

**The Impact of Economic Downturns on Mothers and Fathers' Time Usage in household
in the United States**

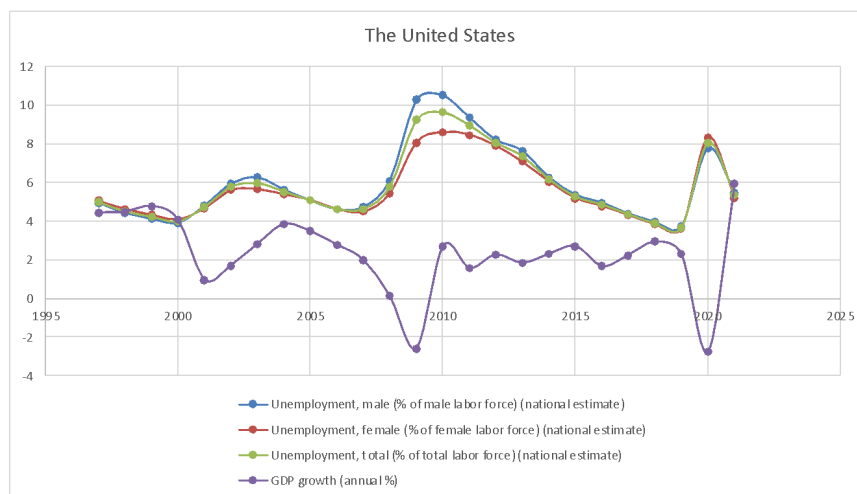
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April 7, 2023

1. Introduction

The economic downturns had a significant impact on the labour market, with many people losing their jobs and both male and female unemployment rates rising. The economic downturn has increased parents' spare time, and how parents utilise this time is the research question of this paper. The recession and economic crisis of 2007-2009 boosted both women's and men's unemployment rates. In 2007-2009 financial crisis, we found that men's unemployment rate is much more affected than women.

Figure 1:



The preceding material alludes to the 2008 Great Depression, which was primarily triggered by the breakdown of financial institutions and market disruptions. Research conducted in 2008 may not be pertinent to the current recession. Because of the impact of COVID-19, the United States experienced precession (2019), recession (2020), and postcession in 2020 (2021). During the recession, female unemployment was higher than male unemployment, the inverse of what happened in 2008. Due to incomplete and damaged data in ATSU data about housework allocation in 2008, this article will investigate the impact of economic development on Mothers' and Fathers' Time Usage before, during and the after the COVID-19 recession.

In this study, we seek to investigate how economic downturns impact the time utilization of parents in the United States. We specifically examine the effects of the recession caused by the COVID-19 pandemic in comparison to the period before the recession. Utilizing data from the

American Time Use Survey (ATUS) for the years 2019, 2020, and 2021, we analyze parental time usage with a focus on childcare, eldercare, and total care time. Additionally, we explore the differences in time allocation between men and women and how these disparities change during recessions. Specifically, the questions we want to investigate include a) how the covid recession impacted parental time utilization in the United States, b) What are the differences in time allocation between men and women during economic downturns? c)How do factors such as age and employment status influence the time spent on childcare and eldercare?

2. Literature Review

Reality has proven to the world that recessions will directly impact the unemployment rate. However, recessions with different causes will also affect the reaction of gender division of work within both household and workplace.

For instance, both the Great recession and COVID have caused the most influential economic downturns worldwide while one has a more notable effect on men's unemployment rate and the other takes more toll on women's. The connection between mothers' and fathers' time use in difficult and good economic times is essential for gender equality in paid and unpaid work and family well-being (Offer & Schneider, 2011). The U-shaped pattern of the gender gap in unpaid labour during the recession, which followed the gradual eradication of gender segregation in housekeeping, demonstrates the necessity for gender equality policies and efforts (Berik & Kongar, 2011).

Such unequal distributions in household work determined by gender roles show a greater response in families with children. Different from normal houseworks that typically does not have a specific timeframe, childcare requires more immediate responses by the parents and is more likely to be taken on throughout the entire week with school activities across weekdays and caregiving on weekends including outdoor activities and family time(Berik, & Kongar, E., 2013). Based on the 2003-10 American Time Use Survey, during the recession, mothers' caregiving time that they have devoted onto the children has nearly doubled while the fathers' time allocation

towards children has only increased by a small amount (Berik, & Kongar, E., 2013; Hartmann, H., English, A., & Hayes, J., 2010). Since the COVID pandemic has led to a greater drop in women's unemployment rate, such an outcome on women's time increase in housework will only be greater than the Great Recession. The results from past studies on both recession periods indicate that mothers in general took on more responsibilities on domestic work no matter the workload than the fathers.

3. Data

ATUS is a yearly survey that generates microdata files on roughly 228,000 respondents. This information is used to calculate how much time people spend on different activities, such as paid and unpaid job time, child care, social events, and so on. We can comprehend the living habits of the American people by analysing ATUS data, giving a reference for the government to design regulations. I chose three years of data (2019, 2020, and 2021) to investigate the recession's impact on parents' time utilisation. Because the elderly and children may not exist in the survey family, we begin the analysis by removing incorrect observations. Invalid observations are those with a care time of less than or equal to 0. Table 1 provides a summary of time usage.

Before the COVID-19 outbreak in 2019, the average childcare time was 415.4 minutes. Following the epidemic, the US economy weakened, unemployment increased, and childcare time increased to 460.25 minutes. Even though the US economy will recover in 2021 and the unemployment rate will return to pre-recession levels, people are still spending more time on childcare than in 2019. These phenomena can also be seen in eldercare and complete care outcomes. Table 1 illustrates that the COVID-19-caused recession will have a long-term impact on the family rather than a short-term one.

Table 1. Summary of time usage in the United States

		Childcare			Eldercare			Total Care		
		2019	2020	2021	2019	2020	2021	2019	2020	2021
A L L	mean	415.4	460.25	437.54	191.7	225.65	208.28	405.8	430.5	384.1
	median	395	480	450	105	110	107	380	420	329
	sd	259	254.48	254.15	230.2	284.94	256.21	269.6	275.79	269.7
	num	2273	2023	2011	453	404	385	2361	2370	2679
M A L E	mean	374.2	430.19	399.67	202.1	236.2	217.21	378.5	405.88	353.5
	median	309.5	416	360	108	110	103.5	324	374	272
	sd	265.9	264.44	266.17	241.8	305.41	275.46	275.9	278.63	271.7
	num	954	833	855	157	148	140	981	967	1097
F e m a l e	mean	445.3	481.3	465.55	186.2	219.55	203.18	425.2	447.47	405.3
	median	451	520	480	102.5	107.5	118	425.5	469	386.5
	sd	249.8	245.19	241.2	224.1	272.84	244.97	263.4	272.63	266.3
	num	1319	1190	1156	296	256	245	1380	1403	1582

When comparing the time men and women spend in Childcare, it is discovered that men spend less time than women. In 2019, women spent 71.1 minutes longer on average than men in Childcare. During COVID-19, the childcare gap between men and women decreased to 51 minutes in 2020. After the economy recovered in 2021, the time difference between the two became 66 minutes. A distinct U-shaped characteristic appeared. It demonstrates that male and female childcare characteristics are similar during the recession.

When we compared the time spent on eldercare by men and women, we discovered that men spend more time than women. In 2019, men spent 15.9 minutes longer on eldercare than women, but this discrepancy narrowed to 16.6 minutes in 2020 and 14 minutes in 2021. The disparity between men and women in eldercare time was narrower, and the gender gap widened during the economic downturn.

Finally, we explore how economic changes affect time spent in-home care by superimposing eldercare and Childcare times. Women devote more time to their jobs than men. Women spent 46.7 minutes longer than males in 2019. The difference was 41.6 minutes in 2020. It will revert to 51.8 minutes in 2021. The contrast between economic recession and time manifests as U-type features in nursing time.

4. Statistical analysis

We can see from the summary of childcare and eldercare time between 2019 and 2021 that the economic downturn will have an impact on the time arrangement of family parents. The regression approach will be used to analyse the influence of recession on childcare and eldercare in order to establish whether these impacts are significant. At the same time, because characteristics such as occupation and age influence estimation findings, this research treats these associated variables as control variables in the regression analysis. The regression model looks like this:

$$Time = a + \delta recession + \gamma sex + X\beta + \epsilon$$

Where recession has three levels pre-recession, recession and post-recession, X is the selected control variables: employment status, spouse employment status, age, etc.

4.1 Childcare time

Table 2 depicts the analysis of childcare time. Column (1) exclusively addresses the impact of the recession on childcare time as the response variable. Only the positive childcare time observations are studied in the regression, and 6307 observations were kept. According to the findings, childcare time in 2020 has grown by 44.8 minutes compared to 2019. Childcare time increased by 22 minutes in 2021 compared to 2019. Because the p-values for the results above are all less than 0.05, we infer that economic recession does affect childcare and that the effect diminishes but remains after the recession.

Table 2. Regression results on Childcare time

	(1)	(2)	(3)
(Intercept)	415.439 *** (5.370)	318.601 *** (15.612)	357.948 *** (18.316)
recession2020	44.814 *** (7.825)	44.480 *** (7.757)	41.380 *** (7.674)
recession2021	22.103 ** (7.837)	22.965 ** (7.770)	22.260 ** (7.681)
TEAGE		1.523 *** (0.359)	1.531 *** (0.355)
TESEX2		65.444 *** (6.502)	48.847 *** (7.106)
as.factor(TRDPFTPT)1			-90.889 *** (8.147)
as.factor(TRDPFTPT)2			-54.951 *** (11.156)
as.factor(TESEMPNOT)1			47.627 *** (8.199)
as.factor(TESEMPNOT)2			42.759 *** (11.440)
N	6307	6307	6307
R2	0.005	0.023	0.046
logLik	-43921.336	-43865.429	-43788.637
AIC	87850.671	87742.857	87597.274

Column (2) Fill in the model's age and gender. According to the findings, for two people of the same age and year, the female spends 65 minutes more on childcare than the male. The age coefficient is 1.523 and significant, which means that every year of age adds around 1.5 minutes to the childcare. Finally, the model adds the participant couple's job status in a column (3). Working full-time reduces the respondent's childcare time by 91 minutes, whereas working part-time reduces the time by 55 minutes. On the other hand, if the respondent's spouse works full-time, the respondent's childcare time will increase by 48 minutes, while it will grow by 43 minutes if the respondent's couple works part-time. The estimated parameter of the regression component varies very little after adding control variables, showing that the regression model is resilient.

Table 3. Regression results on Eldercare time

	(1)	(2)	(3)
(Intercept)	191.680 *** (12.079)	49.570 (31.276)	148.907 *** (37.344)
recession2020	33.974 (17.592)	36.048 * (17.388)	30.472 (17.164)
recession2021	16.603 (17.820)	18.110 (17.610)	15.797 (17.363)
TEAGE		2.606 *** (0.465)	0.853 (0.540)
TESEX2		-17.478 (15.036)	-14.124 (14.865)
as.factor(TRDPFTPT)1			-40.889 * (17.406)
as.factor(TRDPFTPT)2			-36.899 (21.809)
as.factor(TESPEMPNOT)1			-17.280 (18.459)
as.factor(TESPEMPNOT)2			84.508 *** (17.973)
N	1242	1242	1242
R2	0.003	0.028	0.059
logLik	-8653.173	-8637.097	-8617.277
AIC	17314.346	17286.195	17254.555

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

3.2 Eldercare time

The regression findings of Eldercare time changing with economics are shown in Table 3. Only the observations with positive eldercare time are included in this analysis. Model 1 shows

no substantial change in eldercare time during or after the recession. Model 2 demonstrates a substantial link between respondent age and eldercare time. When all other predictors are held constant, the eldercare time increases by 2.6 minutes for every year of responder age rise. After accounting for job status, the impact of the recession on eldercare time remains negligible, as indicated in column 3.

Table 4. Regression results on All care time

	(1)	(2)	(3)
(Intercept)	405.808 *** (5.590)	492.410 *** (12.226)	482.336 *** (16.319)
recession2020	24.694 ** (7.898)	25.066 ** (7.806)	24.247 ** (7.719)
recession2021	-21.746 ** (7.667)	-20.593 ** (7.579)	-19.872 ** (7.492)
TEAGE		-2.727 *** (0.245)	-2.904 *** (0.258)
TESEX2		45.443 *** (6.340)	41.126 *** (6.758)
as.factor(TRDPFTPT)1			-61.599 *** (7.632)
as.factor(TRDPFTPT)2			-40.428 *** (10.583)
as.factor(TESPEMPNOT)1			85.123 *** (7.635)
as.factor(TESPEMPNOT)2			70.836 *** (10.104)
N	7410	7410	7410
R2	0.005	0.028	0.051
logLik	-52041.254	-51953.090	-51863.743
AIC	104090.508	103918.180	103747.485

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

3.3 All care time

Table 4 displays the regression results for the entire care time. As seen in column 1, when the economy is down, parents spend more time caring for their children; however, when the economy improves, parents spend even less time caring for their children than in pre-recession, and the results are all significant. After considering the effects of age and gender, column 2 shows that the reduction in all care time is more evident as age increases. For every one-year-old increase, the total nursing time decreases by 2.7 minters. Female nursing time is significantly more than that of males. In model 2 and model 3, women spend more than 40 minutes in all care

time than men. The results of introducing employment status in column 3 show that the respondent's employment will reduce the time spent in nursing care. The spouse's employment status has the opposite effect. The spouse's full-time work will increase the respondent's all-care time by about 85 minutes. The regression coefficients in models 1-3 have little change, verifying the robustness of the regression results.

5. Discussion

First, the recession will increase the time spent on childcare and all care while having little influence on eldercare. Second, when gender and job status are considered, the change of recession's influence on response variables is minimal, and the sign of the computed coefficient remains unchanged. As a result, gender, age, and work position will have little effect on the effect of the recession. People's status, such as sex, age, and employment status, are permanent, whereas recession is sudden. We did not find that the recession had a higher effect after controlling for other variables. Because the unemployment rate rises during a recession, people have more free time. People will try to balance the amount of time they spend on domestic chores. The most visible sign is an increase in childcare time. Although the economic slump harms society, parents who use their spare time on their children's education will benefit society.

6. Conclusion

In this article, we use data from 2019 through 2021 to examine the influence of COVID-19's recession on the US economy and the effect on the time distribution in US households. We discovered that the impact of the recession on childcare time is more significant than that on eldercare time. When there is a recession, the gap between parents' spending on home care narrows, causing parents to be more balanced in their housework distribution. At the same time, work status substantially impacts household care, with persons who work full-time spending significantly less time on housework. However, housework can still be balanced if both husband and woman work. Recession continues to have an impact when the recession ends.

However, we need more years of data to explore the long-term consequences, which could be a future research direction.

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