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The Motherhood Penalty and the Fatherhood Premium in Employment During COVID-19: Evidence from the United States

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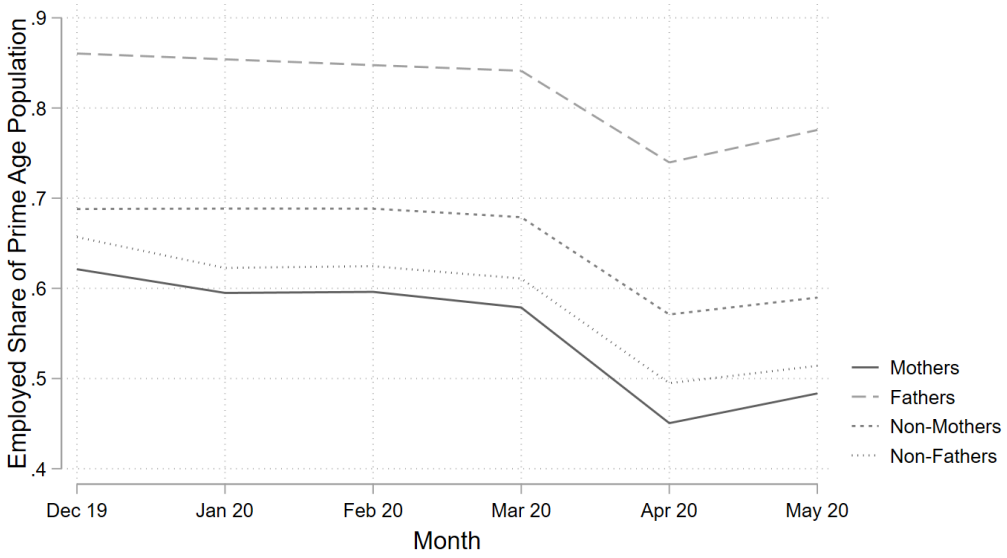
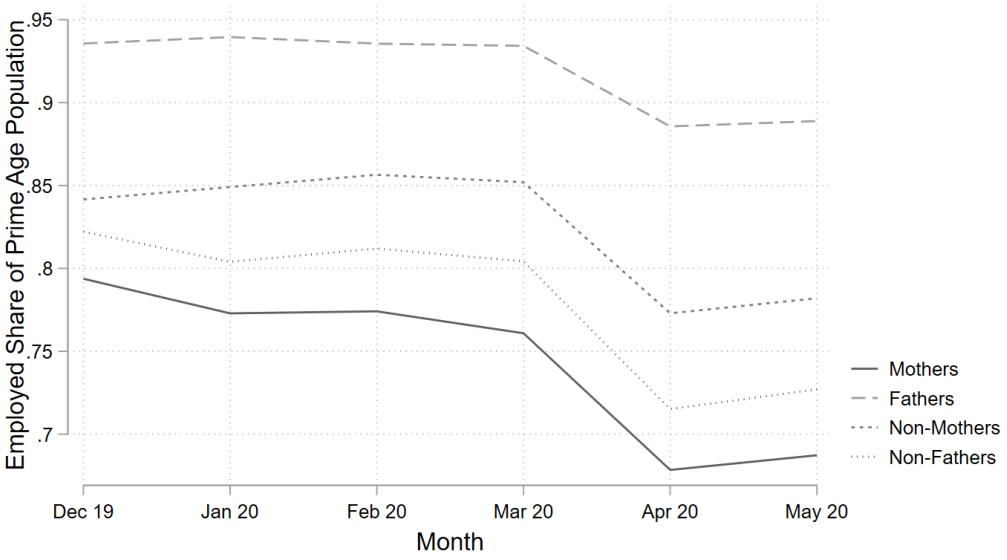
Part 1 - Supplemental analysis: Employment-Population Ratio by Parental Status, Gender, and Education Level

Figure S1. Prime Age Employment-Population Ratios by Parenthood and Gender for High School or Less



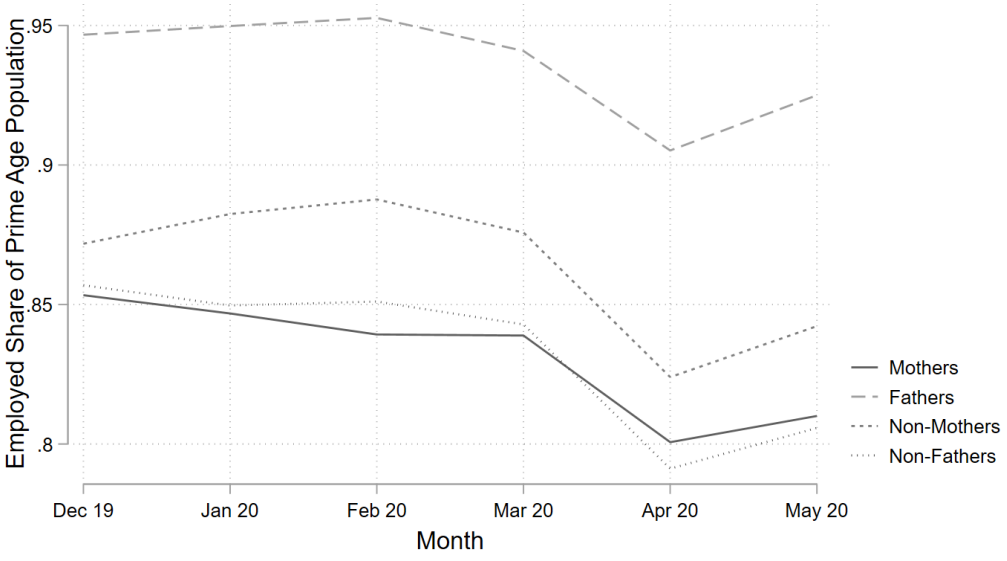
Source: CPS

Figure S2. Prime Age Employment-Population Ratios by Parenthood and Gender for BA Earners



Source: CPS

Figure S3. Prime Age Employment-Population Ratios by Parenthood and Gender for Graduate Degree Earners



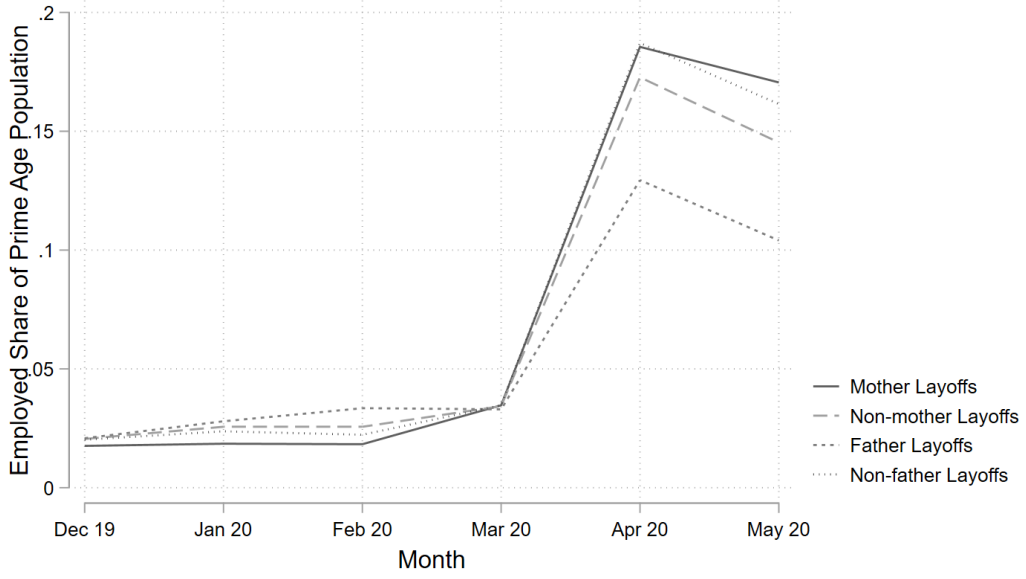
Source: CPS

Figures S1, S2, and S3 provide the employment-population ratio for prime age workers by parental status, gender, and education level from December 2019 through May 2020.[1] The employment rate for mothers with a high school degree or less decreased by 12.8 percentage points between March 2020 and April 2020, while fathers had a 10.2 percentage point decrease during the same period (Figure S1). We found strong evidence of a "fatherhood premium" among college educated workers. Among workers with a college degree, the decrease in employment rates were similar for mothers, non-mothers, and non-fathers (between 7.9 to 8.9 percentage points decrease). However, the employment rate decreased by only 4.9 percentage points for fathers during the same period (Figure S2). Among workers with a graduate degree, we find that mothers and fathers were less likely to change their employment status from employed to unemployed compared to non-parents (Figure S3).

[1] For Figures S1, S2, and S3, the number of employed in each group divided by the population aged 25 to 64 of each group.

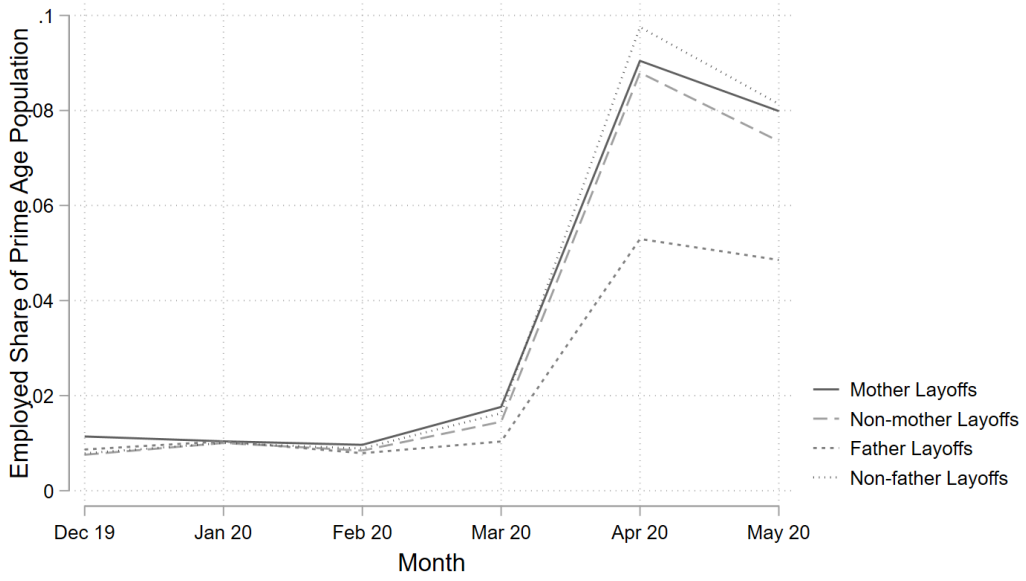
Part 2 - Supplemental analysis: Lay off Rates by Parental Status, Gender, and Education Level

Figure S4. Layoff Rates by HS Degree or less and Parenthood in U.S. Labor Force



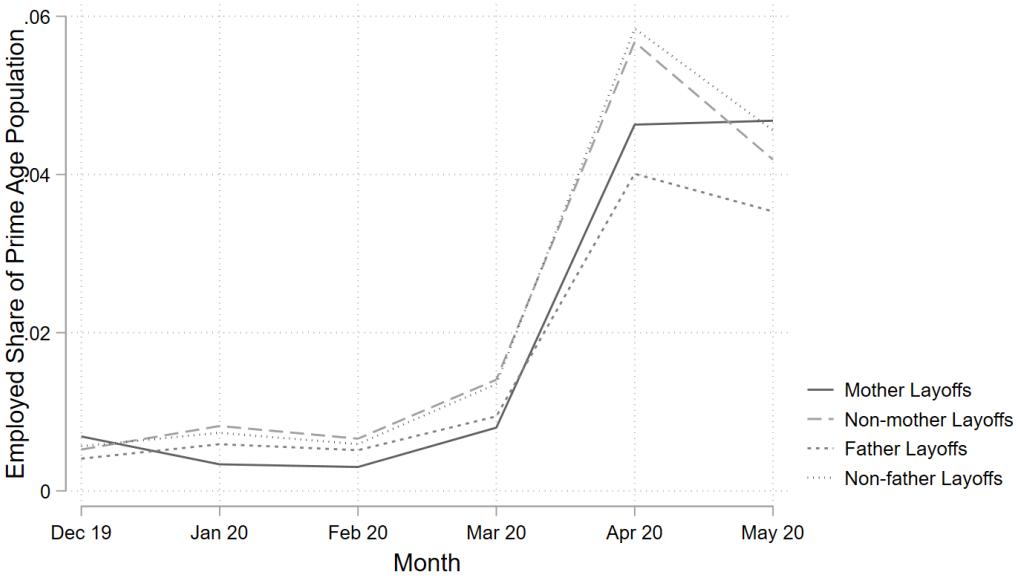
Source: CPS

Figure S5. Layoff Rates by Bachelor's Degree and Parenthood in U.S. Labor Force



Source: CPS

Figure S6. Layoff Rates by Graduate Degree and Parenthood in U.S. Labor Force



Source: CPS

Figures S4, S5, and S6 present layoff rates by parental status, gender, and education level. The fatherhood premium in the likelihood of being laid off following the shutdowns exists, especially among lower- and mid-educated workers. Among workers with a high school degree or less, fathers were less likely to be laid off (9.6 percentage point increase in layoff rate) compared to non-fathers (15.2 percentage point increase) and compared to mothers (15.1 percentage point increase) (Figure S4). Among workers with a bachelor's degree, fathers had only a modest increase in the layoff rate at 4.3 percentage points, compared to non-fathers, mothers, and non-mothers (8.1, 7.3, and 7.3 percentage point increase, respectively) (Figure S5). Among graduate degree earners, fathers had an advantage, albeit smaller in magnitude, in the likelihood of being laid off compared to mothers and non-parents (Figure S6).

Part 3 – Summary Statistics

Table S1. Summary Statistics for Regression Variables, All Members of Labor Force, CPS December 2019 to May 2020.

Variable	Mean	Std. Dev.	Min	Max
Employed	.936	.245	0	1
Unemployed Due to Job Loss	.044	.204	0	1
Unemployed Due to Quit	.004	.065	0	1
Non-Father	.339	.473	0	1
Father	.182	.386	0	1
Mother	.177	.381	0	1
Non-Mother	.302	.459	0	1
Post-Outbreak Month	.294	.456	0	1
Less than HS	.073	.261	0	1
HS	.257	.437	0	1
Some College	.277	.447	0	1
Bachelor's Degree	.247	.431	0	1
Graduate Degree	.147	.354	0	1
Age	43.59	14.83	15	85
Black	.101	.301	0	1
Other Non-White Race	.084	.277	0	1

Part 4 – Interaction Regression Results

Table S2: Interaction Regression Results

	(1)	(2)
	Unemployed Due to Layoff	
Post-Outbreak Month	0.105***	0.098***
	(0.002)	(0.005)
Non-Mother	-0.003***	-0.001
	(0.001)	(0.053)
Non-Mother x Post-Outbreak Month	0.023***	0.027***
	(0.003)	(0.007)
Father	0.001	-0.006
	(0.001)	(0.026)
Father x Post-Outbreak Month	-0.039***	-0.037***
	(0.003)	(0.006)
Mother	0.002	0.016
	(0.001)	(0.040)
Mother x Post-Outbreak Month	0.014***	0.013
	(0.005)	(0.010)
Individual Fixed Effects	No	Yes
Obs.	323,315	42,656
R-squared	0.059	0.503

Note: **** p<0.01, ** p<0.05, * p<0.1*. Robust standard errors are in parentheses. The dependent variable in all columns is unemployment due to layoff. COVID-19 variable indicates observation in April or May 2020. Data in both columns from CPS at the person-month observation level. Baseline group in both columns is non-fathers. Column (1) observations include all labor force participants from December 2019 to May 2020. Column (2) observations include all labor force participants continuously surveyed February through May 2020 rounds of the CPS. Both columns include controls for age, education, and race. Column (2) includes individual fixed effects.

Part 5. Job Postings from Burning Glass for Major Occupational Categories

Table S3: Online Job Postings from Burning Glass, March 2020 to April 2020

Occupation Family	Percent female	Job Postings - March 2020	Job Postings - April 2020	Number of lost jobs March-April	Expected female job loss	Expected male job loss
Office and Administrative Support	70.2%	359,648	199,550	-160,098	-112,389	-47,709
Food Preparation and Serving Related	57.6%	145,798	81,770	-64,028	-36,880	-27,148
Legal	66.0%	22,746	13,884	-8,862	-5,849	-3,013
Personal Care and Service	79.4%	82,065	52,833	-29,232	-23,210	-6,022
Installation, Maintenance, and Repair	3.6%	106,349	69,625	-36,724	-1,322	-35,402
Management	39.7%	370,713	244,019	-126,694	-50,298	-76,396
Computer and Mathematical	28.2%	367,193	243,958	-123,235	-34,752	-88,483
Arts, Design, Entertainment, Sports, and Media	49.3%	74,611	50,020	-24,591	-12,123	-12,468
Healthcare Support	87.6%	77,249	52,654	-24,595	-21,545	-3,050
Building and Grounds Cleaning and Maintenance	42.8%	70,764	49,780	-20,984	-8,981	-12,003
Education, Training, and Library	76.7%	89,497	63,668	-25,829	-19,811	-6,018
Transportation and Material Moving	20.7%	190,477	136,743	-53,734	-11,123	-42,611
Production	29.2%	91,673	65,956	-25,717	-7,509	-18,208
Farming, Fishing, and Forestry	27.3%	3,208	2,317	-891	-243	-648
Community and Social Services	65.1%	43,298	31,442	-11,856	-7,718	-4,138
Architecture and Engineering	14.9%	93,201	69,146	-24,055	-3,584	-20,471
Sales and Related	48.0%	370,898	278,378	-92,520	-44,410	-48,110
Protective Service	22.6%	44,165	33,651	-10,514	-2,376	-8,138
Business and Financial Operations	53.2%	215,445	166,590	-48,855	-25,991	-22,864
Construction and Extraction	3.0%	40,139	31,073	-9,066	-272	-8,794
Healthcare Practitioners and Technical	77.3%	399,536	310,380	-89,156	-68,918	-20,238
Life, Physical, and Social Science	46.5%	32,963	26,399	-6,564	-3,052	-3,512
Military Specific	14.7%	1,454	1,426	-28	-4	-24
Total jobs		3,293,090	2,275,262	-1,017,828	-502,361	-515,467

Note: We estimated the expected job loss for males and females by using the March 2020 gender distribution for each of the 23 occupations and multiplying each percentage by the number of job losses. We added the expected job losses for each of the 23 occupations to estimate the total expected job loss for males and females.
Sources: For job postings data, we used Labor Insight (Burning Glass Technologies). For the gender composition by occupation, we used data from the Bureau of Labor Statistics.