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The ‘She-cession’: A look at Women’s Labor during the Covid-19 Pandemic

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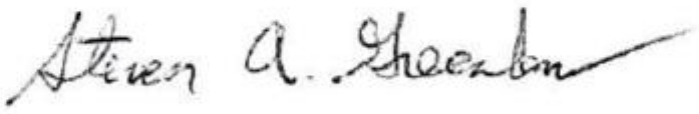

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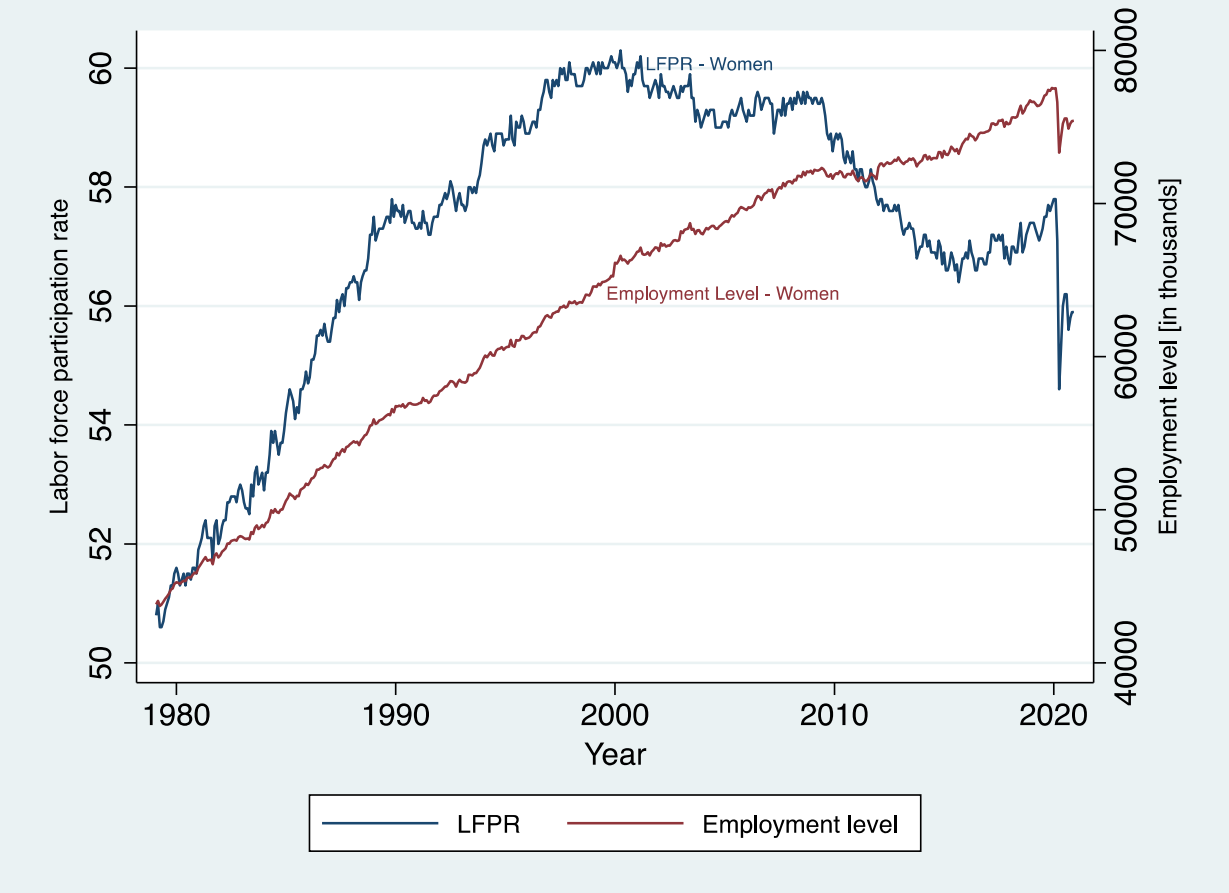
I. Introduction

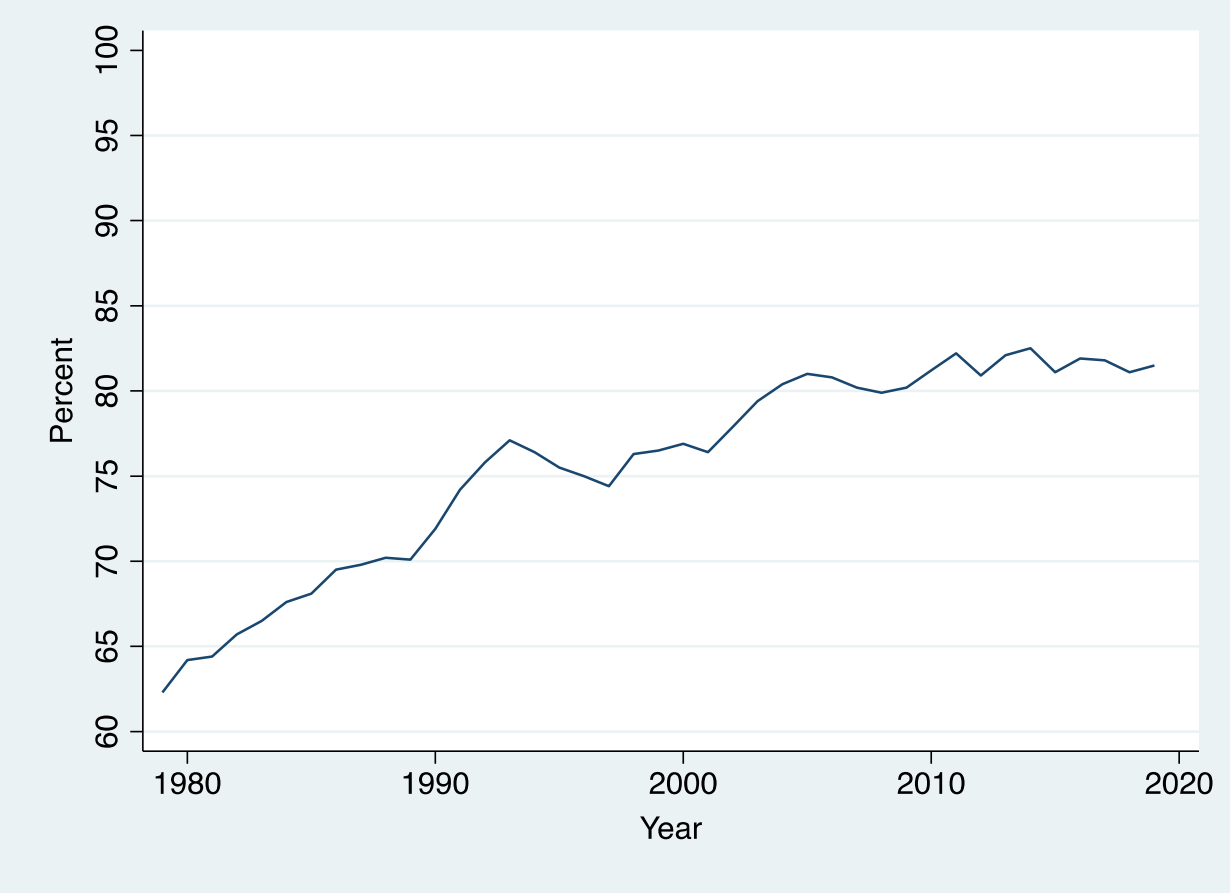
Over the past few decades there has been an increasing number of women in the United States labor force (see Figure 1). This growth has been made possible by increased attainment of higher education, family planning options, and equal opportunity legislation (Bureau of Labor Statistics 2019). As women have increased their presence in the labor force, their earnings have also risen and begun to more closely match the earnings of their male colleagues (see Figure 2) (Bureau of Labor Statistics 2019). While these advancements of the women's labor force are significant, the current economic recession, related to the Covid-19 pandemic, raises questions about the longevity of women's workforce progress and subsequent earnings. This is of particular concern because although women have made notable strides in educational attainment and workforce presence, there is still a persistent gap in the wages of men and women. Women's median weekly earnings only amounted to 81.5% of men's median weekly earnings pre-recession in 2019 (Hegewisch and Barsi 2020). There is substantial empirical research examining why the disparity between men and women's wages exists, however because the 2020 recession was likely caused by a global pandemic, various inequalities both social and economic have been exposed within the United States, this exposure may further reveal how social attitudes and behaviors contribute to the labor force participation and earnings of women. In this paper I will review the theories and observations about the position of women in the United States labor force during 2020 in order to better understand the implications of the pandemic on women's earnings potential and future labor force participation.

Figure 1. Labor Force Participation and Employment Level – Women 1980-2020



Sources: Bureau of Labor Statistics, Labor Force Participation Rate - Women [LNS11300002] (Washington, DC: U.S. Department of Labor, 2020); Bureau of Labor Statistics, Employment Level – Women [LNS12000002] (Washington, DC: U.S. Department of Labor, 2020).

Figure 2. Women's median weekly earnings as a percent of men's 1979-2019



Source: Bureau of Labor Statistics, "Women's earnings as a percentage of men's for full-time wage and salary workers, 1979-2019 annual averages," (Washington, DC : U.S. Department of Labor, 2020), chart 1.

I.I Covid-19

On January 21, 2020 the Center for Disease Control and Prevention (CDC) confirmed the first Covid-19 case within the United States. Only 10 days later on January 31, a public health emergency was declared (U.S. Department of Health and Human Services 2020). However, although there were reported cases of the virus in the U.S. during January and February of 2020, much of the virus panic was avoided until March, when the number of Covid-19 cases started to increase and a national emergency was declared (Thebault, Meko and Alcantara 2021). Just as Covid-19 was becoming a reality to many Americans, research found that social distancing

measures could reduce the rate of infection (Thebault, Meko and Alcantara 2021). Subsequently, the CDC recommended the cancelation of large gatherings and influenced U.S. state governments to enforce shutdown orders (Thebault, Meko and Alcantara 2021). In addition to various state social-distancing mandates there were cancelations and delays of numerous social gathering events such as the NBA's remaining basketball season and MLB's baseball season (Thebault, Meko and Alcantara 2021). Social distancing also resulted in the temporary closure of countless non-essential, high-contact businesses, specifically businesses that could not operate solely online such as public schools and restaurants, leaving many unemployed temporarily or permanently (Thebault, Meko and Alcantara 2021).

Social distancing measures along with other circumstances created by the global pandemic induced trends in the labor market that are unique to this particular recession. More specifically, the Covid-19 pandemic and subsequent recession have disproportionately affected women's labor, whereas most recessions have had more significant effects on men's employment. In addition to the conditions of the pandemic that have influenced women's employment, there are various social forces that have affected women's labor force participation. It is the intention of this research to discuss the long-term implications on women's labor and wages by examining these forces.

II. Review of Literature

The global- Covid-19 pandemic and the United States economic recession that followed, are on-going and unresolved, as a consequence, there is a lack of peer reviewed empirical research examining the current labor market situation. Thus, what limited peer reviewed research exists will be supplemented in this paper with the findings of working papers and news articles that have followed the events of 2020 closely. Additionally, because Covid-19 is a health-crisis, which has

exposed certain economic, political and social flaws in the U.S., it is important for this paper to review interdisciplinary studies. Therefore, in conjunction with the review of past and present empirical economic research, this paper will discuss the findings of sociologists, political scientists, and journalists. Each of these disciplines offer unique perspectives on the pandemic and recession, which will be useful in understanding the long-term implications of the current situation on women's labor force participation and earnings.

The circumstances created by the global, Covid-19 pandemic have affected different industries and groups of people differently than in the past. Previous empirical research has found that in virtually all preceding recessions, industries that were closely linked to the business cycle experienced the highest unemployment (Alon et al. 2020). Cyclical industries such as automotive and construction were significantly affected during the 'Great Recession' in 2008, because of their dependency on economic growth (Bureau of Labor Statistics 2012). However, during the 2020 recession, industries that were less affected in the past like the restaurant and airline industries, were significantly affected due to social distancing. This phenomenon has likely affected women's employment shares more significantly than men's because women tend to have higher employment in service occupations (Alon et al. 2020). These service occupations also generally pay less, which contributes to lower earnings for women and the greater likelihood for women to live in poverty compared to men (Bleiweis, Boesch, and Gains 2020).

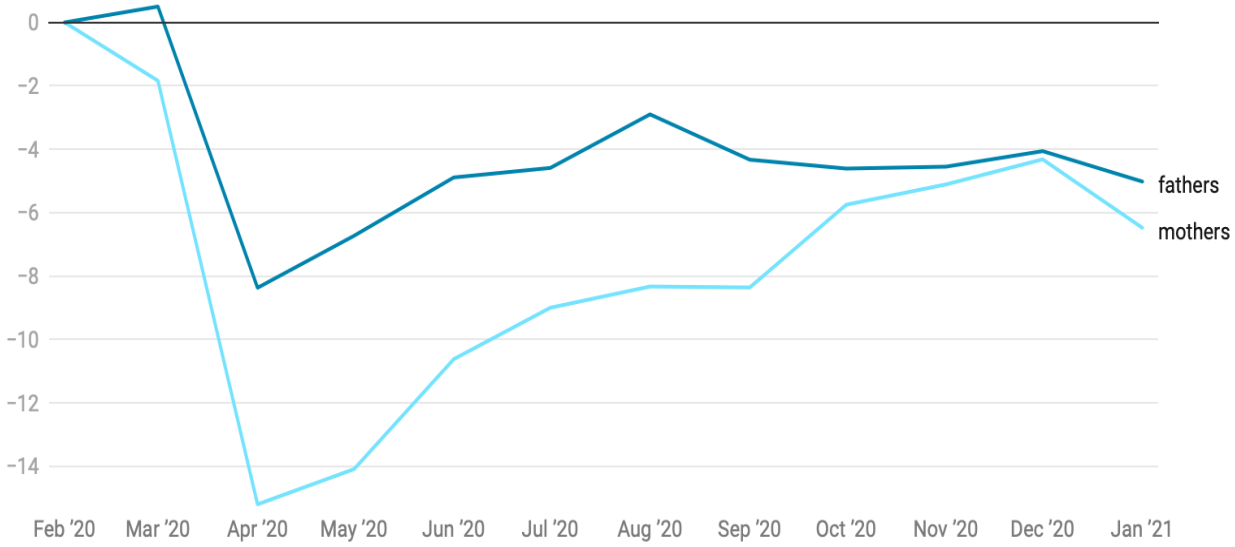
The pattern of lower-wage occupations experiencing high unemployment for long periods of time during the 2020 recession, while higher wage occupations have experienced more modest unemployment has been referred to as the K-shaped recession recovery (Siegel, Dam and Werner 2021). This recovery pattern not only impairs women's employment but has also had significant effects on minority labor (Siegel et al. 2021). This pattern is further realized as occupations that

were able to move most or all operations online to abide by social distancing measures, as well as occupations that already had teleworking capabilities (mostly professional/white collar jobs) were able to continue functioning amidst the pandemic. Loften et al. (2021) calculated the share of parents to overall employment within an occupation by gender, using data from the Current Population Survey and the American Time Use Survey, and they found that women were less likely to be unemployed during the pandemic if they were in an occupation that allowed for telework and had flexible hours. In addition to the types of occupations women generally hold, parental status may have also contributed to their labor force participation and level of earnings during the 2020 recession.

During the early weeks of the pandemic, many American schools and daycare centers closed in order to limit the spread of Covid-19. These closures were meant to be temporary solutions however continued for months. Thus, the pandemic created another unique problem; the loss of childcare for working parents. Parents with children under 18 years old experienced extensive losses in employment, with mother's changes in employment exceeding father's changes in employment throughout the entirety of the pandemic (see Figure 3) (Rampell 2021). The conundrum to find childcare was worsened by pandemic fear, causing families who once relied on grandparents, friends, and neighbors to look after their children, to leave the workforce in order to care for them themselves (Alon, et al. 2021). One study suggested that women were disproportionately taking on this responsibility of parenting and childcare, even when both parents worked from home (Calarco, et al. 2020). Calarco, a sociologist, supported this theory with surveys, diary entries and in-depth interviews collected from mothers during the pandemic (2020). Her findings are consistent with pre-pandemic economic research that found that caretaking was the most frequently reported reason for unemployment among women with children (Christnacht

and Sullivan 2020). Another study, again completed pre-pandemic, suggests that one-third of mothers under 40 years old were no longer working in order to care for their children (Malik and Morrisse 2020). Furthermore, women with multiple children generally had lower labor force participation than women with only one child (Sadler and Szembrot 2020).

Figure 3. Employment of parents with children under age 18: Percent change since February 2020 (not seasonally adjusted)



Source: Catherine Rampell, "Opinion: More covid relief is urgent. January's jobs report shows where the need is greatest," (Washington, DC: *The Washington Post*, 2021), fig. 3.

The decisions of mothers to leave work or attempt to balance telework and caregiving more than fathers, is likely partially due to financial decision making based on the fact that women generally earn less than men (Calarco 2021). Prior research suggests that women who were mothers experienced temporary declines in earnings and a permanent setback in the likelihood of returning to the labor force after having children (Sadler and Szembrot 2020). However, there is also evidence that during recessions women face gender-based stereotypes about childcare,

making them more likely to be laid-off than fathers (Dias, et al. 2019). Additionally, social norms may have influenced women to take on the role as the primary caregiver.

These patterns in the women's labor force and in society prior to and during the pandemic suggest that women have continuously faced more barriers to higher earnings and employment than men. This research will reveal that those patterns have not only persisted during the 2020 recession but have become more prominent, likely causing long-term declines in women's labor and earnings.

III. Trends

The labor market is a complex institution that relies on various worker and employer behaviors as well as outside economic forces, such as government regulations. Furthermore, because the disproportionate effects on women's labor during the 2020 recession are likely caused by both economic and social factors, the interpretation of this issue is further complicated. In order to clarify how the 2020 recession has directly affected women's labor force and earnings, there is a series of graphs and explanations provided, which expand on the trends in women's labor during the long run and during the global pandemic. The aforementioned explanations and figures have been organized in such a way as to provide a narrative about women's labor before and during the recession. The series begins with long-run and macroeconomic data and finishes with highly specific occupational data from 2020.

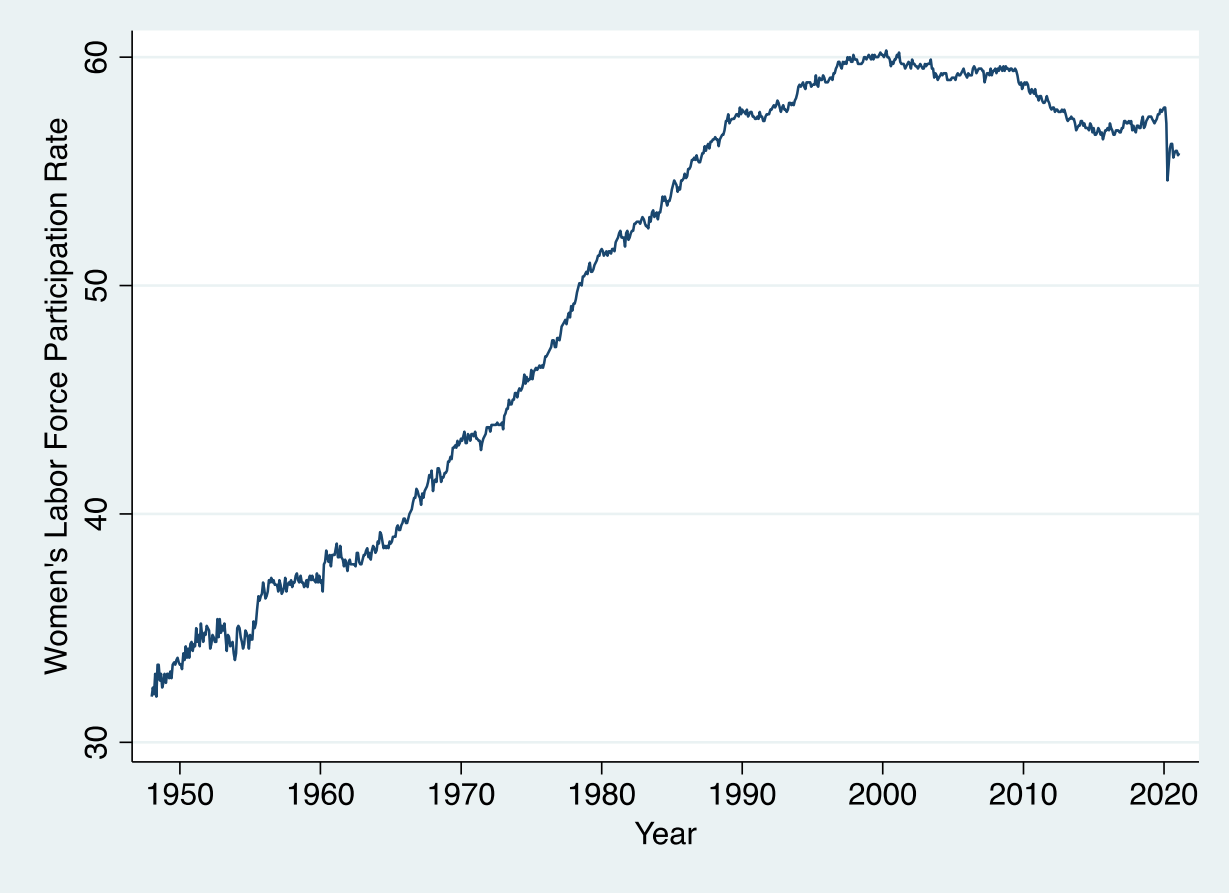
III.I Women's Labor

An important factor in determining the overall health of an economy is LFPR, which describes the amount of labor that is available for the production of goods and services within the

economy; if women are not participating, our production capability as a country falls causing decreases in gross domestic product and hurting the standard of living overall. Because LFPR captures both employed and unemployed persons, it is also important to differentiate that the employment level represents persons within the labor force that are employed. Employment level is another important indicator of economic health, since women who are in the labor force but are not employed are not able to contribute to production. The 2020 pandemic and recession have had significant effects on both the labor force participation and employment of women relative to men and thus on the overall health of the economy.

Over time the labor force participation rate of women in the United States has trended positively. For decades following the 1950's there was a clear increasing trend in women's LFPR, however in the 21st century there have been spurts of decline, with a significant decrease in the years following the Great Recession in 2009 (due to the business cycle) (see Figure 4). The LFPR for women increased modestly between 2015 and 2020 (pre-recession), however had not yet fully recovered to the rate it had been prior to the Great Recession.

Figure 4. Labor Force Participation – Women 1950-2020

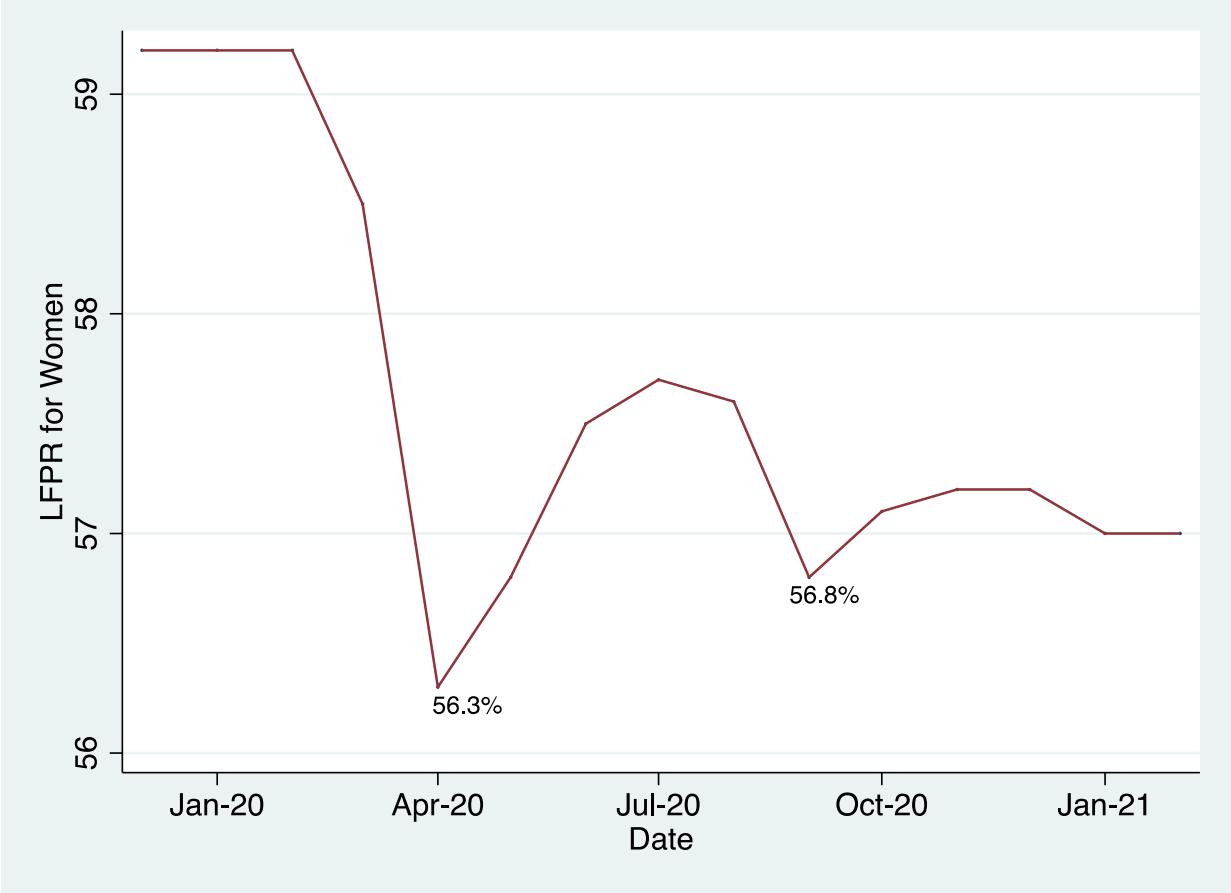


Source: Bureau of Labor Statistics, Labor Force Participation Rate - Women [LNS11300002] (Washington, DC: U.S. Department of Labor, 2020).

Preceding the spread of Covid-19 into the U.S., in January 2020 the monthly labor force participation rate for women was 59.2%, where it remained for the duration of February 2020. In March 2020, after the national emergency was declared and state governments began implementing precautionary measures to prevent the spread of Covid-19, women's LFPR fell to 58.5% (see Figure 5). Roughly 926,000 Women lost their jobs, and 1.08 million women left the labor force all together in March, but this was just the beginning (see Figure 6). For context men's LFPR fell from 71.6% to 70.9% (also a decline of 0.7 percentage points) in March 2020. In April 2020 roughly 3.68 million additional women left the U.S. labor force and the LFPR for women

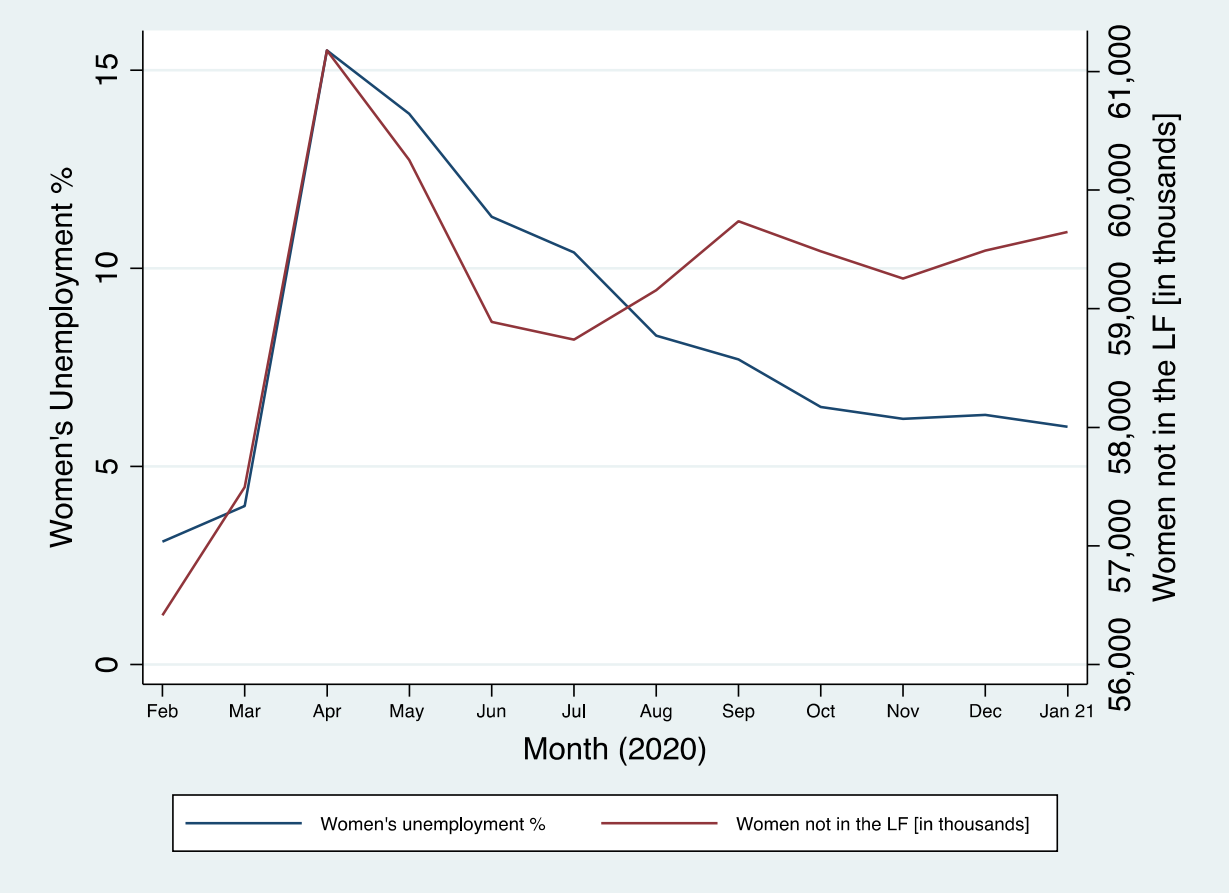
plummeted by over 2 percentage points in April (to 56.3), this is an immense decline in the context of LFPR within such a short time period. In comparison to the Great Recession, the greatest decline in LFPR for women within one month was between September and October of 2013 when it fell 0.4 percentage points (from 58.8%-58.4%). Also, during April the unemployment rate among women increased from 4% in March to 15% (note that women who left the labor force are not calculated in the unemployment rate, only women in the labor force can be considered unemployed). The LFPR of women rose to 56.9% in May and fluctuated back and forth throughout the rest of 2020, ping-ponging between 56% and 57%. By December 2020 women's LFPR sat at 57.2%, making no progress from November 2020, and still 2 percentage points behind December of the previous year. Overall, women experienced sharp declines in employment during 2020. We observe a fall from 74,078,000 employed women to 69,234,000 employed women within a very short period, which is indicative of the volatility associated with the Covid-19 global pandemic (see Figure 7).

Figure 5. Labor Force Participation Rate – Women 20 years and older



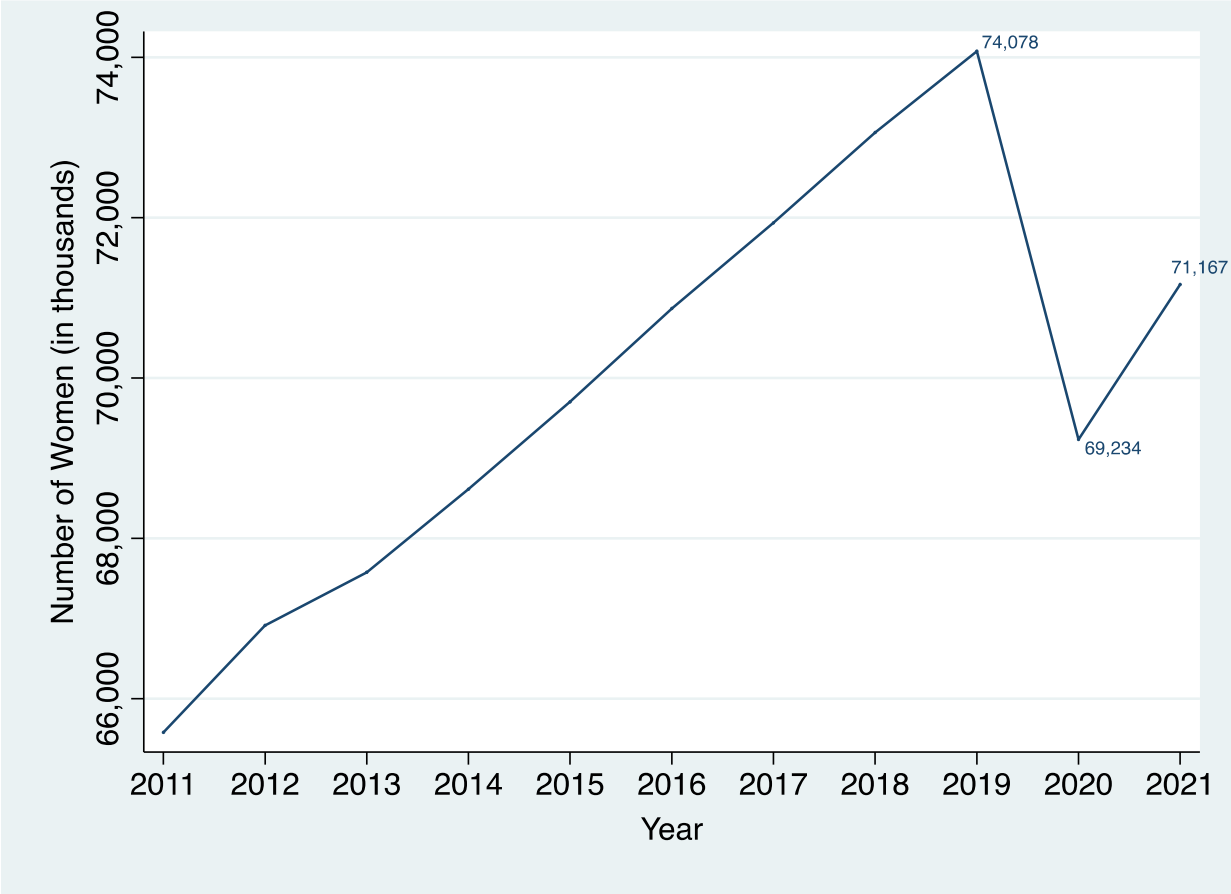
Source: U.S. Bureau of Labor Statistics, Labor Force Participation Rate – 20 yrs. & over, Women [LNS11300026], (Washington, DC: U.S. Department of Labor, 2020).

Figure 6. Unemployment rate and persons not in the labor force – Women



Sources: Bureau of Labor Statistics, Unemployment rates 1948-2020, seasonally adjusted, (Washington, DC: U.S. Department of Labor, 2021); Bureau of Labor Statistics, News Release: The Employment Situation – [February 2020- January 2021], (Washington, DC: U.S. Department of Labor, 2021), table A-16.

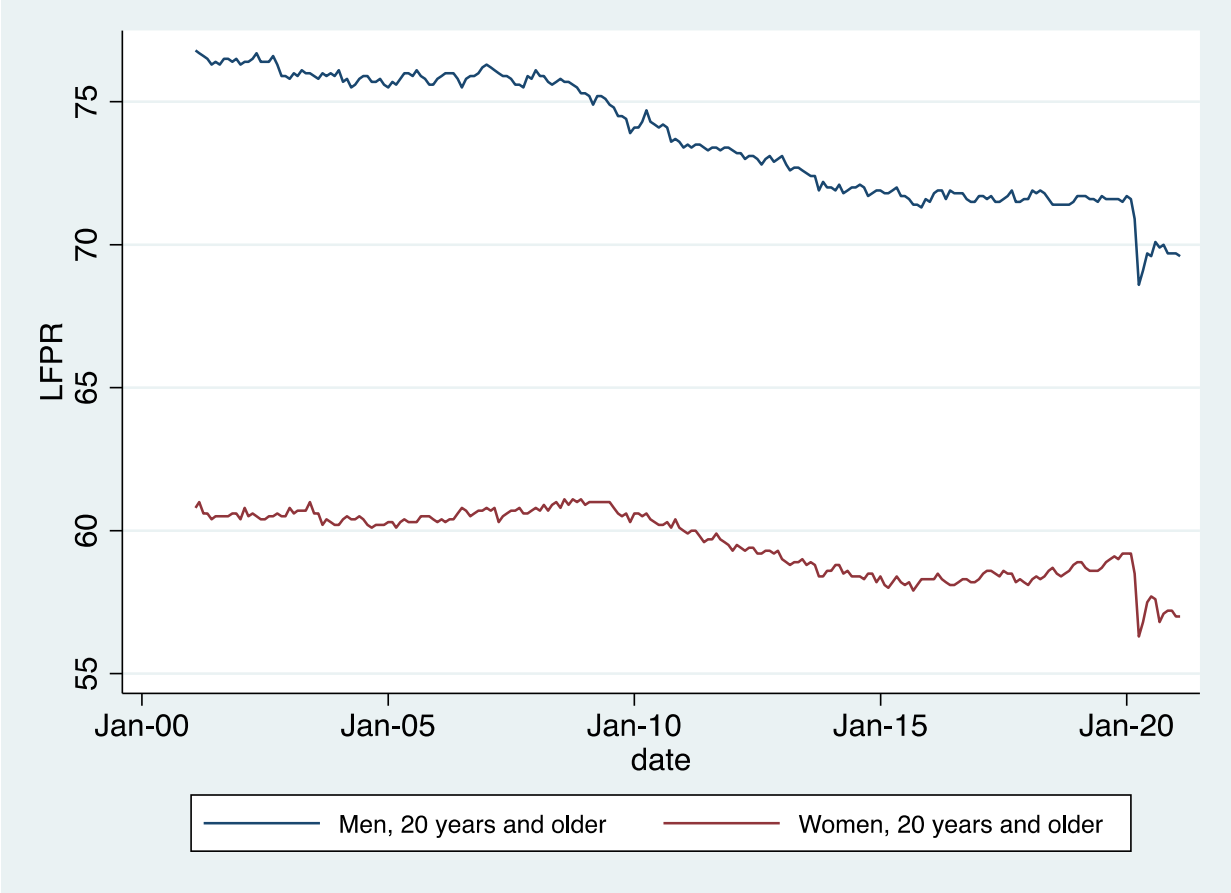
Figure 7. Employment for Women from 2011-2021



Source: Bureau of Labor Statistics, Employment status of the civilian noninstitutional population 16 years and over by sex, 1980 to date, (Washington, DC: U.S. Department of Labor, 2021), fig. 2.

Relative to men's, women's LFPR has been recovering slower. The LFPR of men 20 years and older in February 2021 was 69.6% which was only 1.2 percentage points lower than it had been in December of 2019 (Bureau of Labor Statistics (1) 2021). In contrast the LFPR for women in February was 57%, which was 2.2 percentage points lower than their participation rate in December of 2019 (Bureau of Labor Statistics (1) 2021). Although, men historically have higher LFPR then women, the lag in women's LFPR recovery illustrates the difference between this recession and previous recessions (see Figure 8).

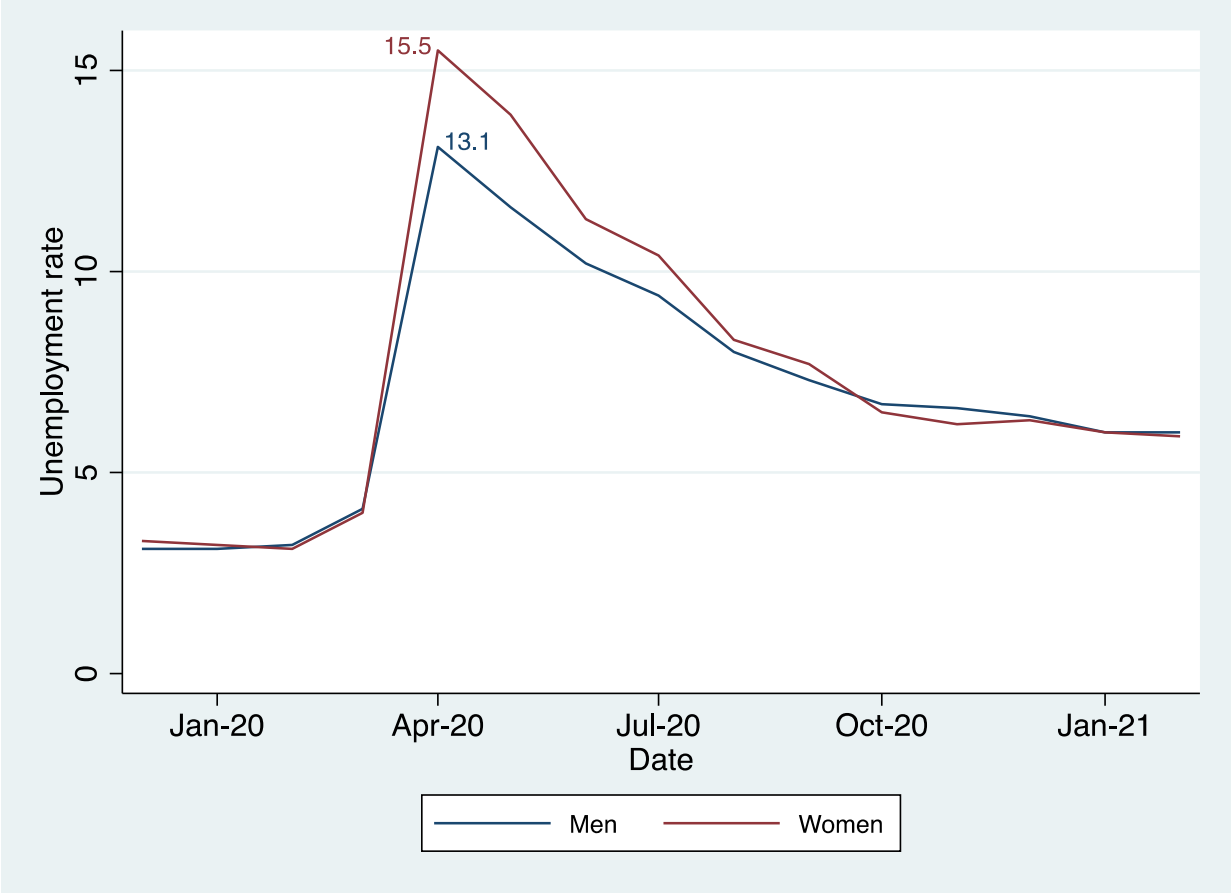
Figure 8. Labor Force Participation Rate for Men and Women from 2001-2020



Source: Bureau of Labor Statistics, Civilian labor force participation rate - Men [LNS11300025], (Washington, DC: U.S. Department of Labor, 2021); Bureau of Labor Statistics, Civilian labor force participation rate - Women [LNS11300026], (Washington, DC: U.S. Department of Labor, 2021).

In terms of employment, it appears women have also been worse off during the 2020 recession, particularly during the months of the highest unemployment. During the business cycle periods of expansion, men and women generally have similar unemployment rates, however this is not the case during the current recession. From April 2020 until October 2020 women had higher unemployment than men, with men's unemployment remaining at least a whole percentage point lower than women's unemployment during the four worst months (April-July) (refer to Figure 9). In April specifically, men's unemployment rate was 13.1% while women's unemployment rate was 15.5% (over a 2-percentage point difference) (Bureau of Labor Statistics (1) 2021).

Figure 9. Unemployment Rate – Men and Women 2020



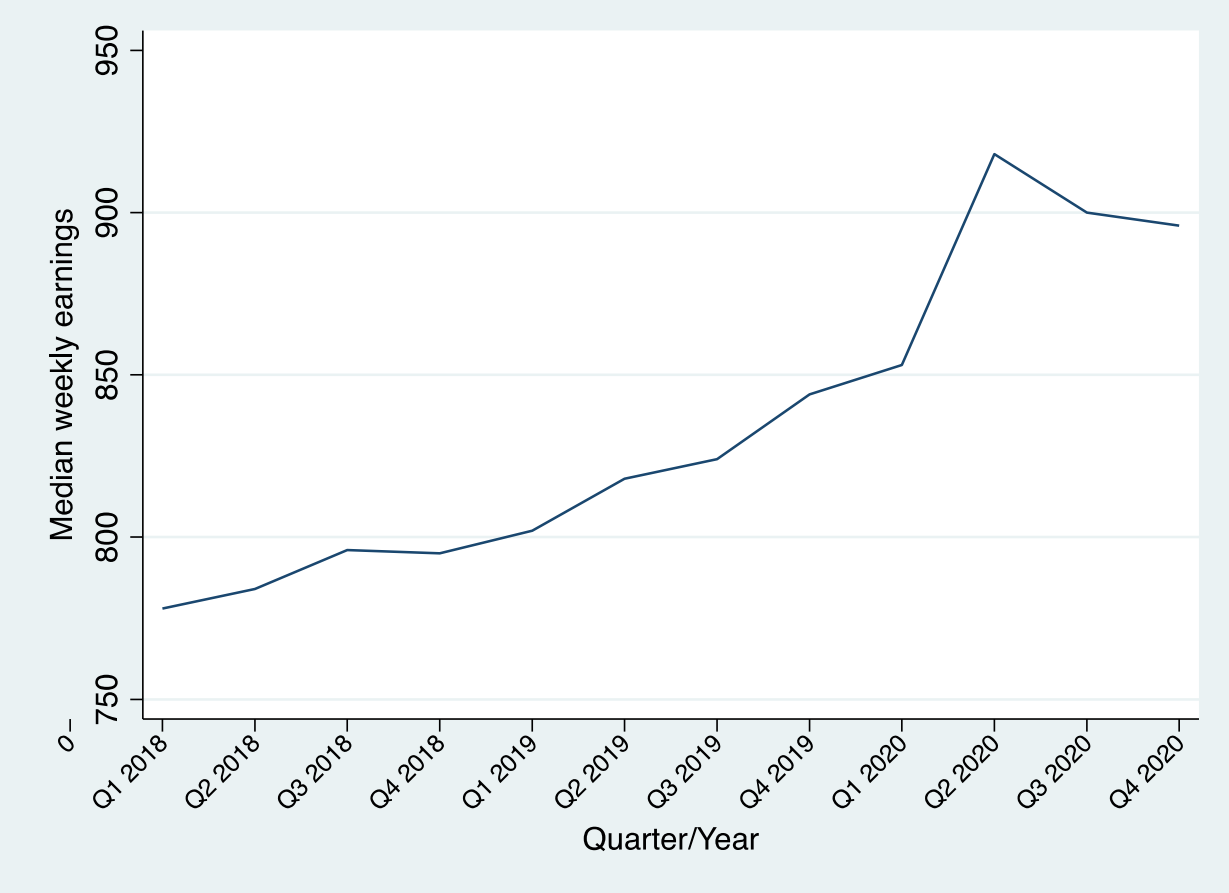
Source: Bureau of Labor Statistics, Unemployment rates 1948-2020, seasonally adjusted, (Washington, DC: U.S. Department of Labor, 2021).

During the course of 2020 women's median weekly earnings fluctuated some, with an average of $853 in 2020.1 and an average of $896 at the end of the year (Bureau of Labor Statistics (2) 2021). During 2020.2 median weekly earnings reached $918 for women which is indicative of the high unemployment at the time and suggests that women with lower-paying jobs were becoming unemployed at a higher rate than women with higher earnings (Bureau of Labor Statistics (2) 2021). Additionally, during March through June 2020 some occupations were offering hazard pay to incentivize working with the risk of contracting Covid-19 (Kinder, Stateler and Du 2020). In 2020.3 the median weekly earnings for women fell to $900 as most hazard pay

was suspended, and unemployment began to improve. All race and ethnic groups of women saw increases in median weekly earnings during 2020; though Asian women and white women maintained the highest weekly earnings, and white women experienced the highest increase in median weekly earnings between 2019.4 and 2020.4 (see Figure 10) (Bureau of Labor Statistics (2) 2021). In 2020.4, Asian women within the first decile* of usual weekly earnings, earned $496 weekly (+1.81% change from 2019), white women earned $475 (+8.45% change from 2019), African American women earned $411 (+8.16% change from 2019), and Hispanic/Latina women within the first decile earned $411 (+7.59% change from 2019) (Bureau of Labor Statistics 2019). The increase in median usual weekly earnings is likely associated with the decrease in the availability of low-wage jobs, since the median rises when low wages are no longer included in the estimate.

* Ten percent of all full-time wage and salary workers earn less than the upper limit of the first decile

Figure 10. Median usual weekly earnings of full-time wage and salary workers – Women



Sources: Bureau of Labor Statistics, Median usual weekly earnings of full-time wage and salary workers by sex, quarterly averages, seasonally adjusted, (Washington, DC: U.S. Department of Labor, 2021), table 1.

III.II Industries & Occupations

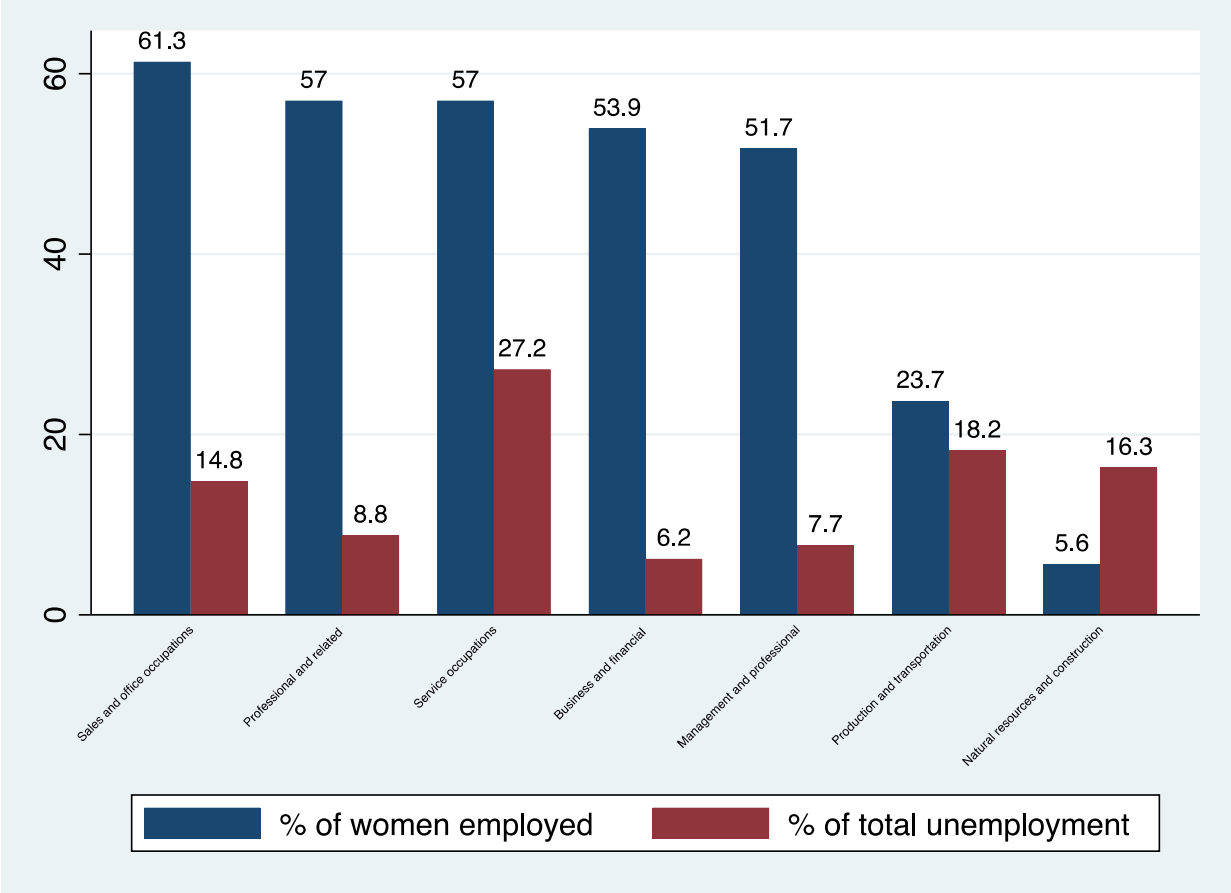
Social distancing along with the recession had various effects on different industries and occupations based upon the degree of human contact in which they operated and whether or not they were deemed essential. The Department of Homeland Security described essential businesses as those that "conduct a range of operations and services that are typically essential to continue critical infrastructure operations" (Hultin 2020). In general, non-essential businesses with a high degree of human contact, such as restaurants and childcare services, experienced high unemployment. Essential businesses with a high degree of human contact, such as hospitals and

grocery stores, and businesses with a low degree of human contact experienced modest unemployment. This is the effect of state and local mandates which were enforced in order to reduce the spread of Covid-19.

Unemployment during 2020 also varied among women based on their level of skill, or more specifically their educational attainment. It is generally accepted that low-skill occupations are considered to be occupations that require a high school diploma or less to qualify for, middle-skill occupations require more than a high school diploma and less than a bachelor's degree, and high-skilled occupations are considered to be occupations that require a bachelor's degree or higher (Fuller 2016). The annual averages for unemployment among women with low skills was 13.6 for women without a high school diploma and 9.7 for women who completed high school (Current Population Survey 2020). The annual average during 2020 for women who qualified as middle-skilled was 8.3 (Current Population Survey 2020). Finally, the annual average for women with high skills was 5.1 (Current Population Survey 2020). This data shows that unemployment was highest among women with low skills and lowest for women with high skills.

Among the industries most effected with the highest levels of unemployment are Service, Production and transportation, Natural resources and construction, and Sales and office occupations (see Figure 11). Service occupations were the most effected by unemployment due to the high degree of human contact required and non-essential status; 57% of employed persons within these service occupations were women. Sales and office occupations were also greatly affected by the recession and social distancing with unemployment reaching 14.8% in 2020; 61.3% of employed persons within the sales and office industry were women (see Figure 11).

Figure 11. Concentration of women and unemployment by occupation



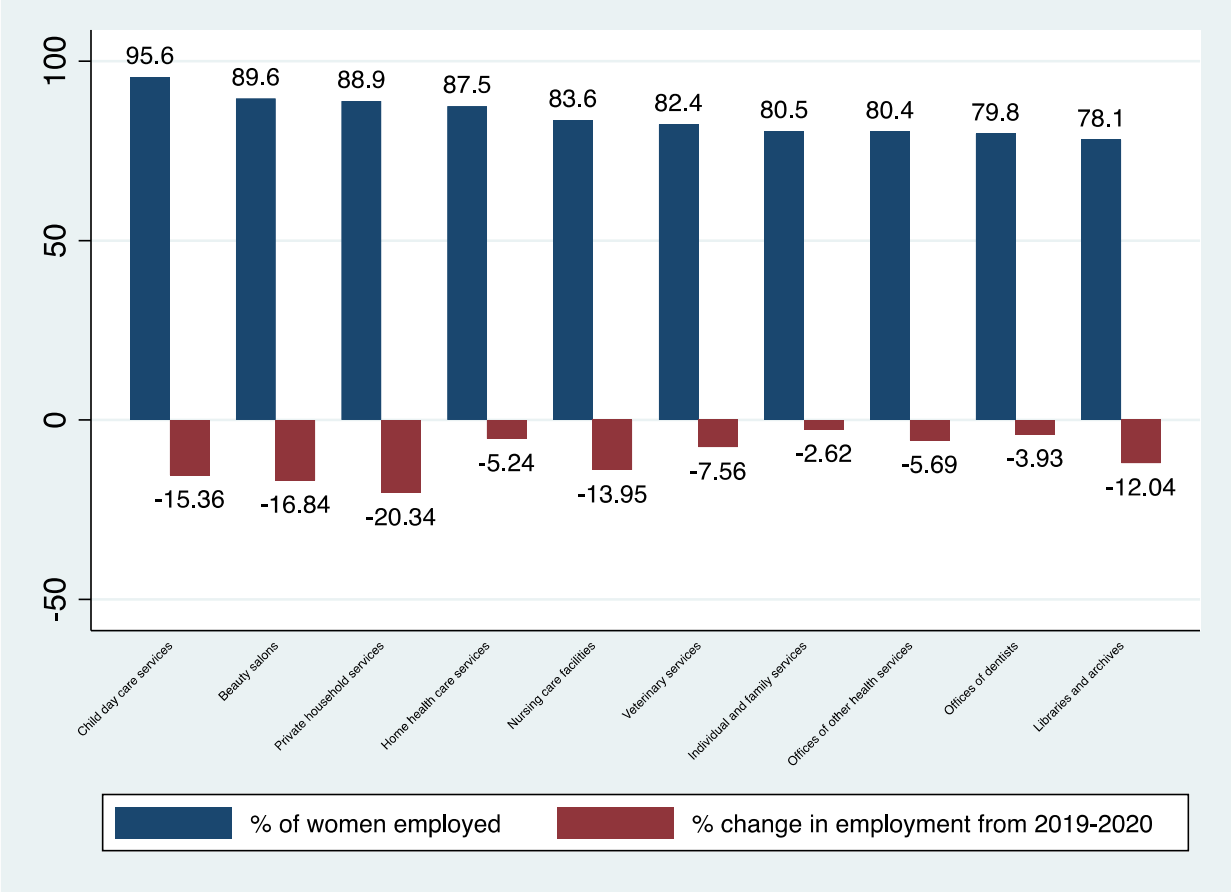
Sources: Bureau of Labor Statistics, Employed persons by detailed occupation, sex, race, and Hispanic or Latino ethnicity (Washington, DC: U.S. Department of Labor, 2021), table 11; Bureau of Labor Statistics, Employed and unemployed persons by occupation, (Washington, DC: U.S. Department of Labor, 2020), table A-13.

The ten detailed occupations which employ the highest concentration of women are child day-care services, beauty services, private household services, home healthcare, nursing care, veterinary services, individual and family services, offices of other health practitioners*, dental services, and libraries (Bureau of Labor Statistics (1) 2021). The three most women-concentrated occupations including child day-care services, beauty services, and private household services, experienced significant declines in employment with percentage changes from 2019 of -15.36%,

* According to the BLS offices of other health practitioners include chiropractors, optometrists, mental health practitioners, speech therapists, etc.

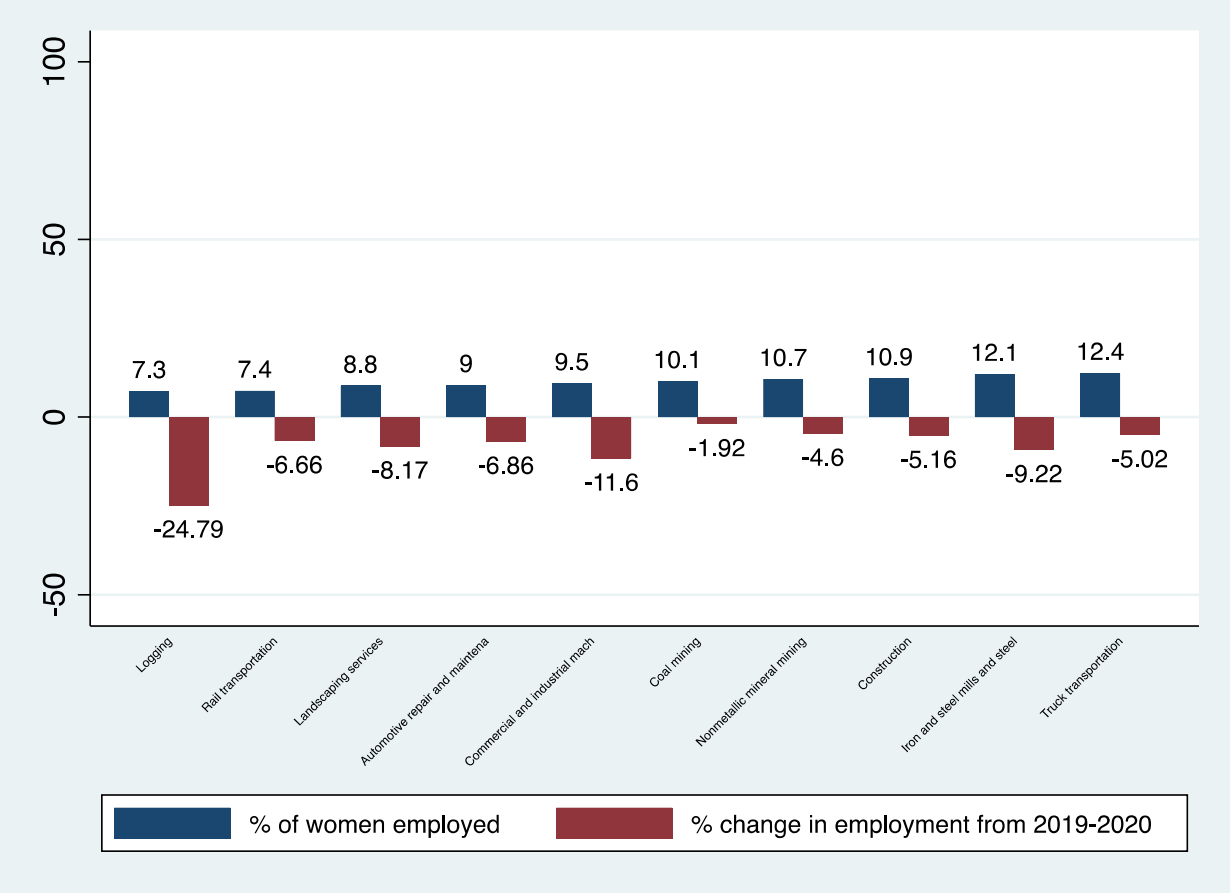
-16.84%, and -20.34% respectively (refer to Figure 12). The average percent change among the previously listed 10 occupations was -10.35% from 2019-2020. In contrast, detailed occupations with the smallest concentration of women experienced more modest changes in employment (with the exception of logging) (refer to Figure 13). The average percentage change in employment from 2019-2020 for the 10 least women-concentrated occupations was -8.4% (see Figure 13).

Figures 12. Detailed industries and percentage change in employment – Women concentrated



Sources: Bureau of Labor Statistics, Employed persons by detailed occupation, sex, race, and Hispanic or Latino (Washington, DC: U.S. Department of Labor, 2020), table 11; Bureau of Labor Statistics, Employed persons by detailed occupation, sex, race, and Hispanic or Latino ethnicity (Washington, DC: U.S. Department of Labor, 2021), table 18; Bureau of Labor Statistics, Employed and unemployed persons by occupation, not seasonally adjusted (Washington, DC: U.S. Department of Labor, 2020), table A-13.

Figure 13. Detailed industries and percentage change in employment – Men concentrated



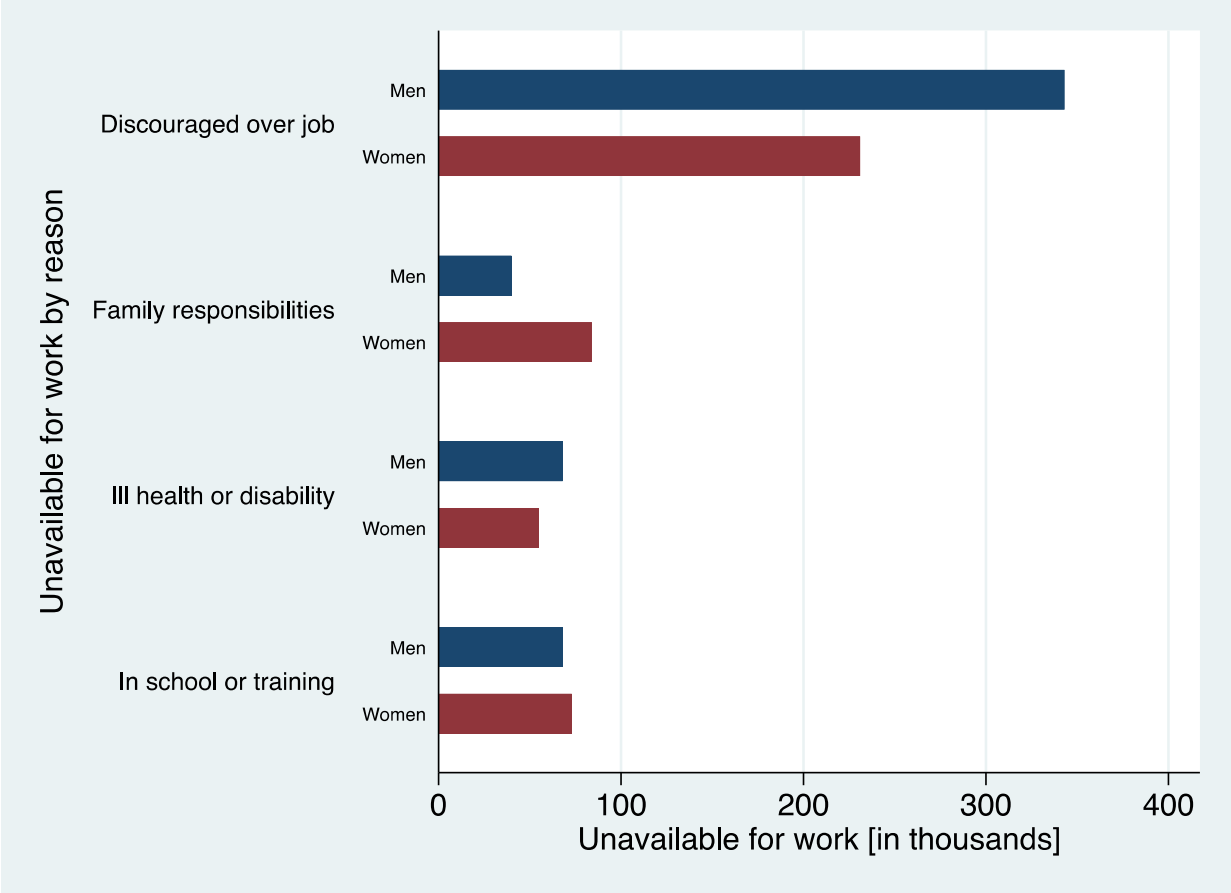
Sources: Bureau of Labor Statistics, Employed persons by detailed occupation, sex, race, and Hispanic or Latino (Washington, DC: U.S. Department of Labor, 2020), table 11; Bureau of Labor Statistics, Employed persons by detailed occupation, sex, race, and Hispanic or Latino ethnicity, (Washington, DC: U.S. Department of Labor, 2021) table 18; Bureau of Labor Statistics, Employed and unemployed persons by occupation, not seasonally adjusted (Washington, DC: U.S. Department of Labor, 2020), table A-13.

III.III Relevance of Motherhood

In early March of 2020, upwards of 50,000 public schools and various child-care services closed in order to limit the exposure of Covid-19 (American School & University 2020). This had a significant impact on the employment of parents, and more specifically mothers (recall Figure 3) (Rampell 2021).

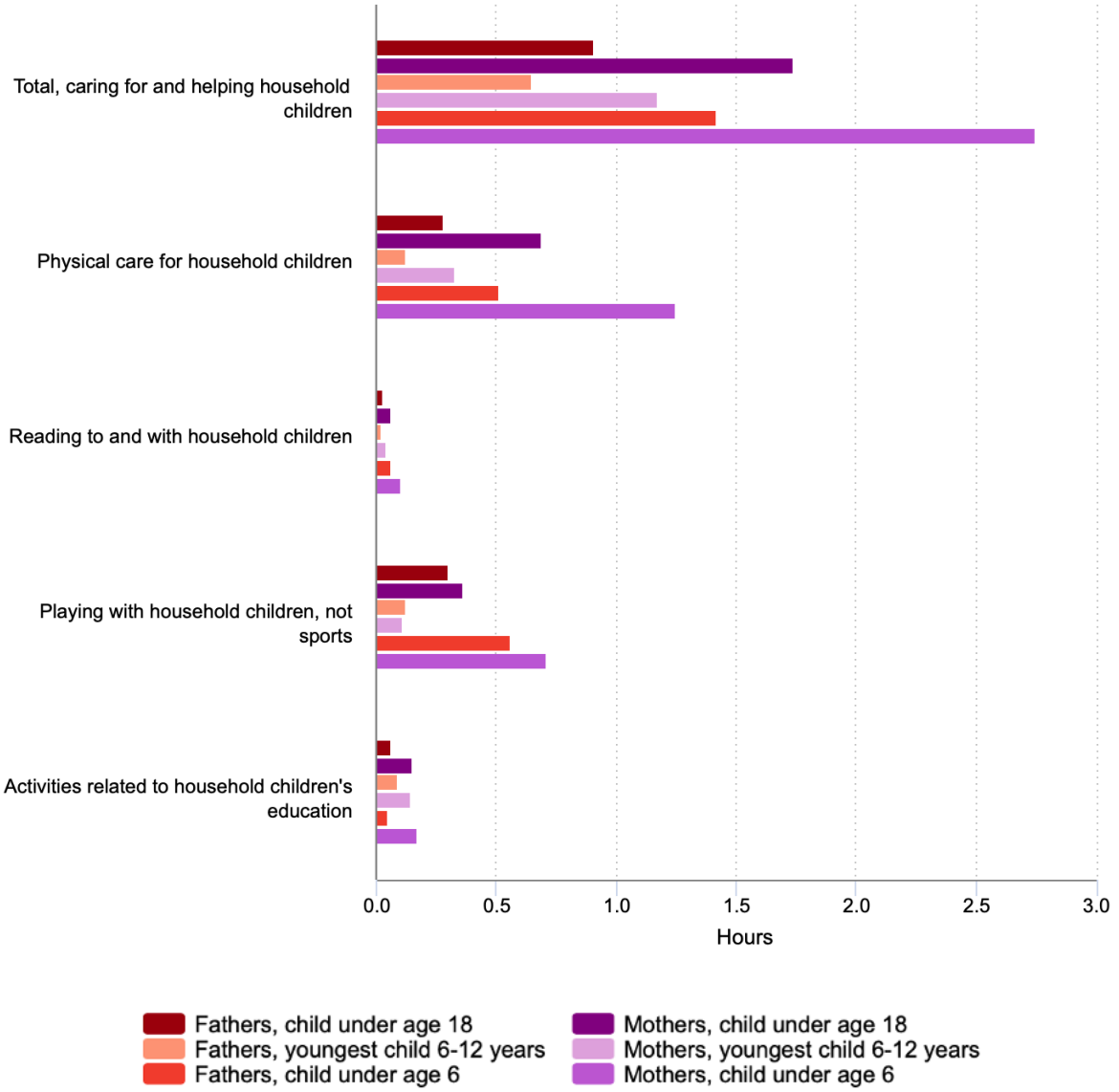
During 2020 women frequently reported that the reason they were out of the labor force was because of family responsibilities (the #1 reason being discouragement over job opportunities), however for men, family responsibilities was the least reported reason for being out of the labor force during the same period (see Figure 14). Additionally, pre-recession mothers reported spending more time caring for their children then men who were fathers, for children of all ages (refer to Figure 15) (Bureau of Labor Statistics 2020). The effect was also more prominent for women who had children under 6 years old, likely because children under 6 are more likely to spend more time at home than school-age children (see Figure 16). These data suggest that during the 2020 recession and pandemic, women who were mothers faced higher losses in employment and labor force participation, which likely contributed to the worsening of the motherhood penalty effect. The motherhood penalty is described as the disadvantages in pay and benefits for mothers, which contributes to the gender wage gap (Budig 2001).

Figure 14. Persons not in the labor force by reason and sex



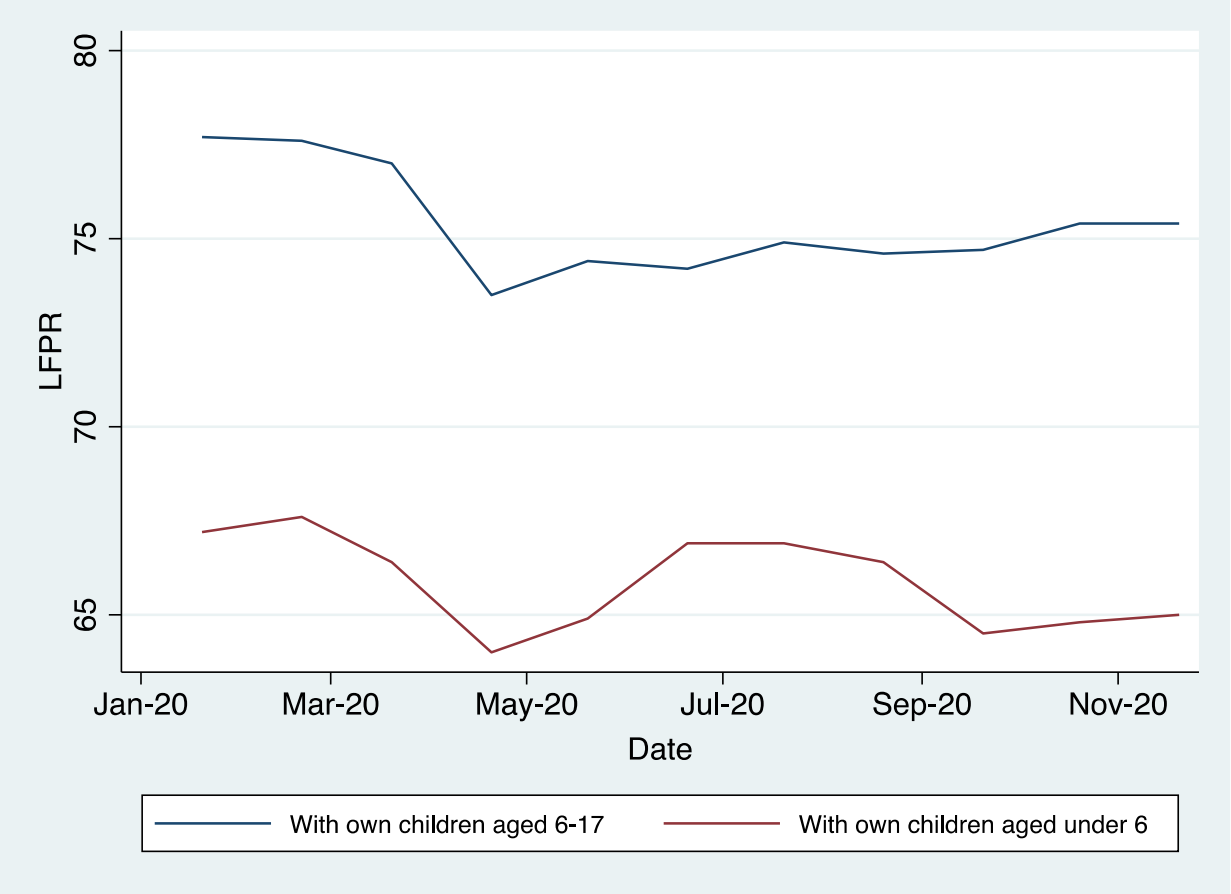
Source: Bureau of Labor Statistics, Persons not in the labor force by desire and availability for work, age, and sex (Washington, DC: U.S. Department of Labor, 2021), table 35.

Figure 15. Average hours per day parents spent caring for and helping household children as their main activity, 2019 annual averages



Source: Bureau of Labor Statistics, 2020, Average hours per day parents spent caring for and helping household children as their main activity (Washington, DC: U.S. Department of Labor, 2021).

Figure 16. Labor Force Participation Rate of Women with children – by age of children



Source: Bureau of Labor Statistics, Employment recovery in the wake of the COVID-19 pandemic, (Washington, DC: U.S. Department of Labor, 2020).

IV. Implications

Data on the U.S. labor force during the global Covid-19 pandemic and resulting recession, show significant negative effects on women's employment and labor force participation rate. From examining this data, it is evident that the types of occupations women held, and their parental status had substantial influence on whether or not they would remain employed and/or in the labor force during 2020. By reviewing relevant labor theories in the context of this data, it is the motivation of this research to determine or speculate the future implications of the pandemic/recession on women's LFPR and earnings.

There are various economic theories pertinent to the speculation of the future LFPR and earnings of women. In this section, theories associated with the loss of skills during unemployment, the loss of skills during early parenthood, labor compensation, and the cost of labor will be discussed in addition to historical trends in LFPR and earnings after recessions.

IV.I Deterioration of Human Capital

Similar to past recessions, the deterioration of human capital needs to be considered when speculating about the future LFPR and earnings of unemployed women during 2020. Individuals who have experienced long periods of unemployment, regardless of the reasons they were not employed, often face various barriers to regain employment. Research conducted prior to 2020 suggests that people who are unemployed long-term, that is they are unemployed for 6 months or longer, are 45% less likely to get interviews and their chances of finding a job fall 50% if they are unemployed for 8 or more months, due to the loss of skills necessary for their desired occupation (Jarosch and Pilossoph 2016).

As of March 2021, women's unemployment rate was still high at 5.7% with roughly 4,365,000 unemployed and 1,902,000 women who have been unemployed for 27 weeks and over[*] (Bureau of Labor Statisitcs 2021). In addition to women who are technically considered long-term unemployed, there are currently 59,096,000 women not in the labor force, with the majority of those women reporting the reason they were out of the labor force as discouragement of job opportunities and family responsibilities (refer to Figure 14).

Although human capital deterioration effects all unemployed persons, it is likely to have a larger impact on people with higher skill sets, since they have more human capital to lose. Thus,

[*] The Bureau of Labor statistics defines long-term unemployed as persons who have been actively seeking employment for 27 weeks or longer.

low-skilled women, who made up a majority of the female unemployed population during 2020 (and early 2021) may have an easier time regaining employment after the pandemic is over. While women that would have been affected more significantly by human capital deterioration, specifically college educated, high-skilled women, were able to maintain employment at higher rates during the recession likely due to the low-contact nature of high-skill work (see Figure 11: business and finance/management and professional). However, there is a concern that middle-skilled women will be affected by human capital deterioration in the long run since middle-skill occupations experienced relatively high unemployment compared to high-skill occupations and require more training and education than low-skill occupations.

Based on previous research on the deterioration of human capital, it is reasonable to predict that unemployed women and women out of the labor force, who did not work for long periods of time during the 2020 recession will have a more difficult time returning to the labor force and finding employment, specifically those seeking middle or high-skilled occupations. In addition to human capital deterioration caused by extensive unemployment, these women have foregone gains in experience and likely earnings. A temporary decline in earnings after the recession is expected.

The decline in earnings that women will likely face potentially parallel the decline in earnings new-mothers experience when taking time off after childbirth. One study that compiled income and earrings data of women who had 1 or more children, found that mothers who did not work until one year after the birth of their child, on average did not recover their loss in earnings until 5 quarters after returning to work (Sandler and Szembrot 2020). Furthermore, these mothers were unable to return to their pre-child earnings track even after being employed for an extensive period (Sandler and Szembrot 2020). It is anticipated that the declines in earnings for women, after the pandemic has subsided and they are able to partially regain employment losses, will be

comparable to the losses women experience after having children, because women who were laid-off due to social distancing will likely return to the same or similar jobs (which is generally the case after women have children).

Women, specifically mothers, who have not faced unemployment are still likely to face lower earnings following the current pandemic and economic downturn, due to a reduction in labor productivity. Mothers who retained employment during the pandemic because they were able to work from home, were forced to balance telework and childcare, as day-cares and public schools were not able to operate. Jessica Calarco, a sociologist following changes in motherhood during the pandemic, suggests that mothers are facing setbacks in their careers as a result of caregiving and working from home, since caring for children often does not allow time for extra projects and over-time work that lead to increases in earnings (Calarco 2021).

IV.II Labor and Employer Incentives

There have been frequent fluctuations, extensive declines and slow subsequent recovery in women's LFPR during the 21st century, and more specifically after the Great Recession. Additionally, there remains a high concentration of women in service based, low-wage type occupations. These two factors are presumably related, since low wages do little to incentivize employment, thus causing women to leave the labor force if they are able. Therefore, when speculating about the future of women's LFPR, low-wages and the existence of a gender wage gap should be considered. Equity theory suggests that if women feel they are not being paid fairly (externally and individually) for the amount of work they are doing, they are less likely to 1. perform well in their job which may actually lead to lower wages and 2. remain in their job for an extended period of time (Business Jargons 2021). This theory paired with the costs of childcare,

disincentivizes women to work and suggests a slow recovery in women's LFPR after the pandemic is over.

The perspectives of and incentives for employers are also important to consider when predicting the future LFPR of women. Although employers do not directly influence whether or not a woman will enter or exit the labor force, their unwillingness to hire women may indirectly cause the discouragement over job opportunities that in turn influence women to leave the labor force.

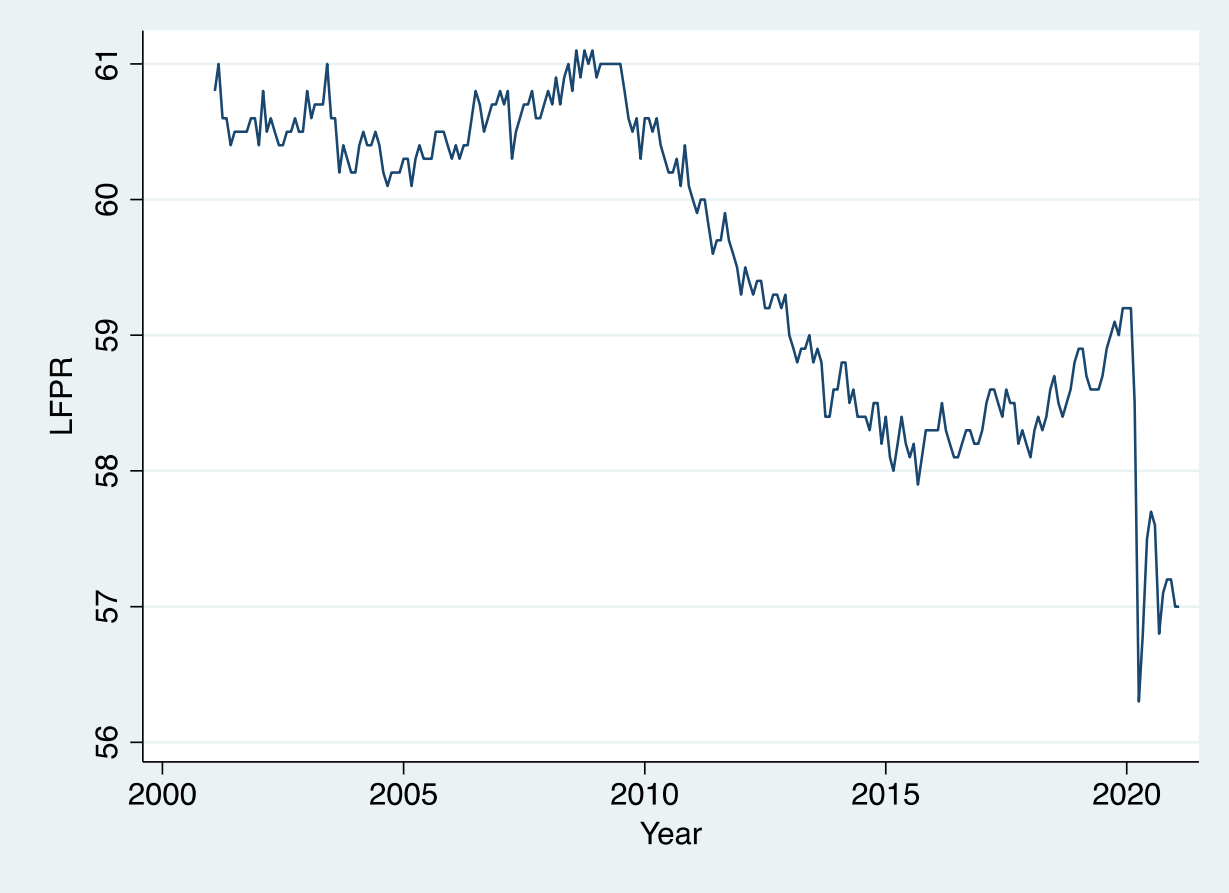
One significant factor for businesses when making employment decisions is labor cost. Human labor is expensive relative to machines (after the initial investment); thus, the level of automated work has been increasing over the past decade. Furthermore, the necessity for social distancing to reduce the spread of Covid-19 has led to faster development of this automation technology (Biondi 2021). The development of this technology, while not self-sufficient yet, effects jobs in retail and trade, accommodation and food services which all employ high levels of women (recall Figure 11) (Radu 2018). Given this information, it is reasonable to suggest that automation will negatively the effect the LFPR of women in the years after pandemic.

Employers may also be reluctant to hire women following the recession due to the revival of the stereotype that women are caretakers and men are breadwinners. During the early months of the pandemic, when public schools and day-cares closed, women left the labor force in large numbers in order to care for their children. This presumably had an effect on the attitudes of employers, which according to a study published in October 2020, resulted in the greater likelihood of mothers to be laid-off than fathers (Dias, Chance and Buchanan 2020).

IV.III Historic Implications

During the last two decades, the United States has experienced two major economic downturns, (prior to 2020) including one in 2001 and from 2008-2009. During the 2001 recession women's LFPR declined for 5 consecutive months from March until August (see Figure 17). Although this was a relatively short period of time, the general trend between 2001 and 2004, following the recession, was negative. The decline after the 2008-2009 recession or the Great Recession was much more significant, with a declining trend in women's LFPR from June 2009 until September 2015. These recent trends may provide insight on how women's LFPR will recover following 2020, specifically trends following the Great Recession since it happened more recently and the loses in employment are comparable. If women's LFPR post-pandemic follows a similar pattern to post-2009 LFPR, women will not recover losses in labor force participation for years. Subsequently the economy will have a lower production capability and real GDP is likely to be lower than potential. Additionally, woman may be unable to recover losses in real wages during this period.

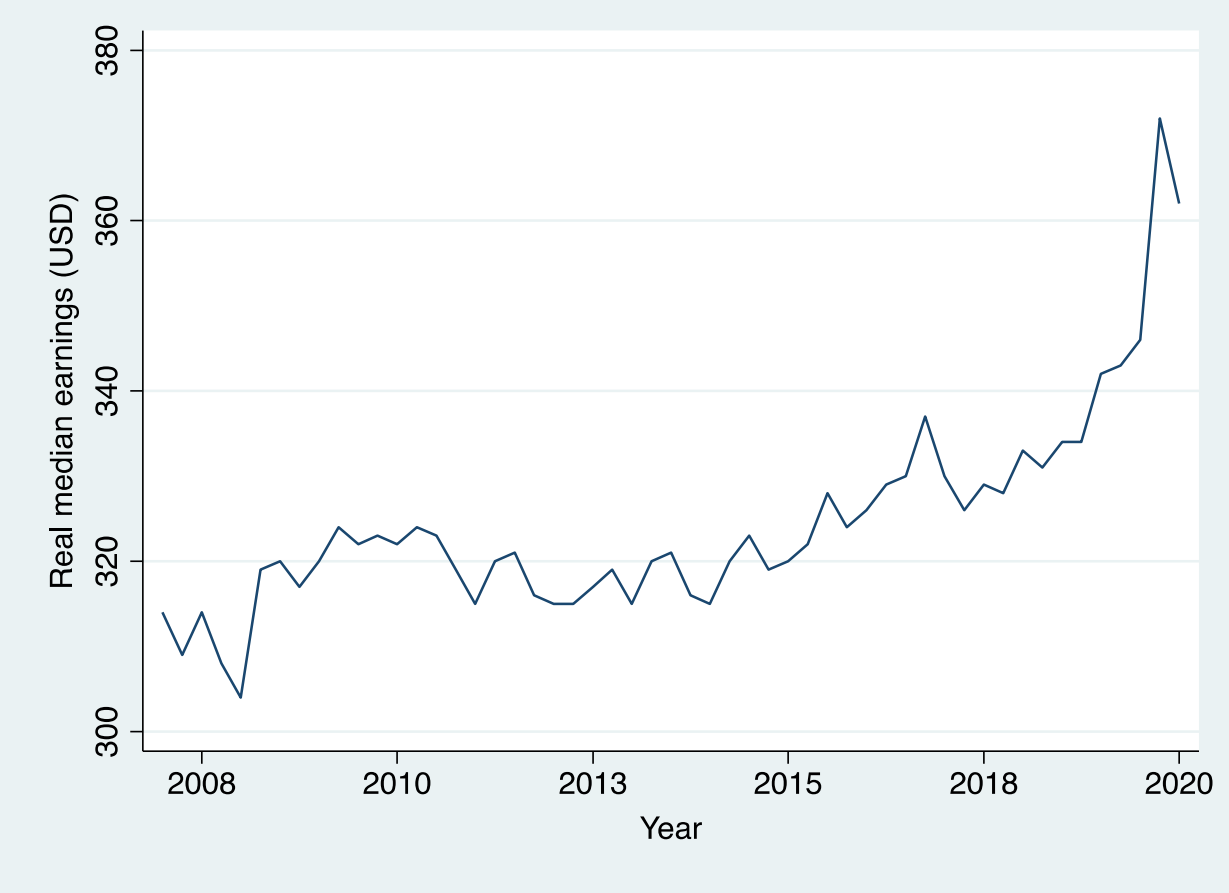
Figure 17. Labor Force Participation Rate – Women [2000-2020]



Source: Bureau of Labor Statistics, Labor Force Participation Rate - Women [LNS11300002] (Washington, DC: U.S. Department of Labor, 2020).

Following the 2008-2009 recession, women's real median earnings fluctuated around $320 with no significant increases or declines until 2015 (see Figure 18). From 2015-2020 the real median earnings of women have trended positively. The stagnation of real wages that followed 2009 is likely to occur again after the pandemic due to reduced work force progress of women during the recession.

Figure 18. Median usual weekly real earnings – Women 25 years and over



Source: Bureau of Labor Statistics, Median usual weekly real earnings: Wage and Salary workers: 25 years and over - Women [LEU0252883400Q] (Washington, DC: U.S. Department of Labor, 2021).

V. Conclusion

The pandemic in 2019-2021, induced by the spread of Covid-19 caused global economic downturns and had significant effects on the United States labor force. The recession and pandemic disproportionately affected women's labor causing higher unemployment and lower labor force participation for women relative to men in the U.S. throughout 2020. These effects were influenced by occupational choices, income decisions, parental status and social norms. Women's tendency to work in service-related occupations prompted massive losses in unemployment when social distancing recommendation and mandates were enforced by state and local governments.

Furthermore, social distancing caused the closure of public schools and other child-care services which is associated with high unemployment for women and compelled women to leave the labor force to care for their children. Women frequently took on the role as primary caregiver during the pandemic for two main reasons, the first being that women generally earn lower income then men, which disincentivized fathers to leave the labor force for childcare. Additionally, social norms and unequal childcare responsibilities influenced women to take care of their children during the pandemic by leaving the labor force or working and caregiving simultaneously from home.

The outcomes of the 2020 recession will likely be the stagnation or lowering of real earnings for women, as a result of human capital deterioration and reluctance to rejoin the labor force. Women will likely have a more difficult time re-entering the labor force and regaining employment, because so many have experienced long-term unemployment which results in the deterioration of skills and influences employer's hiring decisions. Additionally, the low wages for female concentrated occupations do little to incentivize the return to the labor force and may influence some women to remain out of the labor force permanently.

VI. Future research

The pandemic is ongoing, and although millions of Americans are returning to the labor force as vaccinations roll out and social distancing mandates ease, the United States' economy is not currently fully recovered. Thus, future research will need to be conducted in order to further understand how the pandemic and recession has affected the women's labor force. Additionally, this research has focused primarily on women's labor overall, however the effects of the recession were disproportionate among women of different races and socio-economic statuses. Future research should expand on the reasons for these unequal effects, so that we may learn how to

prevent them. Finally, as data becomes more available on real earnings for women, and specifically mothers, in the next few years, future researchers should further analyze how 2020 contributed to the gender wage gap and devastated decades of women's work force progress.

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