

Female Employment and the Coronavirus Pandemic

Alison C. Pomerleau

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Faculty Mentor:

Dr. Luigi Donayre

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Abstract

This paper analyzes the differentiated effects of the COVID-19 lockdowns and partial industry shutdowns on female and male employment by observing historical employment level data and by evaluating its growth rates statistical significance. Early 2020 U.S. employment data showed a stronger negative aggregate growth for women (-17.88% compared to -14.28% for males). Descriptive statistics by business cycle phase on female and male employment levels over time lend support to a disproportionate impact on women during the COVID pandemic, the statistical significance of which is formally evidenced via a rolling-windows analysis. These findings have important policy implications. For example, while the CARES Act unveils its specific advantages for women through payments for children and halted student loan repayment requirements, there may be more appropriate actions for policymakers to target most heavily impacted groups.

Keywords: Gender, employment, labor market, Coronavirus Pandemic, business cycles phase

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1 Introduction

The coronavirus (COVID-19) pandemic caused a large negative impact on employment levels in the United States and across the world. From February to April 2020, when the COVID-19 recession occurred, there was an aggregate growth of -15.98% in total employment in the U.S. This is nearly four times larger than the drop in employment during the nineteen months of the 2007 – 09 Great Recession.

Due to the highly contagious and spreadable nature of the virus, numerous industries were forced to partially shut down in an effort to control the spread. Rothwell (2020) determined the percentage of workers laid off or facing reduced hours or pay as a result of COVID-19 to identify the most significantly impacted occupations (administrative, food, hospitality, laundry, healthcare, and travel service professionals). These occupations faced at least 5.5% of employees laid off, with hospitality jobs facing the highest rate at 16.7% of employees laid off through December 2020. Disaggregation of occupation by gender (BLS 2021) revealed a bias in detriment of female employment during the COVID 19 pandemic, as shown in Table 1.

Not only were female-dominated occupations seemingly more impacted by COVID-19 shutdowns, but also experienced the so-called “Moms’ Emergency” (Fabrizio et al., 2021). The authors describe how mothers of young children have been considerably impacted by shutdowns. Additionally, Alonso et al. (2019) discuss the role of women as primary caretakers and

Table 1: Gender Breakdown of Significantly Impacted Occupations During COVID-19 Pandemic

Occupation	Percent of Total Employed	
	Women	Men
Office and administrative support	72.70%	27.30%
Food servers	77.10%	22.90%
Travel agent services	79.50%	20.50%
Housekeeping or hospitality	88.30%	11.70%
Healthcare practitioners	74.40%	25.60%
Laundry and dry-cleaning services	71.50%	28.50%

Source: U.S. Bureau of Labor Statistics

housekeepers even before the pandemic. Fabrizio et al. (2021) use this idea to emphasize how necessary it became for mothers to leave their jobs, care for children, and lead online education at home during the pandemic. The need for women to leave the workforce and care for their children may have contributed to the intense lowering of their employment levels. This also highlights an issue of gender role inequalities.

All of this evidence motivates the need to formally analyze the possible disproportional negative impact on female employment versus male employment during this period.

1.1 Personal Motivation

Personally, this topic was important to study. Not only because of the data discussed in the previous sub-section, but also my own experiences in the year following March 2020. I saw several female role models in my life have to leave their life careers or be forced to close their own businesses as losses became unsustainable. As a young woman entering the workforce soon, viewing the struggles of these women was not insignificant. I acknowledge that every person, regardless of gender identity, faced extraordinary obstacles throughout this pandemic. Yet, a more personal motivation for this research stems from the events I saw and experienced during this time. It is an extreme feat to have to face a choice between financial and mental stability or continue a business venture that has been encompassing an entire life and livelihood. To watch those close to me go through making this choice motivated me to explore this topic.

1.2 Research Goals

This research analyzes the effects of the COVID-19 pandemic on U.S. female and male employment during the 2020 recession and subsequent recovery. To do this, I determine the growth rates and variations of total, female, and male employment during U.S. postwar recessionary, recovery, and expansionary periods. To analyze the conditions of the labor market

in the COVID-19 recession and determine if there is a different impact on female employment, I use a time-series approach to contrast employment behavior across recessions, recoveries, and expansions, and compare them to that during the COVID-19 recession. Then, a rolling-window analysis is conducted to determine if the difference in growth rates between female and male employment in the 2020 COVID-19 recession is statistically significant.

Research findings indicate that the labor market behavior of the female and male population moved in similar directions and at similar rates during the late 1900s and through the early 2000s. Unsurprisingly, female employment levels experienced stronger positive growth rates during the mid-1900s than men, as more women began to enter the workforce at this time. Aside from this, female and male employment levels did exhibit similar historical behaviors. The separated analysis of the COVID-19 recession and recovery period (February 2020 to March 2021) showed statistically significant differences in female and male employment growth, providing evidence that female employment levels (versus male employment levels) were disproportionately affected during the COVID-19 recession and recovery.

1.3 Paper Organization

The methodology for data collection and analysis are discussed in section 2. Then, I discuss the results of the labor market behavior analysis and significance test in section 3. Finally, in section 4, policy implications for the United States and contextualization of the work between economic studies and society as a whole are addressed.

2 Research Methodology

2.1 Data Collection

All data are retrieved from the Federal Reserve Bank of St. Louis Economic Database (FRED). Employment levels are measured as the number of civilians who are at least sixteen

years of age and residing in one of the fifty U.S. states or District of Columbia. These levels do not include inmates of institutions or those who are not on active duty in the Armed Forces. All employment level figures are seasonally adjusted from the source to remove influences of known seasonal patterns in employment.

Specifically, monthly U.S. total employment (FRED source code: CE16OV), U.S. employment for men (FRED source code: LNS12000001) and U.S. employment for women (FRED source code: LNS12000002) are collected. The units are thousands of persons. The sample spans from January 1948 through August 2021.

Using the Bureau of Economic Research's (NBER) business cycle dating information (NBER, 2021), employment levels for each category (total, female, and male) were separated into three groups: recessionary recovery, and expansionary times.

According to the NBER, recessionary times are defined as the period beginning with the peak of a business cycle and ending at the trough. In these times, there is significant economic decline that is widespread and lasts at least a few months. Meanwhile, I define a recovery period as the twelve months, or four quarters, following a business cycle trough, following Morley, Piger and Tien (2013). Recovery periods are observed when an economy is emerging from a recession and economic activity and employment levels are beginning to bounce back. Expansionary times begin immediately following the recovery and continue until the next business cycle peak.¹ Figure 1 displays the recessionary, recovery, and expansionary periods identified. The dark gray regions represent recessionary periods, the light gray regions represent recoveries, and white areas are expansions.² Additionally, the figure shows total employment

¹ If two recessionary time periods are close together, an expansionary period may fail to occur, as in the period between the 1980 and 1981 recessions.

² See Appendix Item 1 for a further detailed breakdown of recessionary, recovery, and expansionary times by date.

growth over time. Once these dates were established, total, female, and male employment levels were each separated according to the three business cycle phases.

Lastly in the data collection process, pre-1984 and post-1984 sub-samples are considered to study employment behavior before and after the Great Moderation (a shift in economic activity to be less volatile beginning in 1984). This is also important because female employment shifted after 1984, bringing more females into the workforce (Albanesi, 2020). The Great Moderation period lies between the two dashed lines in Figure 1. The COVID-19 time periods were also further isolated in the analysis, as seen by the region to the right of the dashed lines in Figure 1, where most of the analyzed is centered.

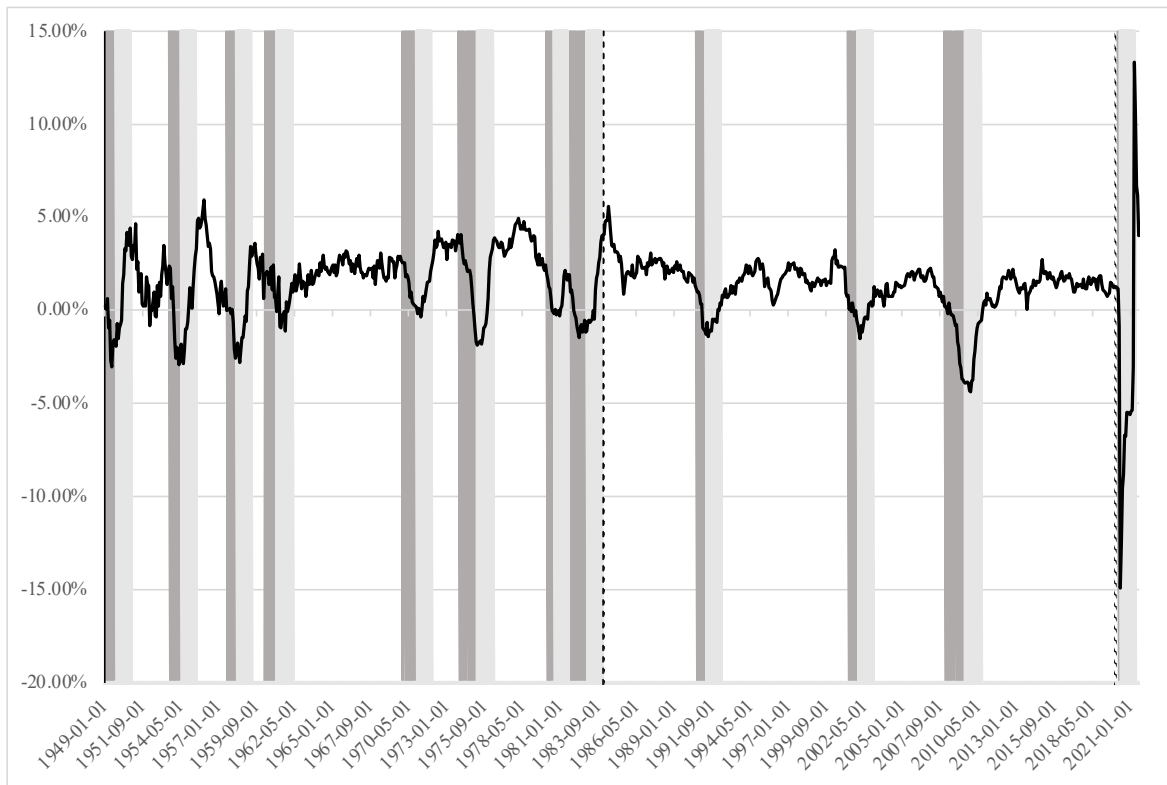


Figure 1: Recessionary, Recovery, and Expansionary Time Periods Among Employment Level Growth

2.2 Analysis Design

Over time, more jobs are created, and employment levels rise, which implies that employment is upward trending. Because of this, comparing employment levels across

recessionary, recovery, and expansionary times is cumbersome. To address this issue, growth rates are calculated to allow for direct comparisons between these periods. For this analysis, the annualized growth rates ($\% \Delta E$) were calculated as follows:

$$\% \Delta E = \frac{E_t - E_{t-12}}{E_{t-12}}$$

where E_t is the employment level at time t , and E_{t-12} is the employment level at time $t-12$.

Because data were only able to be collected beginning in January of 1948, growth rate calculations begin in January of 1949.

Annualized growth rates were obtained for total employment, female employment, and male employment and for each business cycle phase (recessionary, recovery, and expansionary times). Descriptive statistics of the growth rates were subsequently computed for the full sample and the following sub-samples: a pre-1984 period, a post-1984 period, a post-1984 period excluding the COVID-19 time, a COVID-19 period, and the all-time 1948-2021 period. Descriptive statistics were generated for each employment group (total, female, and male) and separated by business cycle phase, shown in Tables 2, 3, and 4 in the following section.

After generating the descriptive statistics of each population and analyzing their differences and the differences between sub-samples within each, a rolling window regression analysis was implemented during the COVID-19 sub-period from February 2020 to March 2021.³ First, the difference between the annualized growth rate for the female population and that for the male population was computed. Then, rolling window regressions of the difference in growth rates for the two populations against a constant term were run. The first window considered included the February 2020 - July 2020 period. Each subsequent window is expanded

³ The end of the rolling windows is selected to coincide with the length of the recovery period considered in the analysis above (12 months or 4 quarters) from the start of the COVID-19 recession.

by adding one month at a time at the end of the window. The last window spanned the February 2020 to March 2021 period.

For each window, a statistically significant intercept term at the 5% or 10% significance level indicates that the differences between female and male growth rates are statistically significant (i.e., if the corresponding p -value of the regression is less than the significant level). In this case, the null hypothesis of similar effects on male and female employment during the COVID-19 time period can be rejected.

3 Results

3.1 Descriptive Statistics

As outlined above, the annualized growth rates from January 1949 to August of 2021 were calculated for total, female, and male employment levels. This information is available upon request. With the growth rates for each population divided into recessionary, recovery, and expansionary times, descriptive statistics were computed for the pre-1984, the post-1984, the 1949-2021, and the post-1984 excluding the COVID-19 periods. The COVID-19 period itself will be discussed later in this section.

Table 2 displays the descriptive statistics for total employment. During recessionary time periods, total employment averaged a growth of 0.39% pre-1984 and -1.00% post-1984, with a growth of -0.69% in the post-1984 excluding COVID time period. Meanwhile, total employment grew, on average, -0.03% during recessions from 1949-2021, with a minimum annualized growth rate of -14.91% and maximum of 4.08% growth. In recovery periods, total employment averages a 0.39% growth pre-1984 and -2.22% growth post-1984. Excluding the COVID-19 time period, total employment averages -1.25% growth post-1984. Total employment has a mean growth of -0.49%, with a minimum of -12.53% and maximum of 12.35% in recovery times for

the full sample. For expansionary time periods, total employment exhibits a 2.08% growth overall, with a minimum of -0.82% and maximum of 10.49%. Pre-1984, total employment averages a 2.57% growth rate. The post-1984 time period including and excluding COVID-19 data have similar growth rates of 1.77% and 1.71% in expansionary times, respectively. Table 2 includes several other statistical descriptions of the total employment population. Overall, total employment exhibits low or negative growth during recessionary times, high maximum growth rates in recovery times, and positive average growth in expansionary times.

Female employment shows similar patterns of growth, in line with the expected trends for recessionary, recovery, and expansionary periods. Table 3 presents the descriptive statistics for female employment within each sub-group. In recessionary times, female employment displayed an average growth of 1.64% pre-1984 and -0.53% post-1984, with a -0.15% growth during that same time period but excluding the COVID-19 data. Average growth for the full sample was 0.99% in recessions for female employment, including a -16.58% monthly growth rate minimum and 5.64% maximum. Recovery times for female employment show a 1.27% growth pre-1984, -1.94% average growth post-1984, and -0.84% growth when excluding COVID-19 dates. Female employment had an all-time average growth of 0.19% in recovery periods with a -13.72% minimum and 15.75% maximum. In expansionary times, pre-1984 average female employment growth was 3.99%, and 1.93% after 1984. When excluding the COVID-19 period, female employment has a 1.87% average growth. All time, this population averaged a 2.73% growth rate in expansionary times, with a maximum of 12.73% and minimum of -1.02%. The remainder of table 3 shows, overall, higher positive growth rates in recovery times, continued positivity in growth rates during expansionary times, and lower or negative growth rates during recession periods for female employment growth.

Table 4 details the descriptive statistics for male employment from January 1949 to August 2021. During recession periods, male employment had an average growth of -0.34% pre-1984, -1.41% post-1984, and -1.15% post-1984 excluding COVID-19 employment level data. From January 1949 to August 2021, male employment averaged a -0.66% growth rate in recessionary times with a maximum growth rate of 3.46% and minimum of -13.43%. In recovery time periods, male employment had an average growth rate of -0.12% pre-1984 and -2.45% post-1984. When excluding COVID-19 recession data, average growth was -1.60% post-1984. Male employment had an all-time average growth of -0.90% during recovery times, with a maximum of 11.30% growth rate and minimum of -11.48%. Lastly, for expansionary times, male employment had an average growth rate of 3.99% pre-1984 and 1.93% post-1984. The average growth did not change much when excluding COVID-19 data, coming in at 1.87%. All time, male employment grew an average of 2.73% in expansionary times, with a minimum growth rate of -1.02% and maximum of 12.63%. As expected, male employment exhibits negative growth during recessionary times, stronger growth in recoveries, and consistently positive growth during expansions.

Focusing on the post-1984 period that excludes the COVID-19 time allows for the most consistent and stable comparison between total, male, and female employment. Before 1984, female employment levels are growing even in recessionary times, showing the labor force expanding to include more women workers. To best compare past female and male employment to the Coronavirus pandemic employment patterns today, I first observe the patterns from 1984 to 2019. During this time, female and male employment moved similarly. During recessionary periods, the average growth of both populations was negative, at -0.15% for females and -1.15% for males, yielding a mean of -0.69% in recessionary times for total employment. Both female

Table 2: Descriptive Statistics for Total Employment

Total Employment 1948-2021				
<i>Recession</i>				
	Pre-1984	Post-1984	All Time 1948-2021	Post-1984 Excluding COVID
Mean	0.39%	-1.00%	-0.03%	-0.69%
Median	0.34%	-0.24%	0.04%	-0.22%
Standard Deviation	1.68%	2.67%	2.12%	1.46%
Minimum	-3.02%	-14.91%	-14.91%	-3.93%
Maximum	4.08%	1.17%	4.08%	1.14%
Count	94	40	134	37
<i>Recovery</i>				
	Pre-1984	Post-1984	All Time 1948-2021	Post-1984 Excluding COVID
Mean	0.39%	-2.22%	-0.49%	-1.25%
Median	0.05%	-1.13%	-0.45%	-0.85%
Standard Deviation	1.64%	3.70%	2.80%	1.42%
Minimum	-2.86%	-12.53%	-12.53%	-4.40%
Maximum	4.42%	13.35%	13.35%	0.45%
Count	95	48	143	36
<i>Expansion</i>				
	Pre-1984	Post-1984	All Time 1948-2021	Post-1984 Excluding COVID
Mean	2.57%	1.77%	2.08%	1.71%
Median	2.52%	1.68%	1.92%	1.68%
Standard Deviation	1.19%	0.99%	1.14%	0.80%
Minimum	-0.82%	-0.52%	-0.82%	-0.52%
Maximum	5.94%	10.49%	10.49%	5.57%
Count	230	365	595	361

Table 3: Descriptive Statistics for Female Employment

Female Employment 1948-2021				
<i>Recession</i>				
	Pre-1984	Post-1984	All Time 1948-2021	Post-1984 Excluding COVID
Mean	1.64%	-0.53%	0.99%	-0.15%
Median	1.75%	0.07%	0.94%	0.13%
Standard Deviation	2.17%	2.79%	2.57%	1.02%
Range	10.83%	18.08%	22.22%	3.90%
Minimum	-5.19%	-16.58%	-16.58%	-2.47%
Maximum	5.64%	1.50%	5.64%	1.43%
Count	94	40	134	37
<i>Recovery</i>				
	Pre-1984	Post-1984	All Time 1948-2021	Post-1984 Excluding COVID
Mean	1.27%	-1.94%	0.19%	-0.84%
Median	0.87%	-1.13%	0.35%	-0.74%
Standard Deviation	1.86%	4.09%	3.19%	1.19%
Minimum	-3.87%	-13.72%	-13.72%	-3.45%
Maximum	5.73%	15.75%	15.75%	1.05%
Count	95	48	143	36
<i>Expansion</i>				
	Pre-1984	Post-1984	All Time 1948-2021	Post-1984 Excluding COVID
Mean	3.99%	1.93%	2.73%	1.87%
Median	3.83%	1.77%	2.35%	1.76%
Standard Deviation	1.66%	1.23%	1.73%	1.03%
Minimum	-0.86%	-1.02%	-1.02%	-1.02%
Maximum	10.27%	12.63%	12.63%	6.16%
Count	230	365	595	361

Table 4: Descriptive Statistics for Male Employment

Male Employment 1948-2021				
<i>Recession</i>				
	Pre-1984	Post-1984	All Time 1948-2021	Post-1984 Excluding COVID
Mean	-0.34%	-1.41%	-0.66%	-1.15%
Median	-0.25%	-0.62%	-0.41%	-0.59%
Standard Deviation	1.68%	2.69%	2.08%	1.89%
Range	7.00%	14.66%	16.90%	6.44%
Minimum	-3.54%	-13.43%	-13.43%	-5.21%
Maximum	3.46%	1.23%	3.46%	1.23%
Count	94	40	134	37
<i>Recovery</i>				
	Pre-1984	Post-1984	All Time 1948-2021	Post-1984 Excluding COVID
Mean	-0.12%	-2.45%	-0.90%	-1.60%
Median	-0.43%	-1.36%	-0.88%	-1.09%
Standard Deviation	1.76%	3.43%	2.68%	1.71%
Range	7.25%	22.78%	22.78%	5.63%
Minimum	-3.24%	-11.48%	-11.48%	-5.27%
Maximum	4.01%	11.30%	11.30%	0.36%
Count	95	48	143	36
<i>Expansion</i>				
	Pre-1984	Post-1984	All Time 1948-2021	Post-1984 Excluding COVID
Mean	1.81%	1.64%	1.71%	1.59%
Median	1.81%	1.55%	1.63%	1.54%
Standard Deviation	1.12%	0.95%	1.02%	0.81%
Minimum	-1.24%	-0.40%	-1.24%	-0.40%
Maximum	4.23%	8.64%	8.64%	5.11%
Count	230	365	595	361

and male populations only ever reached a maximum employment growth rate of about 1.30% in recessionary times. Both groups experienced relatively similar volatilities in employment with standard deviations of 1.02% for females and 1.89% for males. In the economic recoveries that followed these recession periods, the two populations experienced average negative growth, with rates of -0.84% for females and -1.60% for males. Once again, these populations seemed to experience similar volatilities in employment level growth rates with standard deviation measures of 1.19% and 1.71% during the post-1984 (excluding COVID figures) period. Throughout expansionary times, female and male employment levels behaved remarkably similar with an average growth rate of 1.87% for the former and 1.59% for the latter. Both populations experienced similar volatilities in expansion growth and ranges in growth rates.

Table 5: Aggregate Growth in the COVID-19 Recession for Total, Female, and Male Population

Total		Female		Male	
Date	Employment Level	Date	Employment Level	Date	Employment Level
2020-02-01	158732	2020-02-01	74865	2020-02-01	83867
2020-03-01	155536	2020-03-01	73234	2020-03-01	82302
2020-04-01	133370	2020-04-01	61478	2020-04-01	71892
Total Growth	-15.98%	Total Growth	-17.88%	Total Growth	-14.28%

The closeness in growth rates and volatilities in female and male employment throughout historical business cycles supports the similarity in impacts that both populations experienced during recessionary, recovery, and expansionary times. After establishing this result, the COVID-19 period is studied in detail. Table 5 presents aggregate growth for total, male and female employment during this period. The stark difference between the female and male aggregate growth rates during the three months of the COVID-19 recession is apparent, with a -17.88% growth for the female population and -14.28% for the male population. Total employment grew by -15.98% during this period. Unlike any time in history, female employment is being negatively impacted more intensely than total employment, on average. Table 6 details the full descriptive statistics for the total, female, and male population during the COVID-19 time periods. Mean employment growth rates for the female population outperform that of males in all three business cycle phases. The female population also has a higher standard deviation, and therefore volatility, by over 2 percentage points in recessionary times. Male employment growth has a smaller standard deviation than female growth in recovery and expansionary times. Female employment growth rates reach a minimum of -16.58% compared to only -13.43% for men. A maximum positive growth rate of 15.75% for women versus 11.30% for men supports the idea that female employment took a larger negative impact during the recession, being forced to grow more quickly and intensely afterward. All of these major differences between male and female employment growth during the COVID-19 recession, recovery, and expansion reinforces

the idea that female employment experienced a harsher impact relative to male employment.

Table 6: Descriptive Statistics during COVID-19 Periods for Total, Female, and Male Employment

	Total Employment	Female Employment	Male Employment
<i>Recession</i>			
COVID 02/20-04/20			
Mean	-4.85%	-5.23%	-4.52%
Median	-0.81%	-0.62%	-0.98%
Standard Deviation	8.77%	9.88%	7.78%
Minimum	-14.91%	-16.58%	-13.43%
Maximum	1.17%	1.50%	0.87%
Count	3	3	3
<i>Recovery</i>			
COVID 05/20-04/21			
Mean	-5.12%	-5.25%	-4.99%
Median	-5.56%	-6.02%	-5.48%
Standard Deviation	6.32%	7.15%	5.62%
Minimum	-12.53%	-13.72%	-11.48%
Maximum	13.35%	15.75%	11.30%
Count	12	12	12
<i>Expansion</i>			
COVID 05/21-08/21			
Mean	6.83%	7.75%	6.04%
Median	6.43%	7.02%	5.91%
Standard Deviation	2.70%	3.52%	2.03%
Minimum	3.99%	4.33%	3.69%
Maximum	10.49%	12.63%	8.64%
Count	4	4	4

3.2 Regression Analysis

Though the descriptive statistics evidence a disproportional impact on female employment during the COVID-19 recession and subsequent recovery period, a regression analysis is conducted to examine its statistical significance. As described in the previous section, an expanding window regression analysis of the difference between male and female employment against a constant was conducted. For the February 2020 to March 2021 period, the growth difference proved statistically significant. Figure 2 displays the estimated coefficients for

each of the 9 windows computed in the February 2020 – March 2021 period. Additionally, 5% and 10% confidence bands are displayed in dashed lines. The estimated coefficients are well contained within the significance level bands, revealing a statistically significant difference between male and female employment growth. From February 2020 (the start of the COVID-19 recession) to March 2021, female and male employment levels experienced different levels of impact, with female employment facing a larger negative impact.

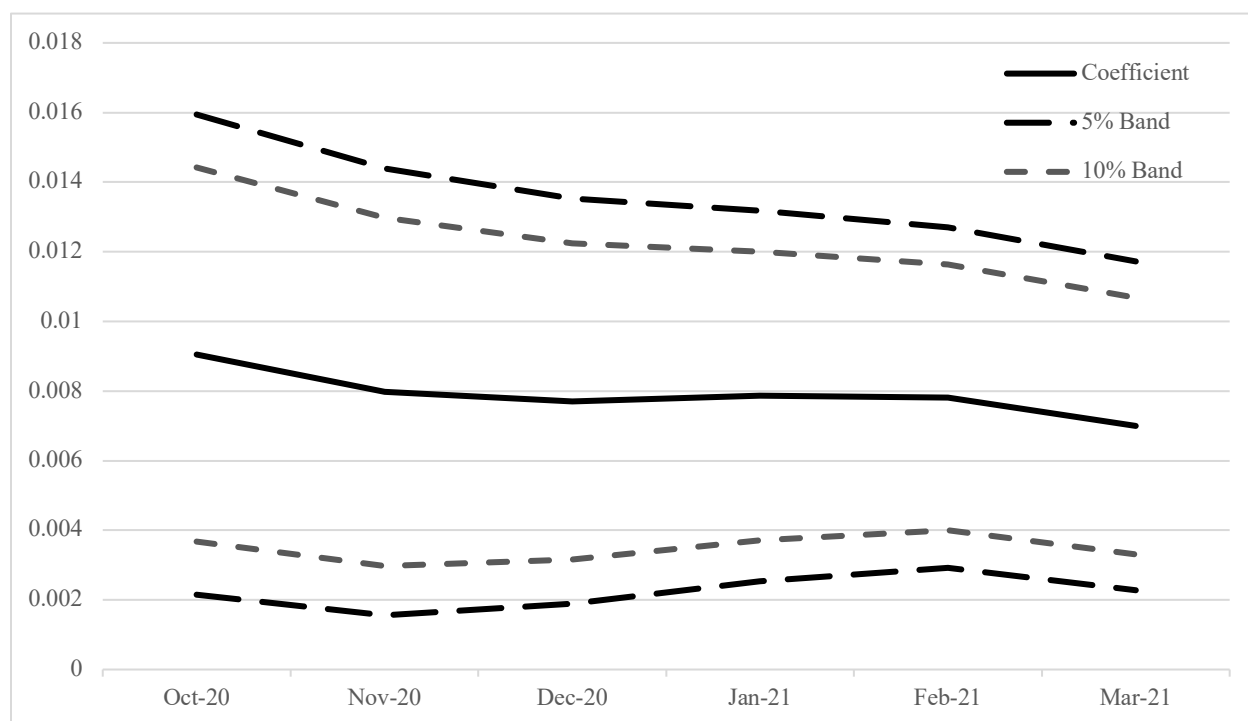


Figure 2: Expanding Rolling-Windows Regressions (February 2020 – March 2021)

3.3 Discussion of Results

Descriptive statistics of U.S. postwar recessionary, recovery, and expansionary periods support the notion that female and male employment growth behaved similarly in terms of direction and magnitude prior to the 2020 recession. During the COVID-19 period, stark differences were revealed by the descriptive statistic presented above. An additional regression analysis provides statistically significant evidence that female and male employment levels were

impacted differently in this period. Female employment levels were impacted more negatively during the COVID-19 recession and recovery period, potentially driven by the unequal impact on female-dominated occupations and the “Moms’ Emergency” phenomenon.

4 Conclusion

4.1 Policy Implications

These findings have important policy implications. Due to the emergent nature of the pandemic, it was extremely difficult for policymakers to informatively make decisions and create fiscal stimulus packages that best targeted those groups most affected. In this section, I will evaluate the policies that were enacted so far during the COVID-19 pandemic period and how they have specifically impacted female employees in the United States.

In the months following February 2020, several government-funded packages were implemented to stimulate the economy and support citizens. Of all OECD countries, United States spent nearly 12% of GDP in early fiscal packages (Romer, 2021). The CARES Act of March 2020 was promptly approved to provide relief to individuals in the U.S. by issuing direct stimulus payments and stipends per child to households across the country (American Bar Association, 2020). The act also halted student loan payment requirements and interest buildup and expanded unemployment benefits. These parts of the CARES Act are particularly important for women in the U.S. First, women are more likely to take the role of primary caretaker over children and leave their work to do so (Frederiksen et al., 2020). The direct stimulus payments and children stipends aid many women as they endure the “Moms’ Emergency” phenomenon and must leave work to stay home with their children. Unemployment benefit expansion helps in a similar way by supplying temporary additional monetary support. Furthermore, Education Data Initiative research shows women hold a larger proportion of total student debt in the United

States (Hanson, 2021). The student loan debt relief provided by the CARES Act helps in this regard, as payment requirements are suspended, and interest is not being accrued. Lastly, the CARES Act provided millions of dollars to fund purchases of personal protective equipment for healthcare workers. Of the healthcare practitioners in the U.S., about 75% of them are women, as seen in Table 1. This aspect of government policy support helps women who continued working in this industry be better protected every day while working.

There have been several other federal government implementations following the CARES Act, like the Consolidated Appropriations Act, the Paycheck Protection Program and Health Care Enhancement Act, and the American Rescue Plan. Fed authorities also lowered interest rates to the zero lower bound, making credit easier to access (International Monetary Fund, 2021). All of these actions expanded upon existing or provided some additional stimulus payments, as well as other resources to aid citizens as the pandemic continued, employment remained uncertain, and many individuals continued to need assistance.

In the end, the actions of policymakers in the United States helped the citizens of the country. The direct stimulus payments, stipends per child, and student loan payment halts definitely helped the female population who are often primary caretakers of children and hold sums of student debt. However, the enacted policies did not specifically target women as the most negatively impacted employment group. As Romer (2021) also critiques, the enormous sum of general stimulus provided throughout this novel recession and recovery were able to help some of the necessary groups but failed to provide direct aid to those most negatively affected. The emergent character and quickness of the pandemic may have not allowed for an appropriate assessment of the environment before stimulus needed to be dispersed, resulting in a failure of appropriate distribution and subsequent waste of much of the funds. There are likely more

efficient ways to assess economic and employment conditions in future downturns, so policymakers can most effectively make decisions to target aid more toward necessary populations. Doing so would help avoid the wasting of stimulus on groups who are not in need. This is left for future research.

4.2 Contextualization of Work

Employment levels are a fundamental indicator of business cycles and the economy's health. It is valuable to study the patterns and trends of these levels, especially during times of unprecedented events. Observing the behavior of employment and other economic foundations allows researchers to better understand how these foundations behave in certain conditions. This is critical as research supports policymakers' decisions, and those decisions affect citizens across the country. This research is not just helping economists and business-world leaders understand trends; it will influence decisions that directly impact individuals in the United States and the world. In this work specifically, observing the difference in behavior between female and male employment allows the field to understand how populations may be affected differently in pandemic recessions, which may better inform decisions in future similar scenarios.

This research briefly explores the many consequences of the Coronavirus Pandemic, which will continue to be studied in future work. Understanding the complexities of this time period and how it affected the economy in all various ways is critical as the country tries to act in the best interest of its inhabitants. The only way it can do this is by understanding how certain external forces affect economic variables and using historical understanding and observations to respond in a way that is most beneficial.

5 Appendix

Item 1A

Business cycle phases dates (the Great Moderation period is shown as the shaded region and the COVID-19 period as the dark gray shaded region).

U.S. Postwar Recessionary, Recovery, and Expansionary Dates		
Recessionary	Recovery	Expansionary
11/1948 - 10/1949	11/1949 - 10/1950	01/1948 - 10/1948
07/1953 - 05/1954	06/1954 - 05/1955	11/1950 - 06/1953
08/1957 - 04/1958	05/1958 - 04/1959	06/1955 - 07/1957
04/1960 - 02/1961	03/1961 - 02/1962	05/1959 - 03/1960
12/1969 - 11/1970	12/1970 - 11/1971	03/1962 - 11/1969
11/1973 - 03/1975	04/1975 - 03/1976	12/1971 - 10/1973
1/1980 - 07/1980	08/1980 - 06/1981	04/1976 - 12/1979
07/1981 - 11/1982	12/1982 - 11/1983	12/1983 - 06/1990
07/1990 - 03/1991	04/1991 - 03/1992	04/1992 - 02/2001
03/2001-11/2001	12/2001 - 11/2002	12/2002 - 11/2007
12/2007 - 06/2009	07/2009 - 06/2010	07/2010 - 01/2020
02/2020 - 04/2020	05/2020 - 04/2021	05/2020 - 08/2021

Source: National Bureau of Economic Research

Note : All dates are listed as MM/YYYY

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