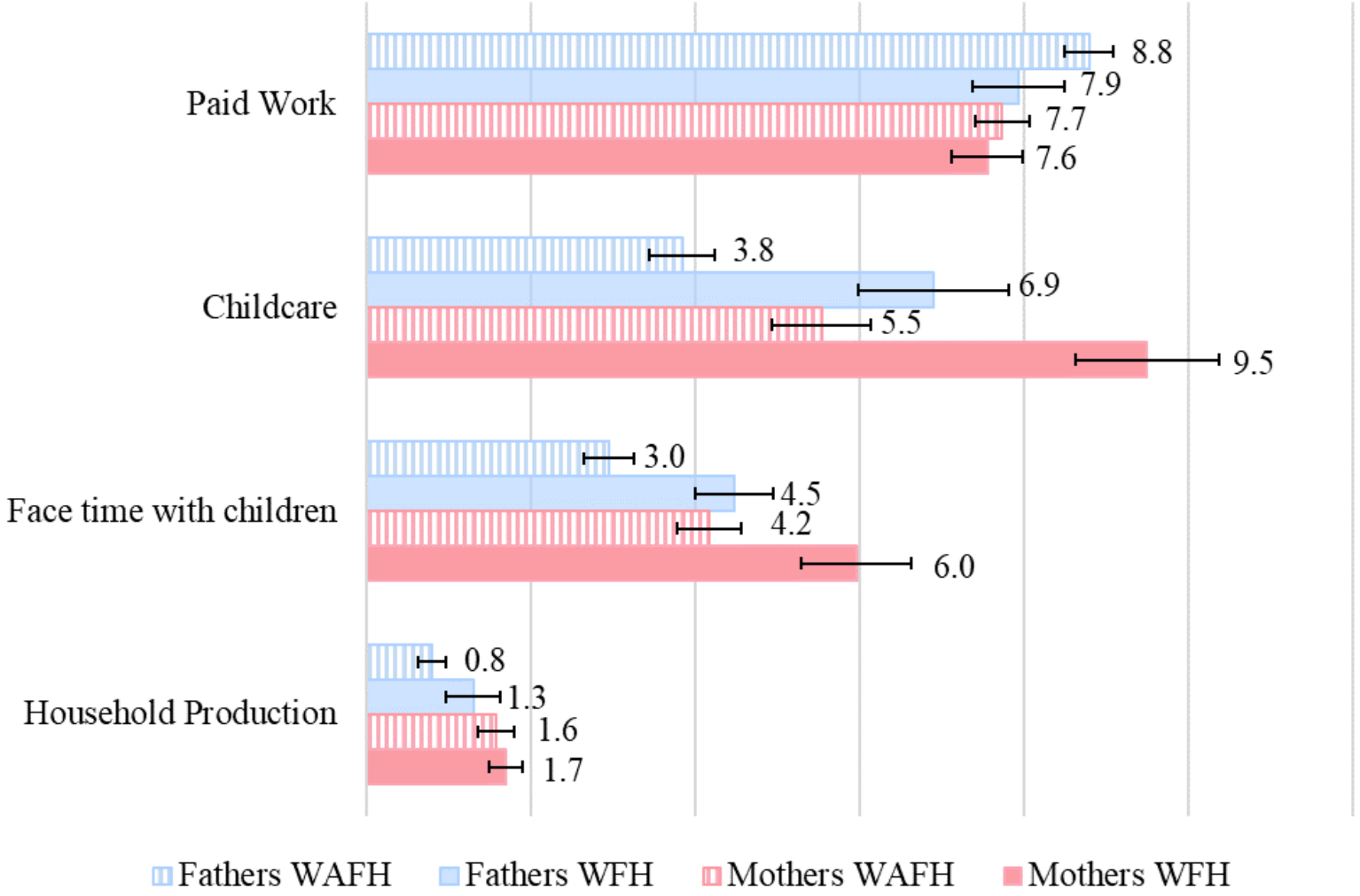
Average Hours per Weekday Workday



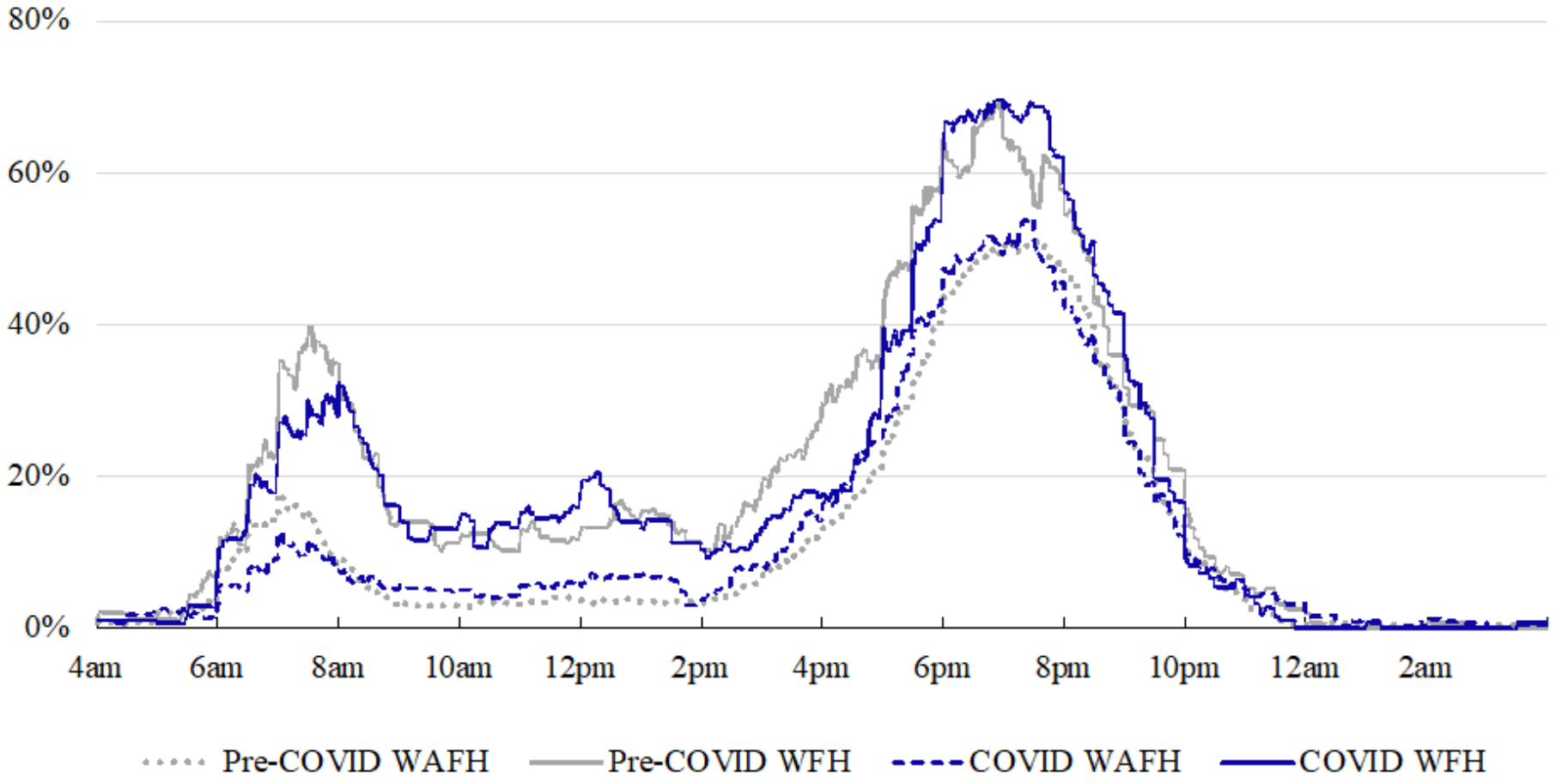
Time Use Outcomes

- Work and work-related activities
- Total childcare
  - Primary childcare
  - Secondary childcare (not necessarily in same room)
- Face time with children
  - In the same room at home or accompanied if away from home
- Household production
- Total work = paid work + household production + other activities during which a child was present or secondary childcare was recorded
- Share of work hours doing secondary childcare

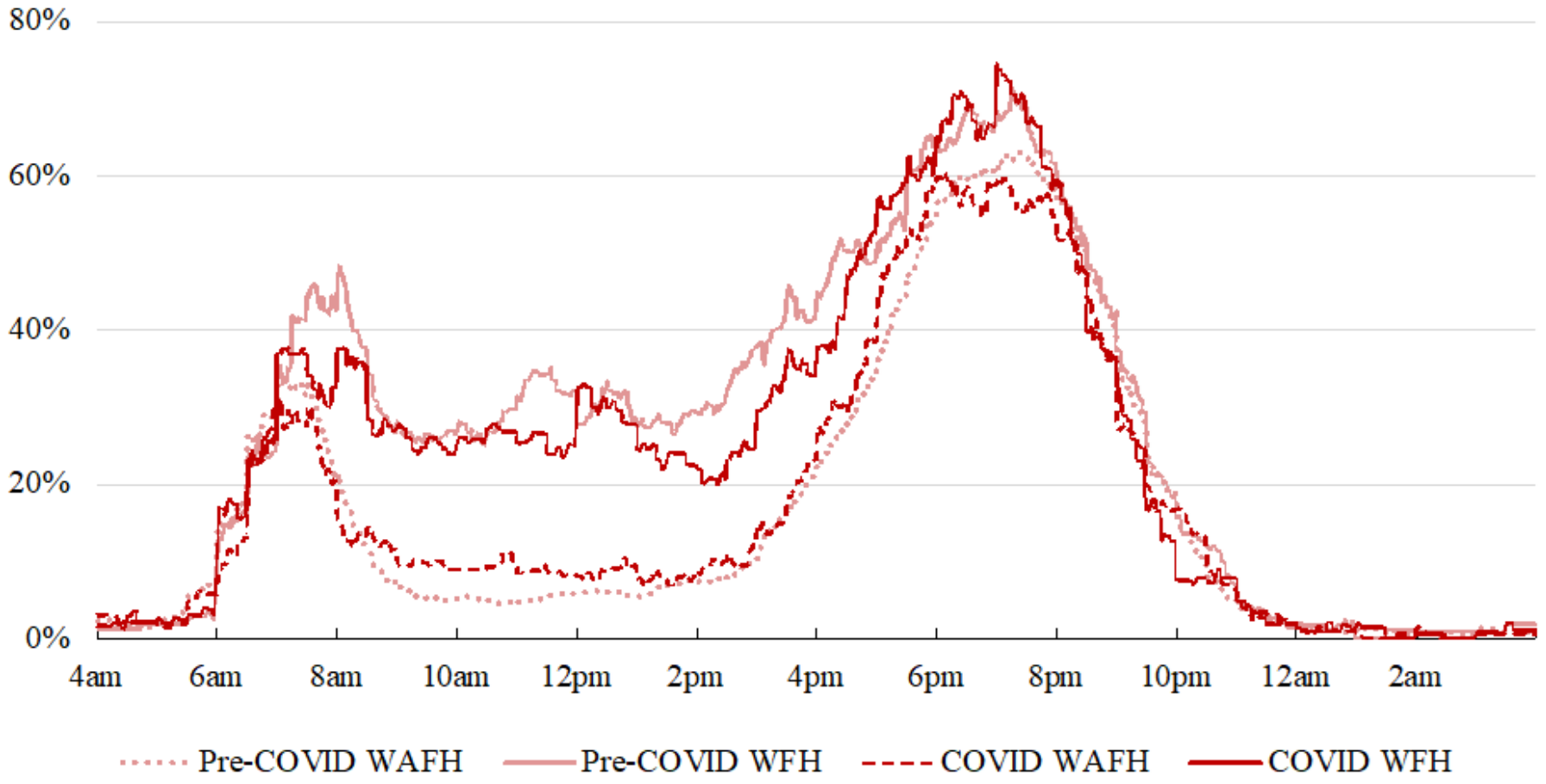
Average Hours per Weekday Workday During COVID, by Work Location



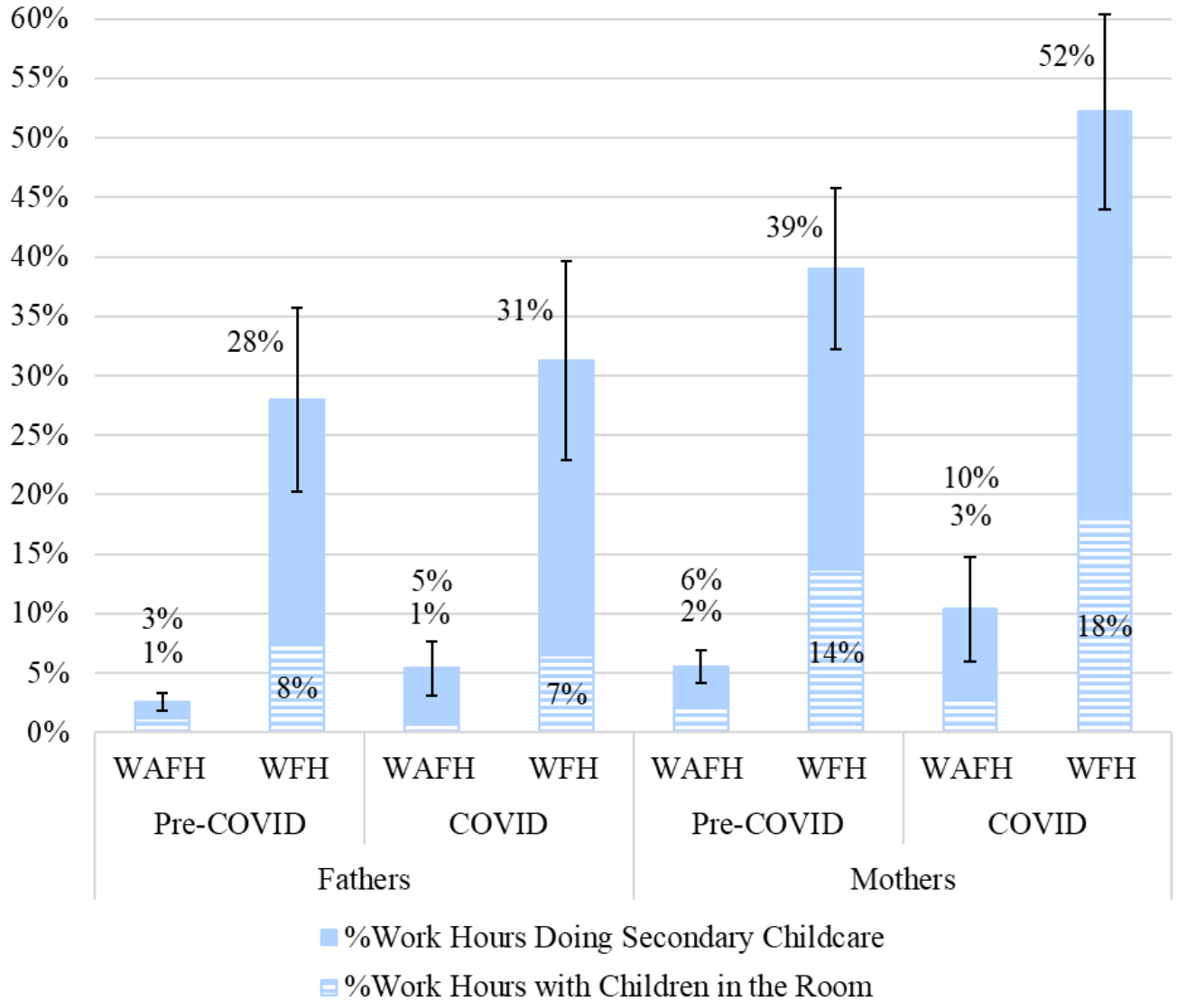
Percentage of Fathers Spending Time with Children on Weekday Workdays, by Time of Day and Work Location



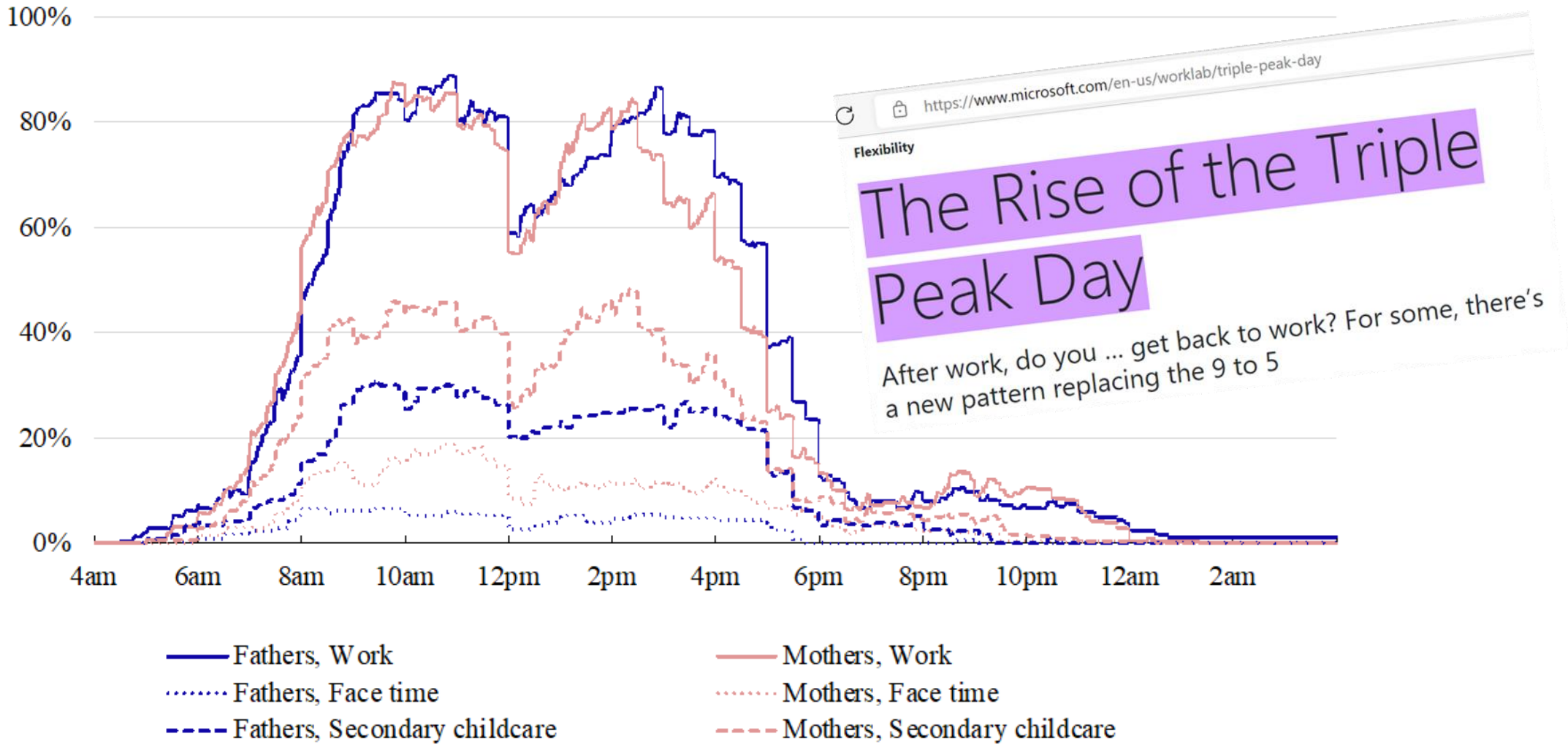
Percentage of Mothers Spending Time with Children on Weekday Workdays by Time of Day and Work Location



Percentage of Work Hours Simultaneously Caring for Children



Percentage of Parents Working, Working with a Child Present, and Working while Supervising a Child on Weekday Workdays While Working from Home During COVID



Model 1: WFH Day Interacted with Gender and COVID

How do mothers and fathers working from home (WFH) spend their time compared to those working away from home (WAFH), before and during COVID?

$$Y_i = \gamma_0 + \gamma_1 \text{Female}_i + \gamma_2 \text{WFH}_i + \gamma_3 \text{COVID}_i + \gamma_4 \text{WFH}_i \times \text{Female}_i + \gamma_5 \text{Female}_i \times \text{COVID}_i + \gamma_6 \text{WFH}_i \times \text{COVID}_i + \gamma_7 \text{WFH}_i \times \text{Female}_i \times \text{COVID}_i + \gamma_8 X_i + \nu_i$$

Y_i – hours spent on an activity on a weekday workday

WFH_i – respondent works from home on diary day

X: age, age squared, log hourly wage, and indicators for cohabitation status, extra adult in the household, age of youngest household child, 3+ household children, education (no high school degree, some college, bachelor's degree, advanced degree), paid hourly, part-time, partner part-time, self-employed, union member, race/ethnicity (non-Hispanic black, Hispanic, non-Hispanic other race), living in a metropolitan area, 11 occupation groups, 14 industry groups, Census region, month, and year.

We predict average daily hours for activities on weekday workdays and report differences (gaps) in these predicted hours for working parents in dual-earner couples by WFH status and gender over time.

WFH–WAFH Hours Gaps Before and After COVID

	Paid Work	Total Childcare	Primary Childcare	Secondary Childcare	Face time with Children	Household Production	Total Work
Pre-COVID							
Fathers: WFH – WAFH	-1.26***(0.28)	3.36***(0.45)	0.43***(0.17)	2.92***(0.42)	1.94***(0.34)	0.62***(0.18)	0.89***(0.21)
Mothers: WFH – WAFH	-1.42***(0.26)	3.41***(0.32)	0.15 (0.14)	3.26***(0.31)	2.10***(0.30)	0.69***(0.16)	0.47**(0.20)
Mothers – Fathers	-0.16 (0.39)	0.05 (0.54)	-0.29 (0.22)	0.34 (0.50)	0.16 (0.45)	0.07 (0.24)	-0.42 (0.29)
COVID							
Fathers: WFH – WAFH	-0.65**(0.32)	3.11***(0.51)	0.34***(0.15)	2.77***(0.49)	1.44***(0.28)	0.53***(0.17)	0.70***(0.25)
Mothers: WFH – WAFH	-0.51**(0.25)	4.45***(0.51)	0.66***(0.21)	3.80***(0.51)	2.18***(0.37)	0.36**(0.15)	0.86***(0.22)
Mothers – Fathers	0.14 (0.41)	1.35* (0.72)	0.32 (0.26)	1.03 (0.69)	0.74* (0.43)	-0.17 (0.23)	0.16 (0.31)
COVID minus pre-COVID							
Fathers: WFH – WAFH	0.62 (0.39)	-0.25 (0.66)	-0.09 (0.23)	-0.15 (0.64)	-0.50 (0.44)	-0.09 (0.26)	-0.19 (0.31)
Mothers: WFH – WAFH	**0.92****(0.38)	**1.05*** (0.61)	**0.51****(0.23)	0.54 (0.58)	0.08 (0.48)	-0.33 (0.21)	0.39 (0.28)
Mothers – Fathers	0.30 (0.52)	1.30 (0.91)	**0.60*** (0.31)	0.69 (0.86)	0.58 (0.63)	-0.24 (0.32)	0.58 (0.40)

Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Model 2: WFH Day Interacted with Gender and Partner's WFH Status (COVID Diaries Only)

Does parents' time use **when WFH** vary by the WFH status of their partner?

$$Y_i = \beta_0 + \beta_1 \text{Female}_i + \beta_2 \text{WFH}_i + \beta_3 \text{PARTNER\_WFH}_i + \beta_4 \text{WFH}_i \times \text{Female}_i + \beta_5 \text{PARTNER\_WFH}_i \times \text{Female}_i + \beta_6 \text{WFH}_i \times \text{PARTNER\_WFH}_i + \beta_7 \text{WFH}_i \times \text{PARTNER\_WFH}_i \times \text{Female}_i + \beta_8 X_i + \varepsilon_i$$

PARTNER_WFH_i – prob(partner works from home on diary day)

Predicting Work-from-home Day During COVID

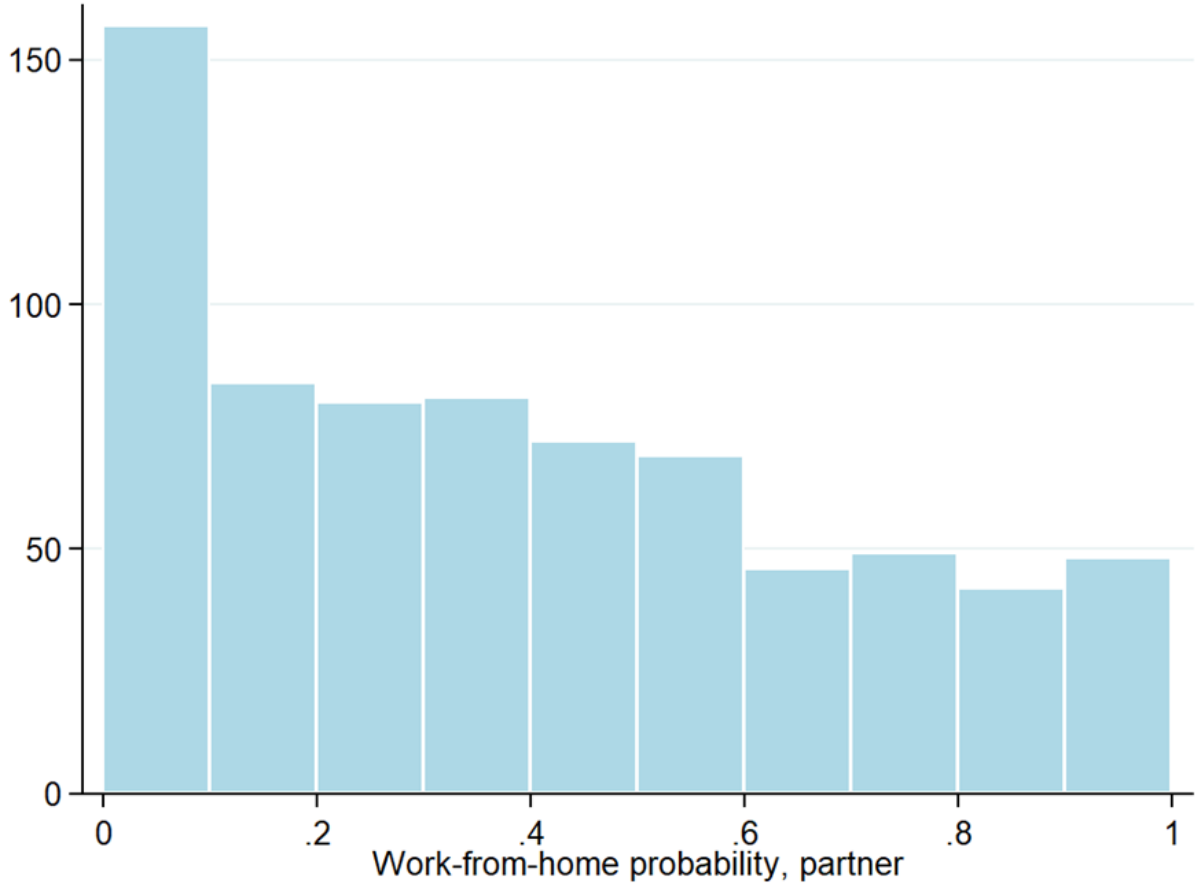
	Partnered Men	Partnered Women
CPS Share WFH in occupation-region-year	0.457***	0.677***
Log wage	0.085**	0.186***
Partner part-time	-0.075**	-0.167***
Self-employed	0.011	0.298***
No high school degree	0.012	-0.215**
Some college	0.111	0.112
College degree	0.128*	0.211***
Graduate degree	0.171**	0.228***
Pseudo R-squared	0.331	0.344
Correlation with WFH day for respondents (parents of kids<13)	0.553	0.595

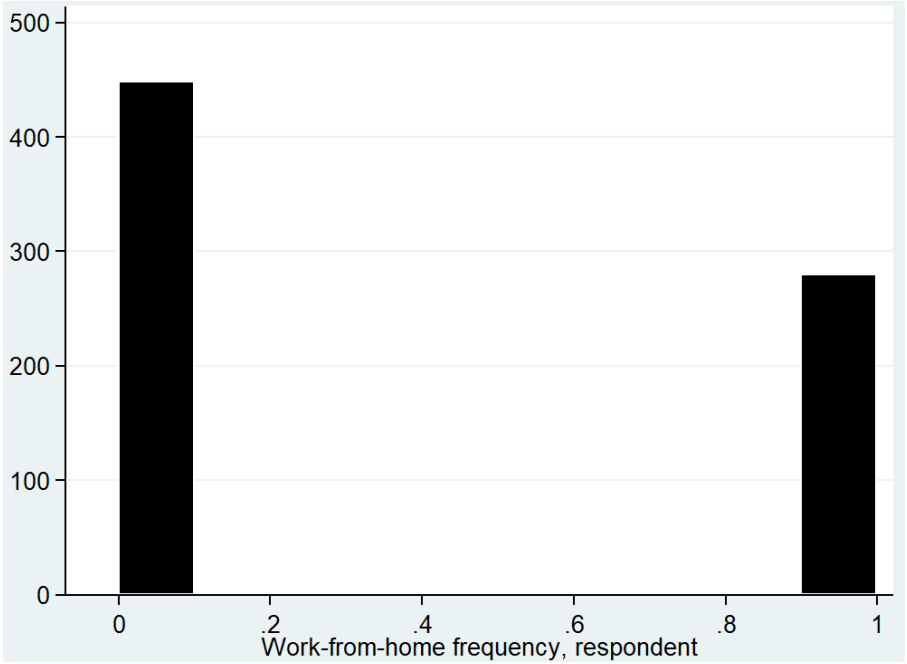
Controls:

- Share of workers aged 21–65 within detailed occupation-region-year cells who teleworked in the past 4 weeks *because of* COVID (Current Population Survey COVID-19 supplement)
- Additional demographic controls: quadratic in age, log hourly wage, paid hourly, cohabiter, extra adult in household, age of children indicators, 3+ children, education level, part-time worker, partner part-time worker, self-employed, union member, race/ethnicity, other household adult, metropolitan area, major occupations, major industries, and pandemic month

Distribution of Predicted Partner's Work-from-Home Probability

(Frequency)





Calculate predictions setting PARTNER_WFH$_i$= $\begin{cases} 0 \; if \; WAFH \; day \\ 0.75 \; if \; WFH \; day \end{cases}$

WFH–WAFH Hours Gaps During COVID-19

	Paid Work	Total Childcare	Primary Childcare	Secondary Childcare	Face time with Children	Household Production	Total Work
One parent WFH							
Fathers	-0.01 (0.53)	3.44***(1.24)	0.37 (0.33)	3.06***(1.18)	1.42**(0.70)	0.81**(0.36)	0.86* (0.49)
Mothers	-1.11***(0.41)	5.23***(0.89)	0.79**(0.36)	4.44***(0.90)	2.49***(0.63)	0.54* (0.28)	0.87**(0.42)
Mothers – Fathers	**-1.10*** (0.63)	1.79 (1.44)	0.41 (0.50)	1.38 (1.35)	1.06 (0.96)	-0.27 (0.43)	0.01 (0.63)
Both parents WFH							
Fathers	-0.19 (0.48)	2.09**(0.85)	0.28 (0.28)	1.81**(0.83)	1.07* (0.55)	0.28 (0.30)	0.47 (0.46)
Mothers	0.04 (0.50)	3.23***(1.01)	0.46 (0.40)	2.77***(1.01)	1.46** (0.74)	0.20 (0.36)	0.40 (0.49)
Mothers – Fathers	0.23 (0.58)	1.14 (0.99)	0.18 (0.37)	0.96 (1.01)	0.39 (0.73)	-0.09 (0.36)	-0.07 (0.51)
Both – One WFH							
Fathers	-0.19 (0.60)	-1.34 (1.28)	-0.09 (0.39)	-1.25 (1.21)	-0.35 (0.82)	-0.52 (0.36)	-0.39 (0.61)
Mothers	**1.15****(0.54)	-1.99 (1.26)	-0.32 (0.45)	-1.67 (1.23)	-1.03 (0.92)	-0.34 (0.41)	-0.47 (0.52)

Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

WFH–WAFH Hours Gaps During COVID-19

(Dual-earner Couples with Children: Full-time Wage and Salary Workers)

	Paid Work	Total Childcare	Primary Childcare	Secondary Childcare	Face time with Children	Household Production	Total Work
One parent WFH							
Fathers	-0.57 (0.68)	4.48***(1.61)	0.81* (0.46)	3.67**(1.47)	2.48**(1.06)	0.48 (0.41)	0.76 (0.53)
Mothers	-1.54***(0.51)	6.59***(1.11)	0.97**(0.44)	5.61***(1.11)	2.64***(0.81)	0.47 (0.34)	0.62 (0.52)
Mothers – Fathers	-0.97 (0.81)	2.11 (1.80)	0.17 (0.65)	1.94 (1.68)	0.16 (1.16)	-0.01 (0.49)	-0.14 (0.68)
Both parents WFH							
Fathers	-0.23 (0.45)	2.30**(1.16)	0.68**(0.34)	1.63 (1.16)	1.42**(0.69)	-0.33 (0.36)	0.31 (0.57)
Mothers	-0.14 (0.62)	3.11**(1.32)	0.95**(0.46)	2.16* (1.26)	1.29 (0.97)	0.07 (0.45)	0.63 (0.67)
Mothers – Fathers	0.09 (0.65)	0.81 (1.35)	0.27 (0.44)	0.54 (1.34)	-0.13 (0.93)	0.4 (0.44)	0.32 (0.67)
Both – One WFH							
Fathers	0.33 (0.70)	-2.17 (1.63)	-0.13 (0.50)	-2.04 (1.56)	-1.06 (1.11)	-0.81* (0.48)	-0.45 (0.56)
Mothers	1.40**(0.64)	-3.47**(1.61)	-0.02 (0.50)	-3.45**(1.59)	-1.35 (1.15)	-0.40 (0.51)	0.01 (0.68)

Significance levels: * p < 0.10, ** p < 0.05, *** p < 0.01.

WFH–WAFH Hours Gaps During COVID-19
(Dual-earner Couples with Children: School-year Diaries)

	Paid Work	Total Childcare	Primary Childcare	Secondary Childcare	Face time with Children	Household Production	Total Work
One parent WFH							
Fathers	-0.90 (0.77)	3.67**(1.51)	0.43 (0.42)	3.25**(1.41)	2.06**(0.94)	1.45***(0.47)	0.86 (0.68)
Mothers	-0.62 (0.55)	4.50***(1.02)	0.86* (0.49)	3.64***(0.99)	1.95**(0.90)	0.32 (0.34)	0.55 (0.49)
Mothers – Fathers	0.27 (0.89)	0.83 (1.65)	0.43 (0.64)	0.39 (1.54)	-0.12 (1.25)	**-1.13****(0.54)	-0.31 (0.75)
Both parents WFH							
Fathers	-0.34 (0.70)	1.57 (1.05)	0.29 (0.38)	1.28 (1.01)	0.66 (0.75)	0.37 (0.36)	0.28 (0.65)
Mothers	0.92 (0.79)	3.00**(1.34)	0.32 (0.61)	2.67**(1.26)	-0.11 (1.03)	0.40 (0.48)	1.01 (0.73)
Mothers – Fathers	**1.25*** (0.67)	1.42 (1.20)	0.03 (0.54)	1.39 (1.23)	-0.77 (0.94)	0.02 (0.45)	0.72 (0.59)
Both – One WFH							
Fathers	0.56 (0.79)	-2.10 (1.57)	-0.14 (0.52)	-1.96 (1.44)	-1.41 (1.03)	**-1.07****(0.46)	-0.57 (0.73)
Mothers	**1.54****(0.75)	-1.50 (1.59)	-0.54 (0.67)	-0.97 (1.52)	-2.06 (1.28)	0.08 (0.51)	0.46 (0.69)

Significance levels: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Model 3: Child-at-home Status Interacted with Gender and Partner's WFH Status (COVID WFH Days Only)

How does having a child at home during core working hours (9 a.m. to 2 p.m.) impact mothers' and fathers' time use on WFH days?

$$Y_i = \alpha_0 + \alpha_1 \text{Female}_i + \alpha_2 \text{CHILDHOME}_i + \alpha_3 \text{PARTNER\_WFH}_i + \alpha_4 \text{Female}_i \times \text{CHILDHOME}_i + \alpha_5 \text{Female}_i \times \text{PARTNER\_WFH}_i + \alpha_6 \text{CHILDHOME}_i \times \text{PARTNER\_WFH}_i + \alpha_7 \text{Female}_i \times \text{CHILDHOME}_i \times \text{PARTNER\_WFH}_i + \alpha_8 X_i + \eta_i$$

CHILDHOME_i – respondent works from home on diary day

Child Home – Child Not Home Hours Gaps During COVID-19

	Paid Work	Total Childcare	Primary Childcare	Secondary Childcare	Face time with Children	Household Production	Total Work	Share of Work Doing Secondary Childcare
One parent WFH								
Fathers	-0.65 (0.92)	7.76***(1.58)	0.65 (0.56)	7.11***(1.45)	2.25* (1.26)	-0.51 (0.64)	-0.32 (0.80)	0.78***(0.11)
Mothers	-0.98 (0.95)	6.85***(1.37)	0.84 (0.59)	6.01***(1.38)	3.33***(1.11)	0.66 (0.60)	1.50**(0.75)	0.70***(0.12)
Mothers – Fathers	-0.33 (1.37)	-0.91 (2.26)	0.19 (0.82)	-1.10 (2.16)	1.08 (1.75)	1.16 (0.90)	1.82 (1.11)	-0.08 (0.16)
Both parents WFH								
Fathers	-0.81 (0.51)	5.78***(0.73)	0.19 (0.45)	5.60***(0.81)	1.74***(0.61)	0.50* (0.28)	1.29***(0.45)	0.51***(0.07)
Mothers	0.39 (0.85)	7.12***(0.91)	0.03 (0.49)	7.09***(0.94)	3.47***(0.94)	-0.12 (0.56)	1.11* (0.58)	0.67***(0.09)
Mothers – Fathers	1.20 (0.97)	1.34 (1.09)	-0.16 (0.62)	1.50 (1.19)	1.73 (1.10)	-0.62 (0.66)	-0.18 (0.72)	0.17 (0.11)
Both – One WFH								
Fathers	-0.16 (1.02)	-1.98 (1.72)	-0.47 (0.80)	-1.51 (1.73)	-0.51 (1.30)	1.01 (0.72)	1.60 (1.02)	**-0.28****(0.13)
Mothers	1.37 (1.53)	0.28 (1.79)	-0.81 (0.89)	1.09 (1.85)	0.14 (1.68)	-0.78 (0.96)	-0.39 (1.11)	-0.03 (0.16)

Significance levels: * p < 0.10, ** p < 0.05, *** p < 0.01.

Summary of Paid Work Findings

- When WFH alone, mothers (not fathers) worked fewer paid hours than mothers working on-site.
- Mothers were able to maintain their work hours during the pandemic if their partners were also WFH.
  - A general increase in WFH could increase mothers' labor force attachment.
- Possible negative implications for mothers' productivity
  - Mothers WFH were more likely to spread work throughout the day and work in the evenings and had more interruptions in work than fathers.
  - Mothers did more caring of children while doing paid work.

Summary of Childcare Findings

- The COVID-19 pandemic increased the demand for household-provided childcare.
  - The WFH–WAFH primary childcare gap for mothers increased by a ½ hour, on average.
- Parents WFH alone did more childcare compared to their WAFH counterparts.
  - Mostly secondary childcare
  - They also spent more time with their children (i.e., facetime).
  - Gender gap decreased when fathers WFH alone, but increased when mothers WFH alone
- Having a partner WFH as well eased the childcare burden
  - Especially for mothers working full-time
- Parents WFH with a child at home did a lot more secondary childcare.
  - Fathers did less multitasking when a partner WFH and a child was at home.

Summary of Chores and Total Work Findings

- On the average day, fathers and mothers WFH did equally more chores, regardless of their partner's WFH status.
- On the average school day, fathers WFH alone spent more time on chores compared to their counterparts WAFH.
  - Having a partner WFH eased fathers' chores burden.
- On the average day, parents' total work was higher when WFH than WAFH.
  - No statistically significant differences by partner's WFH status
- When a child was at home instead of in school
  - Fathers WFH did more total work when their partners were also at home, but not when working from home alone.
  - Mothers WFH did more total work regardless of their partners' WFH statuses.

Contact Information

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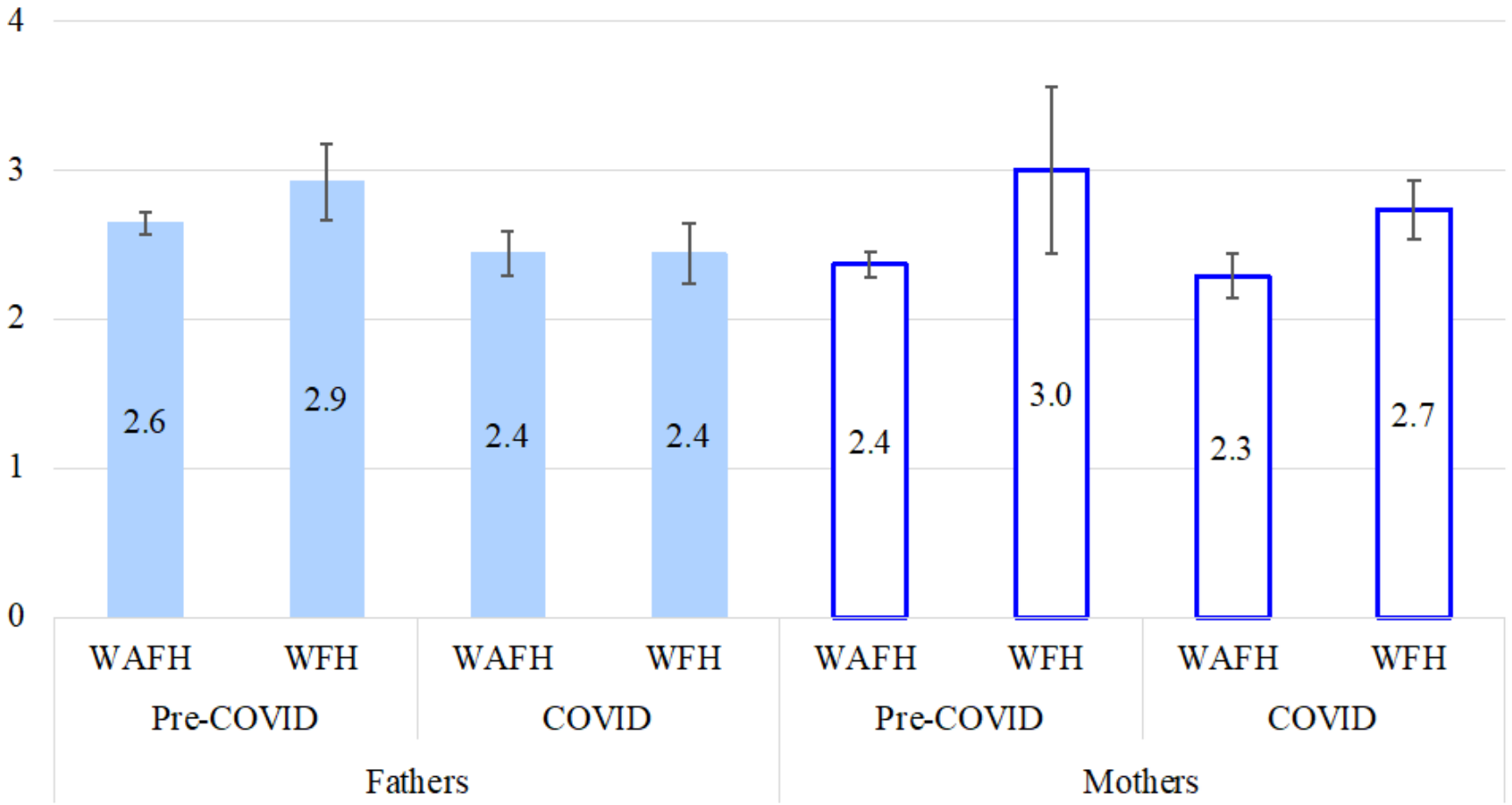
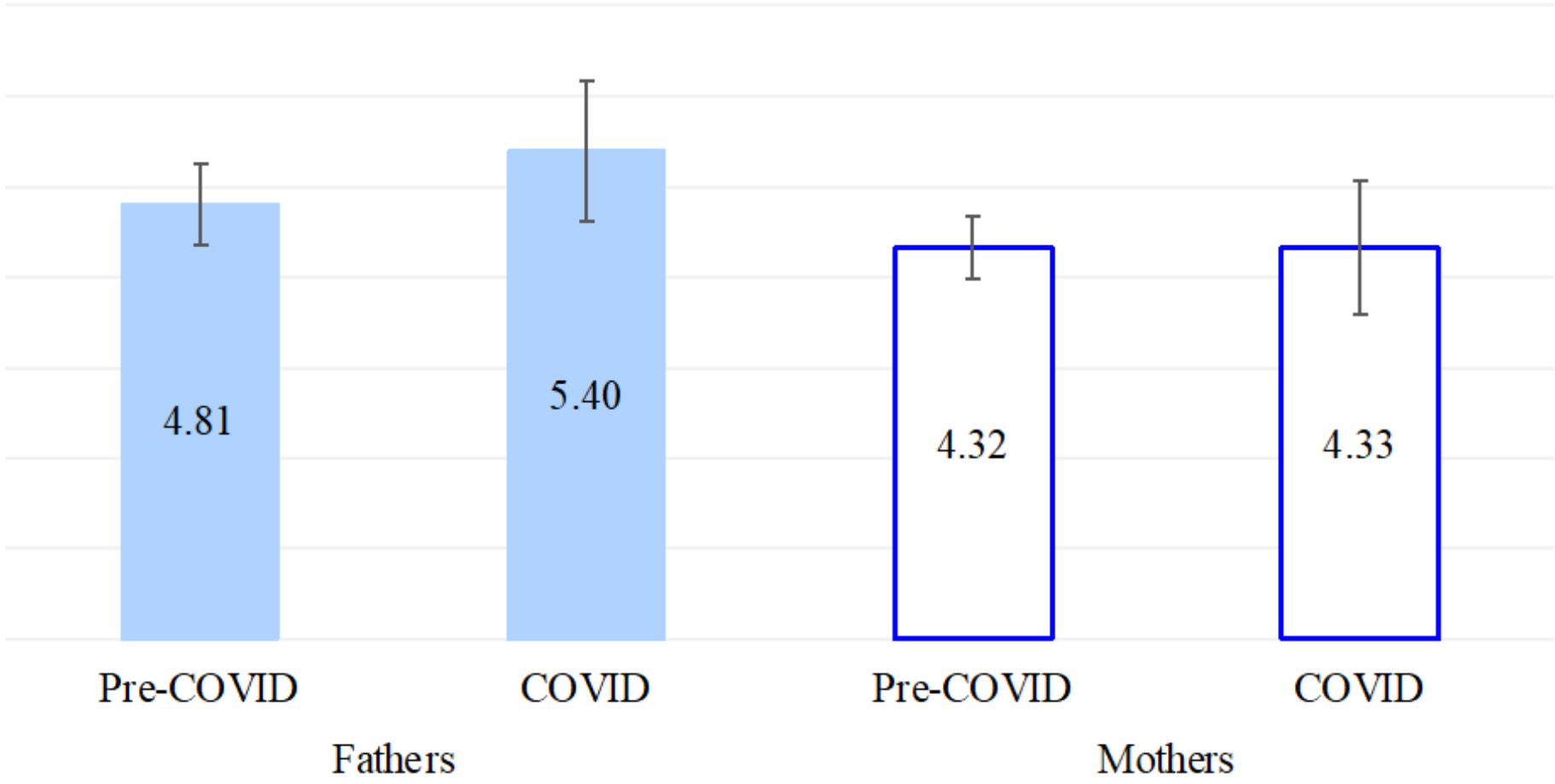
EXTRA SLIDES

Number of Work Episodes



Average Hours Worked on the Average Weekend Day by Parents in Dual-earner Couples

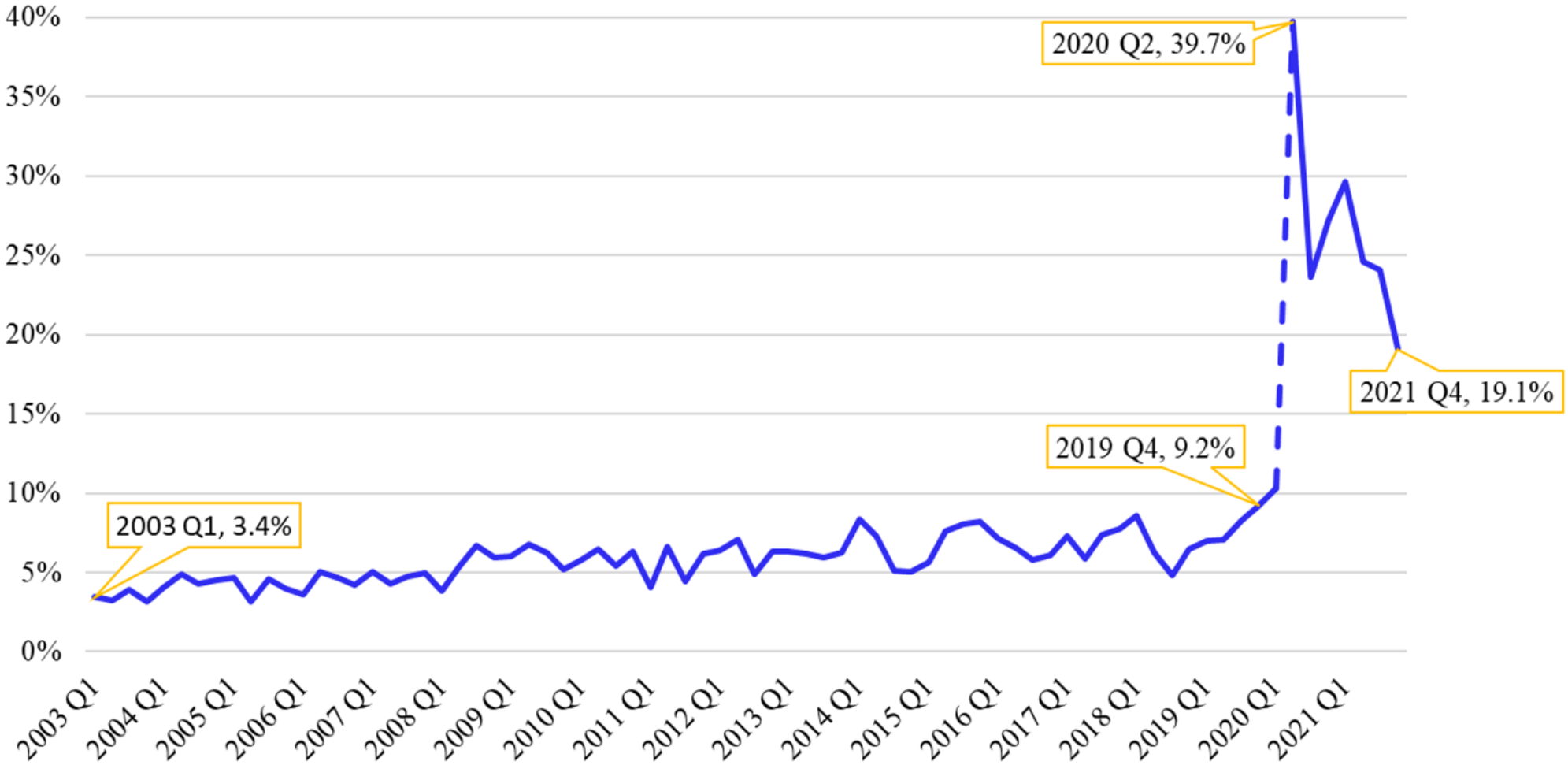


WFH–WAFH Hours Gaps During COVID-19
(Dual-earner Couples with no Children < Age 18)

	Paid Work	Household Production	Total Work
One parent WFH			
Men	-1.30 (0.84)	1.82***(0.36)	0.23 (0.80)
Women	-1.46**(0.64)	1.30***(0.40)	-0.06 (0.55)
Women – Men	-0.16 (1.01)	-0.51 (0.50)	-0.29 (0.96)
Both parents WFH			
Men	-0.53 (0.46)	0.90***(0.31)	0.52 (0.52)
Women	0.10 (0.62)	0.35 (0.34)	0.57 (0.65)
Women – Men	0.63 (0.65)	-0.55 (0.35)	0.04 (0.73)
Both – One WFH			
Men	0.77 (0.86)	**-0.92****(0.38)	0.29 (0.82)
Women	**1.56*** (0.83)	**-0.95****(0.49)	0.63 (0.79)

Significance levels: * p < 0.10, ** p < 0.05, *** p < 0.01.

Percentage of Full Workdays (4+ hours) Worked from Home



Note: Q1 2020 excludes March 18–31. Q2 excludes April 1–May 9.

Source: American Time Use Survey