The Impact of COVID-19 on Employment Ratio: Evidence from U.S and China

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Abstract. With the increase in number of infected people worldwide, the impact of COVID-19 on the world has become increasingly severe. In this article, the data collected during the 2020s is used in order to investigate the impact of COVID-19 on the employment rate and analyze its reason using two distinct samples. To be specific, data from China and the US is selected to act as evidence to support the claim in the study. In addition, this research carried out some comparisons between the two cases. According to the analysis, the results have shown that both China has lost about 80 million jobs during the start of the pandemic and the US having about 14% job losses during the first season of 2022. If one looks at the huge population base, which both have an extremely high negative employment rate and most of the jobs are travel or service or capital construction related. However, as time gradually goes by China has recovered faster than the US, gaining most of the job loss back. Even though China's economy is mainly based on the worker level, but since its quick and positive attitude in stopping the pandemic from spreading further its economics recovered soon. Nevertheless, since the US's main economic body isn't produced by workers, the attempt of raising the employment rate back to before seems not that much of a priority. These results shed light on guiding further exploration of policy implantation during pandemic.

Keywords: COVID-19; Employment; China; US.

1. Introduction

The spread and outbreak of COVID-19 has made people around the world seriously affected by it [1-5]. It is estimated that until March 20th, 2020 around 240 thousand has infected COVID-19 and with a terrifying 20 thousand people has died from it and it is only 4 months after it is being discovered [6].

With over 2 million infections and over 100 thousand deaths around the globe in less than a year, the COVID-19 crisis has unfolded in such a quick period of time with tremendous speed. Experts generally agree that this is the most far-reaching global health crisis since the Spanish flu happened in 1918 which is centuries ahead [7].

The pandemic first burst out in the Chinese city of Wuhan. The Chinese government endured huge losses during the lockdown of Wuhan city but tried their best to stop the virus from spreading. However, this loss is especially significant in the economic world. The COVID-19 epidemic has had a severe impact on employment and the labor market. The epidemic has prevented the normal flow of people, the normal operation of enterprises, the normal operation of organizations, and the semi-standstill of the economy.

All enterprises are facing severe challenges, especially in the hotel industries, the number of jobs has been greatly reduced for epidemic prevention and control, which restricts labor mobility, and many workers cannot return to work, which adversely affects residents' income. The economic outlook is fraught with uncertainty, with many companies delaying or reducing investment, reducing demand for labor.

It is an indisputable fact that the number of jobs and the quality of employment caused by the epidemic are declining. Employment is the greatest democracy. It is particularly urgent and important to analyze the impact of the epidemic on employment and put forward targeted countermeasures.

On this basis, this paper will investigate the impact of COVID-19 on employment ratio. The rest part of the paper is organized as follows. The Sec. 2 will briefly discuss the basic background of COVID-19. Subsequently, the Sec. 3 and 4 will demonstrate the effect on China and the U.S.,

respectively. Afterwards, comparisons will be carried out among the two countries in Sec. 5. Eventually, a brief summary will be presented in Sec. 6.

2. The Background Information

Coronaviruses, the ancestor of COVID-19 are a class of pathogenic microorganisms that severely endanger the health of humans, livestock and poultry. There are more than a dozen coronaviruses discovered so far [8]. Coronaviruses exist widely in nature, and their natural hosts include humans, cattle, pigs, poultry, dogs, cats, mice, bats, etc.

The characteristics of this genus virus and the structural characteristics of its own genome make it extremely easy to evolve in the process. According to research with reference to the key epidemiological parameters of SARS, the basic reproduction number of COVID-19 infection pneumonia was estimated. The basic reproduction number is an important concept which represents the number of people infected by a patient during the average disease period when everyone is susceptible in the early stage of the disease.

Usually, R01 can be used as a threshold to determine whether the disease will die out, that is: when R01, the disease will always exist and form an endemic disease. Based on the number of infections predicted by foreign counterparts, the basic reproduction number is between 3.2 and 3.9 [9], which means the early pathogenic transmission ability is even slightly higher than that of SARS.

As a matter of fact, this is just during the early stage of COVID-19.One can know that COVID-19 as a descendent of Coronaviruses class, inherits the quick evolving abilities from its ancestor, and quickly became the most easily spread virus ever recorded in human history, as the way of spreading the virus for it is through air, which is so devastating to the modern society as nowadays with more than 7 billion people living on this planet people usually like to gather around, which creates a perfect way of spreading for the virus.

Employment in modern societies means the act of being hired by a company or employer, and this differs from different countries. For instance, in Chinese societies most of the employees worked in constructions or production industries, as it is still a developing country. For US however, most of their economy comes from high-tech products instead of constructions and product producing, so the workers in the US live in a different employment structure. In this case, it may cause different results facing the crisis of COVID-19.

3. Impact of COVID-19 on Employment Rate in China

As of March 21, China has reported a total of 81,054 confirmed cases of COVID-19 and a total of 3,261 deaths [10]. Comparing the 2003 SARS epidemic with almost the same type of situation, the total number of reported cases nationwide was 5,327 and 309 deaths, it can be seen that the scale and severity of the COVID-19 has far exceeded the SARS epidemic since the start of the pandemic. Then China quickly came up with a way to fight against the pandemic, which is to limit of travel of the citizens, to lock them inside home.

This ongoing lockdown which regards cities as unities is a commonplace during the first period of 2022, including some of the renowned cities in the world and Wuhan where the virus originates from, students having online classes and parents, who has the ability to work online tries to work online. This kind of method of preventing the virus from spreading is extremely efficient though, as people were locked in the house and are unable to interact with each other.

With just about two months China has escaped from the devastation consequences, the number of new infections in mid-March has been zero for several consecutive days, indicating that the epidemic in China has been effectively controlled. However, this also brings up with another consequence, which is the complete give up on the economy. During the two months lockdown, the economic activity throughout the city of Wuhan has almost close to a full stop, which caused devastating effects towards Chinese economy and especially the employment rate.

It is estimated that there's around 83.95 million job losses were caused by COVID-19 during the first season of 2022, which is a stunning number just by seeing. The employment rate can be calculated by dividing the number of job losses with the number of employees earlier in that year which is 774.71 million, and the results is an unemployment rate of 10.83%.

However, job losses can be exactly counted as unemployment. First of all, if the worker cannot go to work during the pandemic period due to the pandemic control reasons, but the working relationship with the company is retained as usual, this will be counted as job loss, rather than unemployment, which is very common thing during the pandemic period. Secondly, even if an employee resigns by themselves or passively leaves his job unit due to the pandemic, but does not go to find a job and withdraw from the labor market within a certain period of time, it will still be counted as a job loss rather than unemployment as the situation might become better as the pandemic gets a valid control, and this is also very common during the pandemic period.

Therefore, the number of job losses will be much higher than the number of jobs observed. At the same time, under the role of the lockdown policy, the pandemic control quickly improved and the order of production is quickly recovering. On March 17, the resumption rate of the industrial enterprises in most of the cities and states in the country has exceeded 90%, of where Jiangsu, Shanghai, Shandong, and Chongqing are equal to close to 100%. These have all shown signs of employment rate back into its original rate in China.

4. Impact of COVID-19 on Employment Rate in the U. S.

The employment rate in the US is another story. As the largest economy in the world, the role of US during the pandemic period is also the country that has the largest number of infections, with over 94 million people being infected and more than 1 million of deaths in the US in current days as depicted in Fig. 1 [11]. However, it is unknown whether the. Data lead to a conclusion of a ruined economy and huge unemployment rage back in the US.

Figure 1. Daily Pandemic Update for the United States.

In order to explain that we need to go back to the time where the pandemic first appear. China is the first country to come up with a resolution to restrict the spread the COVID-19, via a plan to lockdown cities and cut the route for spreading the COVID-19, and time proves that it is a really useful way in restricting it, so every other country starting to use the same way to stop the spread of Covid-19, including the US. At first glance this may be a good resolution to this crisis, but it also raises up two potential problems for US.

The first one is a tremendous rise in the unemployment rate, as economic activities are entirely forbidden during the lockdown, which means a large amount of people is going to lose their jobs during the lockdown. It can be indeed what happened when they choose to adopt the lockdown policy, where the national unemployment rate of 14.70% was counted on April 2020 (seen from Fig. 2) [12].

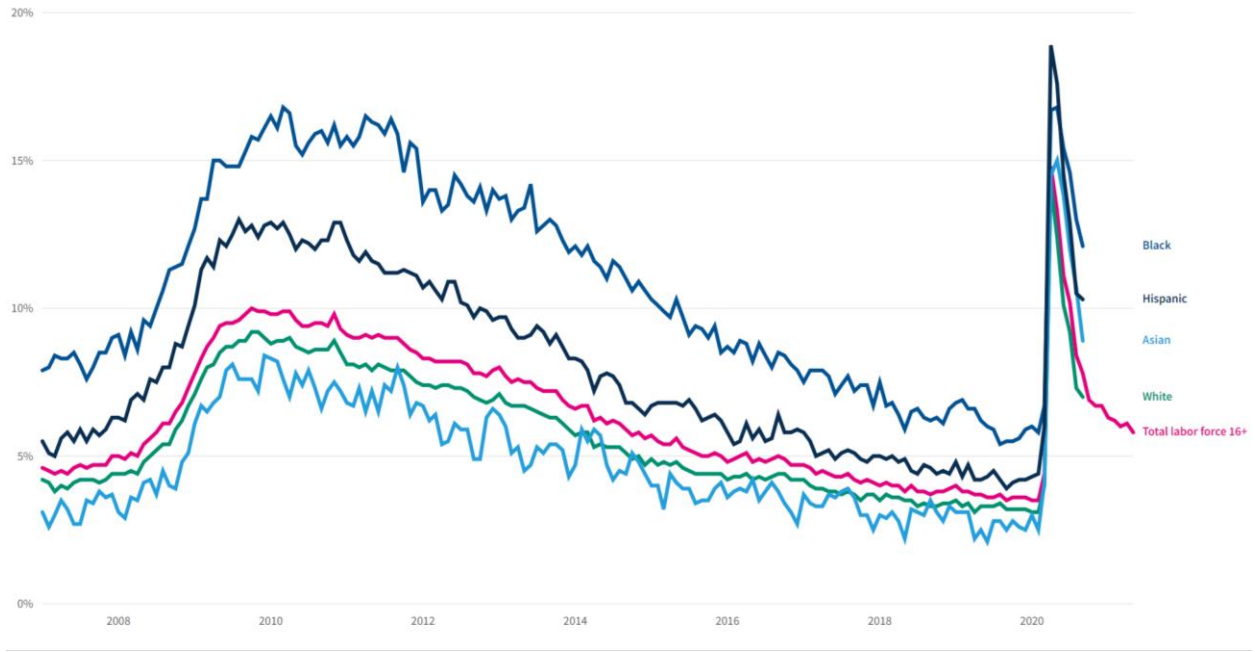

Figure 2. Unemployment rate in US.

Second is the fundamental beliefs existed in the mind of most Americans. The current day living style in America derives from ancient Greek psychology, in which it describes a society of freedom, people are allowed to do things they like to do. This is what US citizens believe in, as it should be their entitlement to do what they want to do, and weeks of lockdown in their houses is making them going psycho, their mind is on the edge of collapse, and they need to go outside their house to express their emotions and feelings.

Hence, under mixed circumstances, the US eventually decided to stop the lockdown and allow economy activities to undergo in normal times. This have caused huge number of infectious and numbers of death, but in an economic perspective the employment rate will soon recover to the original point, which will lead to the market back to the equilibrium.

5. Comparison

Both China and the US experienced a tremendous fall in the employment rate from the impact of COVID-19 at the beginning of the pandemic, but had a distinct impact on their economy respectively. For China, as the second largest economy in the world, also a member of developing countries, the structure of its GDP is mainly composed of production of goods and services which uses one's energy to produce income, so this makes their economy heavily rely on the profit bring by the employee. Hence, when the country's employment rate is being largely affected in a negative direction, this will bring a relatively bigger impact on the fall of total economy in comparison to US.

The US on the other hand, as a developed country their main components of GDP and economy no longer rely on the value produced by employees, but instead they used properties to make properties. This makes their economy not heavily affected when there's a fall in the employment rate caused by COVID-19. The components that formed their economy is different, so the fall in employment rate will have different influence on their economy [13-18].

Another difference is their way of dealing with the COVID-19, China is still adopting the same old way of lockdown policy, where when several people were found infected in a city then the city will experience another lockdown, while the US is already seeking for coexistence between their citizen and the virus, and this will have different influence on the employment rate in the future. After two years of evolving, COVID-19 has evolved some powerful variants such as Omicron BA. 5.2 Which has a horrific 18.6 for basic reproduction number, meaning that 1 person who carries the virus can easily spread to 18 people [19, 20].

Although the increase in basic reproduction number for several times, Omicron BA. 5.2 has a much lower lethality rate, even lower the lethality rate of a common flu. With this changes in the situation in the virus, it becomes much easy to coexist with the virus, ensuring the safety of people and at the same time, maintaining the employment rate on a certain level and it won't drop easily. That's what the US is doing at present, with almost a third of their population already infected with the virus, it will take them little effort to maintain the employment rate with the help of COVID-19 vaccines.

Under this circumstance, the lockdown policy used in China can't solve the problem throughout, in which it can only postpone the date where number of infectious people is getting out of control, since the basic reproduction number is keep rising. In the future, in order to completely solve the problem, in both aspect of ensuring the safety of people and the employment rate level, it is better to learn to coexist with the virus, not rejecting them outside the door.

6. Conclusions

In conclusion, this paper investigates the impact of COVID-19 on employment ratio. To be specific, the inherit reasons behind these impacts are explored using two samples, i.e., China and the US. In addition, this study also analyzed how the two samples respond to this crisis of COVID-19. According to the evaluations, the differences in structures of their economy are found. Besides, it is clarified how it can be related with the rise or fall of the employment rate caused by impact of COVID-19. In the future, it is hoped to see all the countries in the world trying to coexist with the virus in the times ahead. Overall, these results offer a guideline for policy implementation for government to handle with health stochastic issues.

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