

Covid-19'S Effects on Inequality in The American Labor Market from Three Perspectives: Skill, Race, and Gender

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ABSTRACT

COVID-19 put the labor market in an unforeseen position because current technologies allow a portion of workers to work from home. In this paper, we will examine and speculate the changes of inequality in the labor market from the perspectives of skill, race, and gender before, during, and after the COVID-19 pandemic. In terms of skill, low-skilled and middle-skilled workers were affected more than high-skilled workers because they can be replaced by automation, and technologies allow more high-skilled workers to work from home. In terms of race, the pre-existing racial discrimination was deteriorated by COVID-19, which enlarged the gap of income, health care, living conditions, and wealth among the different racial groups. In terms of gender, the increased flexibility of working conditions caused by COVID-19 initially increased gender inequality, but in the long run, more equality may occur.

Keywords: COVID-19, labor market, inequality, social welfare

1. INTRODUCTION

As long as two different entities coexist, there will be inequality. It is a phenomenon that has always existed with our society long before COVID-19. However, the COVID-19 pandemic changed the composition of inequality in many ways. To quantify COVID-19's shock on the labor market, it has created the greatest unemployment rate (14.8%) since 1933 in the Great Depression [1]. In this paper, we will examine COVID's impact on inequality through the lens of the American labor market.

We set out to address the impact of COVID-19 on the labor market because of how it has affected our lives and those around us. It created unforeseen chaos, and cost governments much trouble. Due to this chaos, new ways of life and work were quickly developed and enforced. Many aspects of our lives are moved onto an online environment. We want to see how these shifts of lifestyle have affected different groups of people and what it will mean for our future.

We chose three perspectives to assess the changes in inequality stemmed from the COVID-19 pandemic: skill, race, and gender. Skill is an important perspective to consider because before the pandemic, there has been a pattern of job polarization which increased the inequality between the high-skilled, and middle/low-skilled workers. We want to see if the pandemic will accentuate or break this pattern. This way, people can more efficiently allocate themselves in skill levels that will continue to exist in the future. Race is an important lens to assess as there has always existed implicit inequalities of race that affected the daily lives of everyone. We want to identify whether this unique event will efface or reinforce these implicit discriminations. Gender is an important position to evaluate as before the pandemic there has already been great efforts to lessen gender inequality. We are interested to see if the pandemic will lessen or widen the inequality between the two sexes.

Since COVID-19 is a recent event, not a lot of studies have assessed its effects on the labor market and the inequality it creates. Our research combines past

research with phenomena that occurred during the pandemic to give a comprehensive overview of what happened and speculate for what will happen in the labor market.

Through our research and analysis, we have found that the inequality between high and middle/low-skilled workers continues to increase due to the spread pandemic. The wealth, health, and education gap between different racial groups increased due to the coronavirus. And the pandemic increased gender inequality initially, but may decrease gender inequality in the future.

2. COVID-19'S EFFECTS ON RACE INEQUALITY

Centuries before, African Americans came to America by the transatlantic slave trade [2]. Other racial groups immigrate into America for further development. Nowadays, the United States contains 7 major racial groups [3]. We believe in the declaration of independence that all men are created equal. But, American democracy sometimes excluded certain groups, historically. Two racial groups, African American and Hispanic American, suffered the most. For instance, large wealth transfers in American history deliberately excluded Black Americans, housing policy deliberately limited the scope and scale of Black homeownership, etc [4]. These implicit discriminations form a natural barrier that prevents entrepreneurs, medical experts, even children from further developing. With the outburst of Covid-19, multiple issues piled up and finally led to several serious consequences.

2.1 Strategy

To specify the extent of racial inequality during the pandemic period, we mainly collect the data of occupation, wealth, housing and vaccination among three major racial groups, including White American, Hispanic American, and African American, by population in the U.S.

2.2 Preference of occupation causes income inequality

African Americans and Hispanic Americans are more likely to be hospitality workers or work in some low-income industries. To be more specific, African Americans and Hispanic Americans are prone to be employed in the healthcare service industry and some production chains. As the data shows, more than a quarter of the meatpacking industry's frontline labor force is composed of Black Americans [5]. They are overrepresented in the food production industry. Moreover, Some 24 percent of both Black and Latinx people are in service industry jobs, compared to 16 percent of white people [6]. With lower wages, the income gap between African American, Hispanic American, and White American become larger. An American community survey in 2018 reported that the median household income of African Americans is 41,361, the median household income of Hispanic Americans is 51,450, and the median household income of White Americans is 70,642 [7]. Even though all racial group's incomes are growing, the income disparity between African Americans, Hispanic Americans, and white Americans also becomes larger. Till now, Racial inequities in wages already cost the US economy about \$2.3 trillion per year [8].

Despite paying more effort and receiving less salaries, jobs of African Americans and Hispanic Americans possess higher risks of being infected by Covid-19. Being a hospitality worker, people have to keep in contact with many patients and work in the hospital, which increases the risk of getting Covid-19 [9]. For people who work on the production line, since they also need to cooperate with other workers to complete their tasks, their risk of infection also rises.

Unfortunately, different from other occupations, hospitality workers and factory workers are not allowed to have work-from-home arrangements. Therefore, like nursing services, health support services, the production industry had to shut down during the pandemic period, which caused an enormous unemployment rate, especially for those African American and Hispanic American. Figure1 illustrates that the African American's unemployment rate was twice as the White American unemployment rate in 2020.

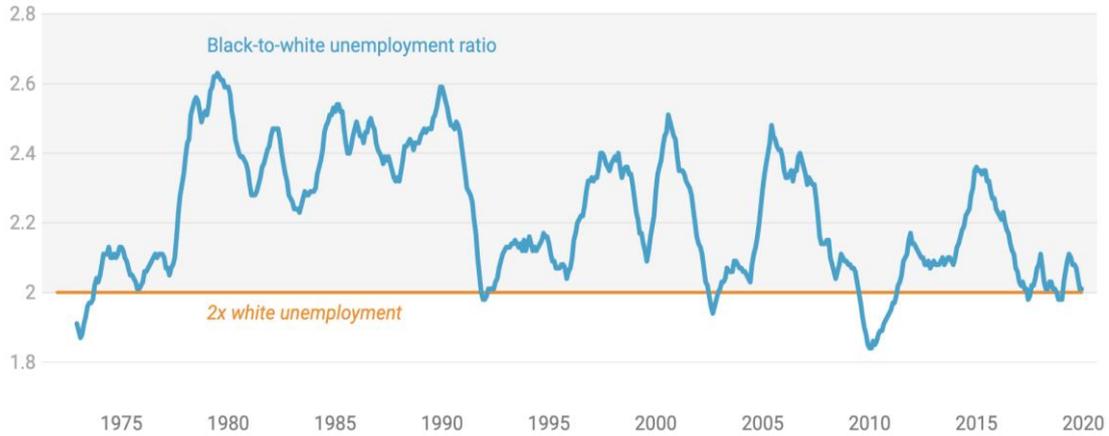


Figure 1: Black-to-white unemployment ratio [10]

Compared to those African Americans and Hispanic Americans in Figure 2, a higher percentage of White Americans work in high skill industries, such as education professionals, management. While a higher percentage of African American and Hispanic Americans work in low-skill jobs such as transportation, production, and services industries. In terms of high-skill occupations, most of them can be replaced by remote-working arrangements. For example, teachers,

managers, and engineers, etc can directly work and communicate on their electronic devices. However, those low-skill workers, such as construction workers, can come to their workshops and cooperate with others to complete their tasks. Therefore, in the post-pandemic period, high-skill workers are easy to recover, but low-skill workers have to endure unemployed conditions. (This statement can be proved by Figure 3)

Change in employment rates, January 15, 2020 to March 12, 2021

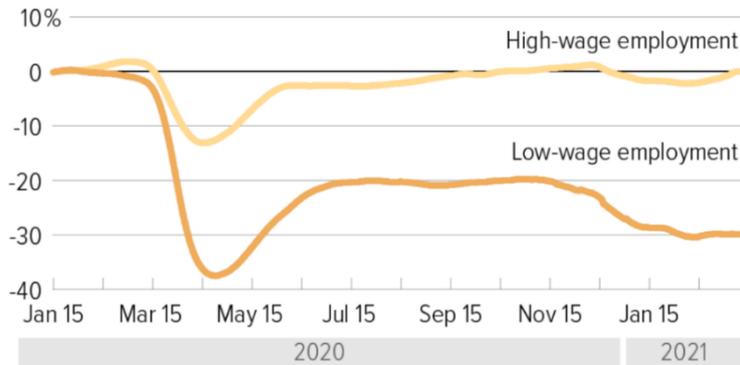


Figure 2: Employed people by occupation, race, and hispanic or Latino ethnicity, 2018 annual averages [11]

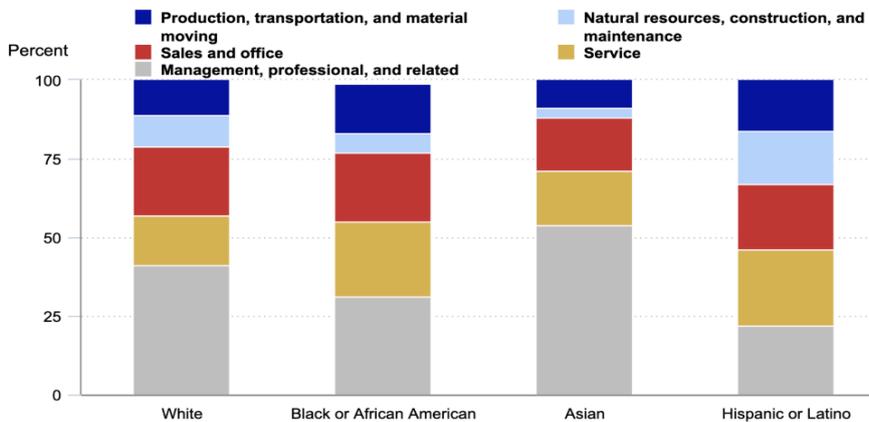


Figure 3: High wage workers have recovered most lost jobs, but low-wage job losses persist [12]

2.3 Living condition

According to the data provided by the US Census Bureau, house ownership among white Americans (not including Hispanic Americans) is 73.3% which is 31.2% higher than house ownership among African Americans in 2019 [13]. This large house ownership gap could be explained by the poor purchasing power of those African Americans and the high property taxes they have to pay. That may be due to the shadow of the discriminatory housing policies by the Fair Housing Act of 1968 [14]. Research illustrates that African Americans have to pay 10% more property taxes to buy a house than other racial groups, and the property taxes are rising in recent years [15]. Low income and high property taxes make hundreds of African Americans and Hispanic Americans homeless. According to the Annual Homeless Assessment Report to Congress, despite African Americans only making up 13% of the US population, they also make up 40% of the US homeless population [16]. Hence, many African Americans and Hispanic Americans have to live near poor neighborhoods where people do not have enough awareness about how to prevent the mass-spreading disease. Additionally, Black Americans on average share their living quarters with more people, which makes them more likely to catch and spread the Covid-19, which makes them more likely to catch and spread the Covid-19.

Many shopping malls which offer cheaper products, however, are located far from the poor neighborhood. Those African Americans supposed to take public transportation to buy cheaper goods, but all the public transportation shut down during the pandemic period. Heavily relying on public transportation, many African Americans and Hispanic Americans have to buy products at corner stores that offer higher prices products. With higher prices and low income during the pandemic period, many African American and Hispanic people suffered from food insufficiency [17].

2.4 Unequal distribution of vaccine

A study by Bogart in 2020 states that nearly half of African American participants were hesitant to inject the COVID-19 vaccination and one-third declared that they will never receive the COVID-19's vaccination [18]. As Patrick T. Ryan, Chairman and CEO, Press Ganey, explains that the overall medical mistrust may attribute to structural racism and historical shadow [20]. Due to the legacy of slavery, many African Americans hold a misconception that they are subjects to clinical experimentation to test the effect of the COVID-19 vaccine. Those biases towards government and medical institutions prevent the popularity of the vaccine among the African American population [20]. In North

Carolina, 109799 individuals have been vaccinated till January 8, 2021. Among all vaccinated populations, 80% of the population were White American, while only 20% of the population were African American and other racial groups [20].

2.5 Conclusion

Several pre-COVID-19 inequality— including unequal sharing of income and wealth, food insufficiency, low health support and prevention, and insecure living condition— leave African Americans and Hispanic Americans with fewer economic buffers to withstand economic depression and made them vulnerable when tackling COVID-19 economic shock [21].

3. COVID-19'S EFFECTS ON INEQUALITY BETWEEN DIFFERENT SKILLED WORKERS

In the labor market, workers can be divided into three categories: low-skilled, middle-skilled, and high-skilled. According to Investopedia, "low-skilled workers may include entry-level positions within the food service and retail environment as well as home health care workers" [22]; Middle-skilled workers should obtain a high school diploma and are most likely to work in manufacturing; and High-skilled workers should at least hold a bachelor degree or have possessed some achievements in their given field [23]. In this section, we will assess COVID-19's impact on the inequality between workers of different skill levels in the United States by looking at various articles and marco data. We believe that the pandemic has increased the inequality between the high-skilled workers and the middle/low-skilled workers.

3.1.1 Job Polarization Leaves Middle-skilled Workers Out in the Cold by Maria E. Canon and Elise A. Marifian.

The authors Maria E. Canon and Elise A. Marifian first introduce Author's explanation to the decline in demand for middle-skilled workers. Autor finds that "the key contributor to the polarization trends was the automation of routine work." Autor defines routine tasks as "procedural, rule-based activities." Routine embodies the work of middle-skilled workers which can be divided into two types: routine manual tasks, such as production, craft, and repair, or operators, and routine cognitive tasks, such as sales, office, and administrative. These works "have the common trait of being increasingly performed by machines or computers." Accordingly, the automation process increases the demand for nonroutine workers, which can also be divided into categories which are nonroutine cognitive activities and nonroutine manual activities. Nonroutine

cognitive activities “require workers with analytical and problem-solving skills, intuition and persuasion, and, in many cases, higher levels of education.” Nonroutine manual activities “require little formal education and employ workers with skills like ‘situational adaptability, visual and language recognition, and in-person interactions’, as well as physical ability and, in many cases, oral communication fluency.” Therefore, “these tasks are often difficult to automate, and they are also difficult to outsource because they usually must be performed in person.” As a result, “middle workers are facing fewer middle-skilled and middle-wage jobs” [24].

3.1.2 The role of biomedical engineering during the COVID-19 pandemic

In this article, the author, Amy Leary, elaborated the importance of biomedical engineering during the pandemic. As she pointed out, the term “biomedical engineering” can be interpreted as using engineering materials in medicine. Since COVID-19 is a respiratory syndrome and worldwide disease, the occupation of biomedical engineering isn’t easy to tackle. Biomedical engineers were responsible for manufacturing breathing devices and ventilators using unique materials, transporting them to hospitals on time, and developing products that can help beat diseases [24].

Since Biomedical Engineering is an industry that requires expertise, people who are engaged in this profession need to have professional knowledge, so they are mostly high-skilled workers. As the virus spreads, demand for biomedical engineering increases, so wages of these workers are most likely to increase. Compared

with low/middle-skilled workers who are facing the risk of losing jobs, high-skilled workers are more advantageous such that the gap between high-skilled and low/middle-skilled workers enlarges.

3.1.3 Who are the workers already impacted by the COVID-19 recession?

Authors Alan Berude and Nicole Mateman, researched the impacts the pandemic put on the labor market in 2020. According to the authors, there were many industries classified as immediate-risk industries influenced by social distancing or travel restrictions, such as food services, transportation, and entertainment, but were inseparable from people’s daily lives. The definition for a so-called vulnerable worker is someone who is primarily a part-timer, young without many experiences, and holding no more than a high school diploma, which is similar to the definition of a low/middle-skilled worker. However, in referring to the data in 2018, 37.2million vulnerable workers work in immediate-risk industries. Due to the pandemic, they may be temporarily or permanently unemployed. With their already relatively low income, their burden largely increased. For example, the unaffordable rent may lead to homelessness, which becomes a problem. Even though the government implemented policies to help workers, many vulnerable workers are not included or eligible. Thus, the fate of vulnerable workers depends on the length of the pandemic, but leaders must ensure they can have enough to feed themselves [25].

3.1.4 Pandemic boosts automation and robotics

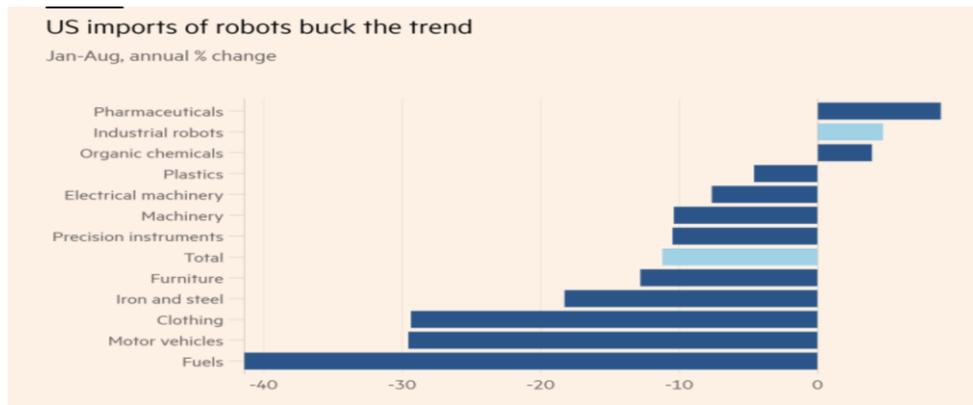


Figure 4: US imports of robots buck the trend [26]

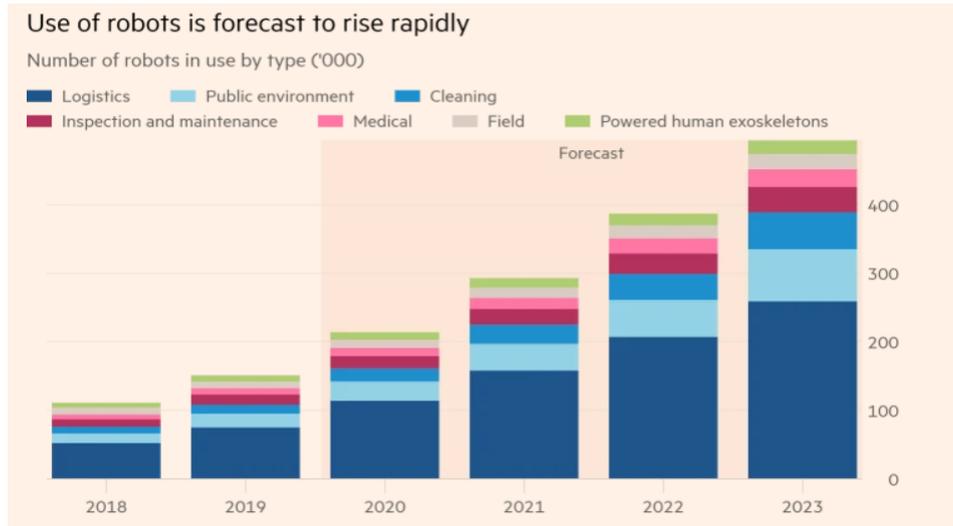


Figure 5: Use of robots is forecasted to rise rapidly [26]

According to the article, robot production and imports in most countries increased. For example, for the company Blue Ocean in Denmark, who sells disinfectant robots to help hospitals and schools, its sales rose 1000% since the beginning of the pandemic. In the United States, most imports decreased compared with 2019, but according to *Figure 4*, only Pharmaceuticals, Robots, and Organic Chemicals increased. In China, the production of robots grows 14% [26]. As more robots are invented and imported, more works of those of low/middle-skilled workers could be replaced.

We agree with the prediction that the use of robots will increase year by year [26]. However, the prediction in *Figure 5* may not be accurate as it only provides an overall trend measured and predicted yearly but not specific data about the change in the number of robots being used since the pandemic started. In our opinions, the implementation of robots would initially decrease as Covid-19 started because people needed some time to think of countermeasures to adapt to the pandemic. Also, not enough people could physically be in the industries to control them.

3.2 Strategy

We will collect data on the employment shares of workers with different skills in different years from

OECD. OECD (Economic Co-operation and Development) is an intergovernmental economic organization founded in 1961 to stimulate economic progress and world trade. We use data from OECD because it is one of the world's largest and most reliable sources of comparable statistical, economic and social data. By looking at the change in employment shares, we can assess the inequality between the workers of different skill levels before the pandemic.

We will find the unemployment rates in different industries before and after the recession caused by pandemic from The U.S. Bureau of Labor Statistics, “which is the principal fact-finding agency for the U.S. government in the broad field of labor economics and statistics and serves as a principal agency of the U.S. Federal Statistical system” [26]. We use data from the U.S. Bureau of Labor Statistics because “the statistical reliability of the BLS wage data is adequate for most metropolitan and non-metropolitan areas (at least 90 percent of areas)” [28]. According to the data of workers in certain industries are correlated with work of different skill levels. By looking at the change in unemployment rate in industries that correlate with certain skills, we can then derive which skill level is affected most by the pandemic. The data of workers composition in different industries is shown in the following figure:

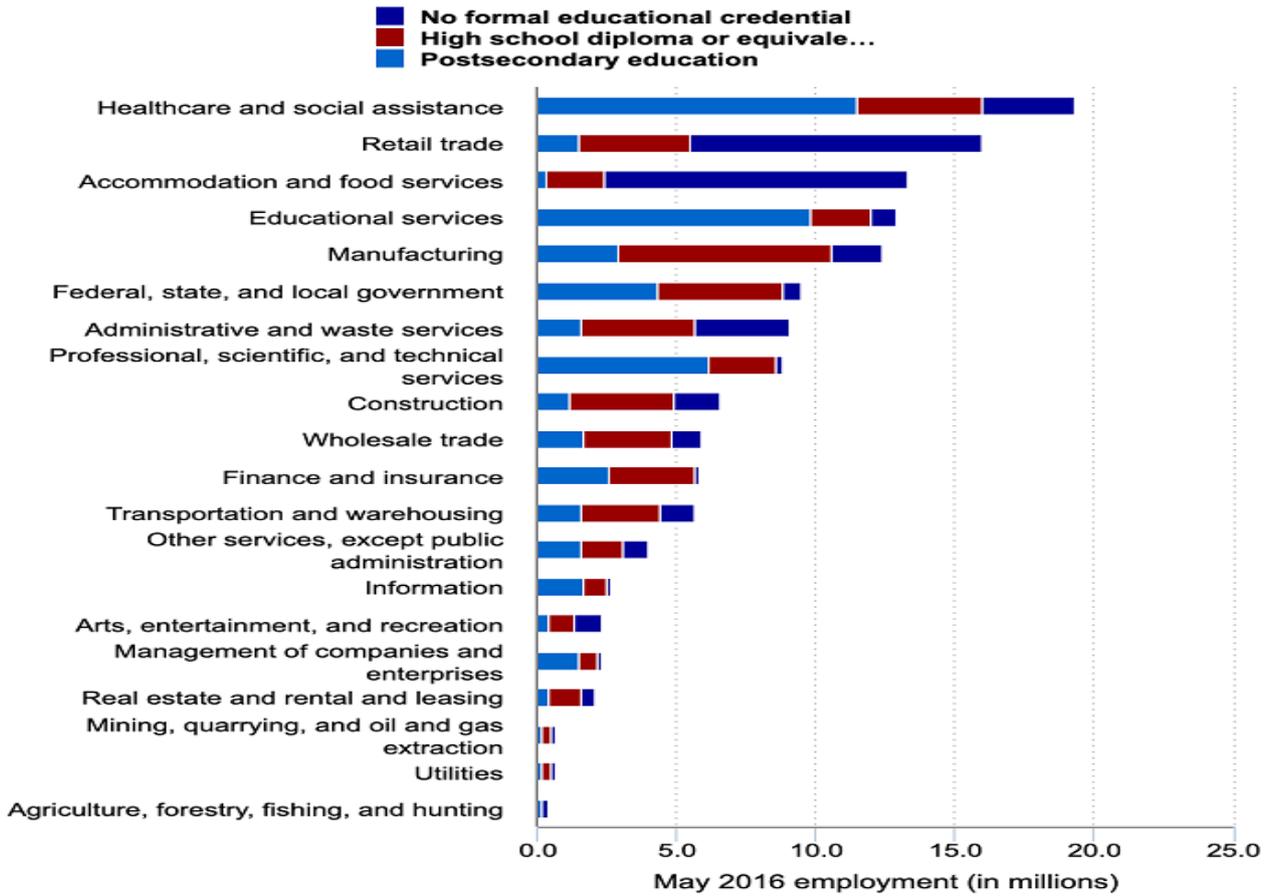


Figure 6: Healthcare and social assistance and educational services accounted for 42 percent of all jobs in occupation that typically

require postsecondary education for entry. [26]

According to Figure 6, the distribution of education in different industries in U.S., workers with a high school diploma or equivalent and no formal educational credential are mainly distributed in 1) manufacturing, 2) construction, 3) transportation and warehousing, 4) retail trade. And workers with postsecondary education are mainly distributed in 1) healthcare and social assistance, 2) educational services, 3) professional, scientific, and technical services, 4) finance and insurance. As such, looking at employment rates of industries such as manufacturing, construction, transportation and warehousing reflects the employment statuses of middle skilled workers; looking at employment rates of industries such as healthcare, social assistance, and educational services reflects the employment statuses of high-skilled workers.

3.3 Result

3.3.1 Decline in employment shares of middle-skilled jobs and job polarization

We collected macro-data from the U.S. to prove that the employment shares of middle-skilled jobs decreased.

Change in demand for workers with different education levels in different industries in the U.S. from 2007 to 2010, in industries such as construction and manufacturing, demand for workers with high-school diplomas decreased significantly from 2007 to 2010[29]. As mentioned before, middle-skilled workers are the workers without a tertiary degree and most likely to work in manufacturing. Thus, we can say that in industries such as construction and manufacturing, demand for middle-skilled workers decreased dramatically from 2007 to 2008.

Another data from OECD iLibrary shows that the employment shares of middle-skilled workers around the world decreased in 2016-2018 compared to 1994-1996, which is shown by Figure 7 below. A decrease in employment shares of middle-skilled workers can be interpreted as decline in demand for middle-skilled workers.

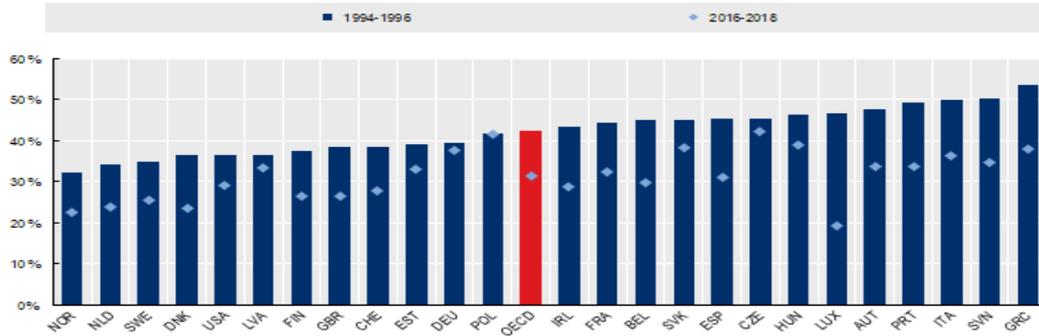


Figure 7: Employment shares of middle-skill occupations decline sharply [23]

To explain why demand for middle-skilled workers declined, the economist David Autor suggests that “the key contributor to the polarization trend was the automation of routine work.” Since middle-skilled works are just “procedural, rule-based activities”, “they have the common trait of being increasingly performed by machines or computers.” Autor also suggests that “automation process has raised the relative demand for nonroutine labor” [24]. Nonroutine labor are high-skilled workers and low-skilled workers. With the decline in middle-skilled occupation and increase in high and low-skilled occupation, job polarization worsens.

What’s more, according to OECD, “the crisis accelerated the declining share of middle-skill employment by actually destroying jobs, rather than employment simply growing more slowly than other occupation groups as happened in the 15 years preceding the crisis” [23] (OECD). And “the working age population is more highly educated today than twenty years prior”, “workers with a tertiary degree are less likely to work in middle-skill jobs compared to workers with less education” [23].

3.3.2 Impact of Pandemic on Different Industries

Table 1: Total unemployment and unemployment rate in different sectors [28]

Industry and class of worker	Total unemployed		Unemployment rates					
	2019	2020	Total		Men		Women	
			2019	2020	2019	2020	2019	2020
Manufacturing	468	1026	3.0	6.8	2.7	6.4	3.5	7.5
Construction	435	838	4.5	8.7	4.5	8.8	3.8	7.5
Transportation and warehousing	237	662	3.8	10.4	3.6	9.7	4.2	12.6
Retail trade	706	1456	4.4	8.9	4.1	8.0	4.7	9.9

(*numbers in thousand)

As Table 1 displays, after the pandemic, the total unemployed workers in manufacturing, construction, transportation and warehousing, retail trade increased

558,000; 403,000; 425,000 and 750,000 respectively. And the unemployment rate of these industries increases 3.8%, 4.2%, 6.6% and 4.5% [28].

Table 2: Total unemployment and unemployment rate in different sectors [28]

Industry and class of worker	Total unemployed		Unemployment rates					
	2019	2020	Total		Men		Women	
			2019	2020	2019	2020	2019	2020
Health care and social assistance	441	988	2.2	5.1	2.1	3.9	2.3	5.5
Educational services	180	405	3.5	8.1	3.7	8.1	3.4	8.0
Professional and technical services	273	536	2.3	4.5	2.1	4.1	2.7	5.2
Finance and insurance	145	218	2.0	2.9	2.1	2.8	1.9	3.0

(*numbers in thousands)

However, in *table 2*, we can see that in industries such as health care and social assistance, educational services, professional and technical services and finance and insurance, the total unemployed workers in these industries increase 547,000; 297,000; 263,000 and 73,000 respectively.

By referring to the increase in total unemployment and the increase in total unemployment, workers in the industries such as health care and social assistance, educational services, professional and technical services,

finance and insurance industries have been affected less by the pandemic compares to the workers in manufacturing, construction, transportation and warehousing, retail trade.

As shown in *figure 2*, high-wage employment has recovered most of the lost jobs as the U.S. economy started to recover, but low-wage employment losses persist. So, it is hard for middle and low-skilled workers to find a job again after the pandemic

% of employed adults saying ...

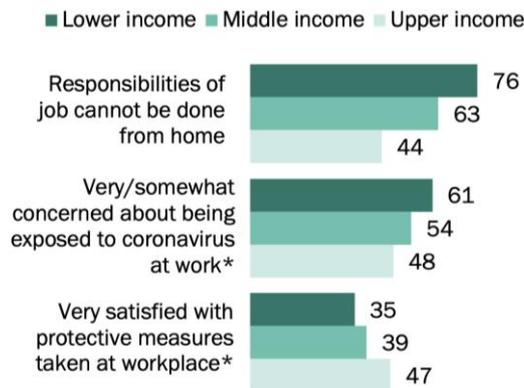


Figure 8: Lower-income workers less likely to have the option of teleworking, more likely to be concerned about exposure to coronavirus [29]

Wages of workers can be transferred into their skills. Thus, workers with low and middle income can be viewed as low/middle-skilled workers, while workers with upper income are high-skilled laborers. According to *Figure 8*, most high-skilled laborers' jobs could be done online from home. At the same time, their working environments and their health are more secure. However, low/middle-skilled workers' jobs didn't receive much protection and their work needs them to physically be there. Due to the pandemic, many industries shut down.

In turn, those who can work at home and receive wages became more advantageous compared to those who can't go to work and also can't work at home. This enlarges the gap between the high-skilled workers and the low/middle-skilled workers since the high-skilled workers can work at home while receiving payment, but low/middle-skilled workers have no work or salary [29].

3.4 Conclusion

Based on the data from OECD and U.S. Bureau of Labor Statistics, before the pandemic, the demand for middle-skilled workers has started to decline. The possible reasons are: 1) Middle-skilled jobs are easily replaced by the automation processes, 2) Average education level increases and people who receive higher education become less willing to enter the middle-skilled labor market.

According to the data of employment distribution and unemployment rate from U.S. Bureau of Labor Statistics, the middle-skilled and low-skilled workers are affected by pandemic more compares to high-skilled workers since the total unemployed number and unemployment rate of the industries where middle/low-skilled workers are mostly widely distributed are much higher than the industries where high-skilled workers are mostly distributed. The possible reasons are: 1) High-skilled workers can do online jobs, 2) Company fires, middle-skilled workers can replace them by automation in order to lower the costs.

After the pandemic, based on the data from cbpp.org, it is easy for high-wage employment but hard for low-wage employment to find a job again, which illustrates that middle/low-skilled workers are affected by the pandemic more than high-skilled workers.

4. COVID-19'S EFFECT ON GENDER INEQUALITY

In the past century, gender inequality has gained a lot of attention in the U.S. Women and men are both advocating for more Women's rights, starting waves of feminism. In this section, with the help of previous scholars, we will address how the pandemic has already affected gender inequality and provide our informed speculation about the future of gender inequality.

4.1 Literature Review: "The Impact of COVID-19 on Gender Equality"

"The Impact of COVID-19 on Gender Equality" by Titan Alon, Matthias Doepke, Jane Olmstead-Rumsey, and Michèle Tertilt will be the main text of reference for this section of our research paper. The text opens by acknowledging that the COVID-19 pandemic is different from previous recessions as, unlike previous recessions, it has affected the employment of women more than men [34]. To give a qualitative view, women's unemployment rate increased by 12.7% [31], while men's unemployment rate increased by 10.1% [32].

The article provides two reasons for why the COVID-19 pandemic has affected women more than men: women are employed in less telecommutable and critical occupations, and there is an increase in childcare needs [33]. To measure the aspect of telecommuting, the article considered jobs where over 50% of their employees can telecommute as telecommutable. With this standard, 28% of male workers and 22% of female workers possess telecommutable jobs. The higher telecommutability means men are more likely to retain their jobs during the pandemic. A higher percentage of male are also employed in critical jobs (jobs that are critical during the pandemic and are less affected by the stay-home policy). 24% of employed men and only 17% of employed women are employed in critical occupations, making men's employment rate more stable during the pandemic [33].

There are limitations to this method of assessing telecommutability. When the authors assessed telecommutability with a different standard where they considered jobs where over 25% of their employees can telecommute as telecommutable, they found that 49% of employed males and 63% employed females have telecommuting jobs [33]. However, the authors don't explain the implications of this data for female employment.

Looking at data from the US Census Bureau, the authors argue that the burden of the increased childcare fell on women, which increased their unemployment rate.

Table 3: Household by Type in the United States [33]

Total # of Households	128579	100%
Married Couples	61,959	48%
Family, Male House	6,480	5%
Family, Female Householders	15,043	12%
Non-family, Male Householders	21,582	17%
Non-family, Female Householders	23,515	18%

Note: Thousands in 2019.

Table 4: Living Arrangements of Children in the United States [33]

Total Children under 18	73,525	100%
Two parents	51,561	70%
Mother only	15,764	21%
Father only	3,234	4%
Other relatives	2,319	3%
Non-relatives	647	1%

Note: Thousands in 2019.

As shown in *table 4*, 21% of children live with a single mother, while only 4% live with a single father. These single mothers are affected more by the pandemic than the previous recession because the pandemic shut down other childcare opportunities such as grandparents and daycare agencies. These increased childcare needs may result in single mothers quitting their jobs or taking on other half-time jobs. Additionally, even with married couples, women take on more of the childcare responsibility. In terms of married couples, 44% are dual income earners. As shown in *table 3*, 25% have a working husband and a stay-home wife, and only 5% have a working wife and a stay-home husband. Among full-time employed men and women, men spend 7.2 hours on child care per week while women spend 10.3 hours. These distributions of childcare will persist during the pandemic due to the initial factors that led to the distribution and increased women unemployment rate [33].

To speculate the future of gender inequality in the labor market, the authors think "more flexible work arrangements" and "changes in social norms and role models" caused by the COVID-19 pandemic will decrease gender inequality [33]. Since most companies have already invested in technologies that increase work flexibility, the authors predict that these more flexible conditions will remain. Because mothers already take on most of the burden for childcare, an increase in work flexibility will cause fathers to contribute relatively more [34].

The authors predict that temporary changes in the labor market will have long-run consequences on society. With the fathers of children being home, they are more likely to provide childcare. The temporary increase in childcare will have a longer-lasting effect on men as they get more attached to the kids. This attachment will likely result in more childcare hours being distributed to men. The distribution of childcare will lean more towards men when females are in non-telecommutable industries and males in telecommutable sectors (9% of households are in this position) [33].

4.2 Strategy and Our Findings

We want to expand on and speculate the possibility of a decrease in the inequality between males and females by looking at past and new data. In the article, the authors make quite a few speculative claims which are unsupported by data. Filling in these gaps of evidence with past and current data will help determine if the speculative claims in "The Impact of COVID-19 on Gender Equality" are reasonable.

The two claims that we will attempt to find evidence for are: "it is likely that a sizeable fraction of this additional flexibility will stay in place after the actual crisis. Once businesses have invested in remote-working technology and the learning-by-doing that is involved in the transition has taken place, going back all the way to the status quo is not attractive" and "the mere fact of being at home rather than at a workplace is likely to increase men's child care responsibilities" [33].

To assess the possibility that more flexible remote-working conditions will remain, we can look at current U.S. companies' policies for future remote work, and companies' predictions of the amount of workers returning in the future. If companies are offering permanent remote working conditions and they predict only a certain portion of workers to return offices after the pandemic, we can say with some level of confidence that more flexible remote-working policies will remain.

To assess the possibility that men will spend more time on childcare with more time spent in the house, we can look at the time men spent on child care pre and post the establishment of the Fair Labor Standard Act. The Fair Labor Standard Act stated that "covered nonexempt employees must receive overtime pay for hours worked over 40 per workweek" [33]. This act made a massive impact on laborers' life in the 20th century (the laborers mainly were men) as before the establishment of this act, men used to have 100-hour workweeks [34]. The decreased working hours meant that men spent more time at home. Looking at data of the hours men spent on childcare before and after the establishment of FLSA will help us determine whether

or not men will spend more time on childcare when they spend more time at home.

4.2.1 Men’s Potential Increase in Childcare

To find data on the establishment of the FLSA on men's time on childcare, we look at the research paper "Time Spent in Home Production in the Twentieth-Century United States: New Estimates from Old Data." Before we look at the data, we need to define one crucial concept: home productions. Home productions

are activities that make a household better, including childcare.

Table 5 displays the average time men spent on house production in the 20th century. The amount of time employed men spent on home production each week increased exponentially after 1930 (the year that the FLSA was established). An increase in time spent in home production directly correlates with the time spent on childcare as childcare is a home production activity. This proves the claim that with more time spent at home, men are more likely to provide additional childcare.

Table 5: Estimates of weekly hours spent in home production men ages 18-64. [35]

Year	Employed Men	Nonemployed Men	All Prime-Age Men
1900	3.0	11.9	3.9
1910	3.0	11.9	4.0
1920	3.0	11.9	3.9
1930	5.0	11.9	6.0
1940	6.5	13.8	7.7
1950	8.1	16.0	9.0
1960	9.6	18.1	10.4
1965	10.4	19.2	11.2
1975	11.1	17.6	12.1
1985	13.0	18.2	13.9
2003	16.0	22.1	17.2
2004	15.9	21.5	17.0
2005	15.8	21.2	16.8

Note: The numbers in italics are based at least in part of extrapolations.

However, there are limitations to this data as a significant difference is not accounted for in the comparison between the establishment of the FLSA and the effect of the pandemic. Although in both situations, men spent more time at home, the FLSA increased the free time of men while the pandemic potentially increased the working time of men. It is difficult to address this limitation as working from home is a possibility developed recently, so there is limited data on situations similar to the pandemic where men spent more time working at home.

4.3 Conclusion

After looking at additional data, we have concluded that the claims made in "The Impact of COVID-19 on Gender Equality" are reasonable. By looking at the current increasingly flexible company work policies, we can say that the remote-working technologies and flexibility in the workplace are likely to remain. By looking at the increase in the amount men spend in home production after the establishment of the FLSA, we can say that men are likely to spend more time on childcare as they stay more at home. These two supporting findings point towards an optimistic future where gender norms will change, and gender inequality in the labor market will decrease.

5. CONCLUSION

5.1 What We Have Learned

Through looking at new and old data and opinions, we conclude that inequality in the labor market has increased between the high and middle/low-skilled workers, different races, and the two genders due to the COVID-19 pandemic. However, there are optimistic speculations about a decrease of inequality between these groups in the future as working conditions and social norms differ from pre-COVID-19.

5.2 Limitations

There are many limitations to our research. Firstly, we don't have enough time to collect our own data. This forces us to use the data of previous researchers which limits us from analyzing data from different dimensions. Especially with this contemporary topic of COVID-19 where there hasn't been time for a lot of research, having the ability and time to do our own research would greatly increase the flexibility of our research paper. Secondly, there are a lot of uncertainties in the future caused by the pandemic. With new variant strands of the coronavirus developing, we don't know when life will return to normal and what unpredictable events might occur in the future. As such, please take our speculations with a grain of salt.

5.3 Future Research

Although an increase in remote working opportunities may aid the lessening of inequality for certain groups, it may not be completely beneficial to society and might require government interventions in the future. Especially in terms of social capital, the connections people make in the office. Remote working greatly lessens these bonding opportunities. According to a survey conducted by Stanford University, in 2017, 11% of people find their significant other in workplaces [36]. There might potentially be issues for single people when they work from home as opportunities to meet a future partner decrease by a significant margin. As such, a further research topic that we would like to explore is how moving out of in-person workspaces affects workers' social lives, specifically marriage.

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