

Study of Unemployment Risks Caused by COVID-19

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Abstract: To convey how can governments, firms, and individuals weather the crunch, apart from analysing the predisposing causes and side effects of redundancy, I also compared various groups of the employed in the aspects of relations with their employers, work categories, scales of operation of firms, academic backgrounds, and ages, then suggested which of them are more “dangerous” for losing jobs. Additionally, I took America as an instance to explore the feasibility of the different government monetary, fiscal, and supply-side policies. Measures in America are relatively common and comprehensive comparing with other developed and developing countries, thus they could be more advisable and explainable.

1. Introduction

As the COVID-19 appears out of nowhere, the global economy has faced the fastest, steepest recession since 1900. As figure 1 and figure 2 shows, most of the countries suffered because of the pandemic.

As the World Bank states, “Emerging market and developing economies will be buffeted by economic headwinds from multiple quarters: pressure on weak health care systems, loss of trade and tourism, dwindling remittances, subdued capital flows, and tight financial conditions amid mounting debt. Exporters of energy or industrial commodities will be particularly hard hit, economies are deteriorating in a variety of ways. The economic downward is both cause and consequence of unemployment- when firms have to decrease costs of production, they need to reduce staff; when more people have been dismissed, the rate of poverty would be boosted, demand will decrease, which can result in fall in GDP and economic growth. Taking the United States as an example, as figure 3 shows, the unemployment rate rose dramatically to 14.7% in April, which was the highest record since 1939. Therefore, the number of extreme poverties will increase (figure 4). This vicious circle will be worsened if there are no interventions.

Most countries are expected to face recessions in 2020

Share of economies in recession, 1871-2021

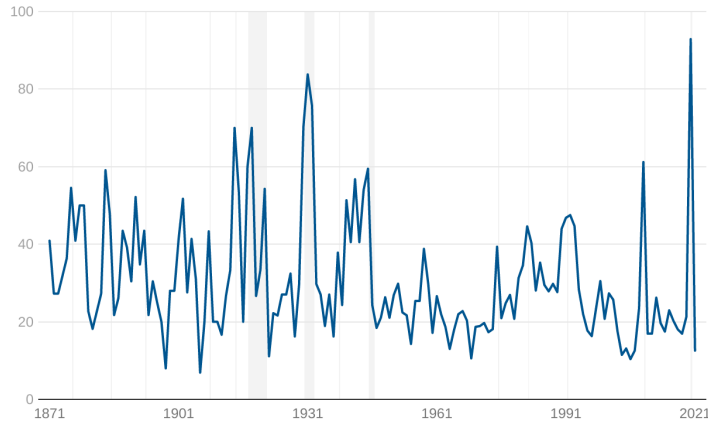
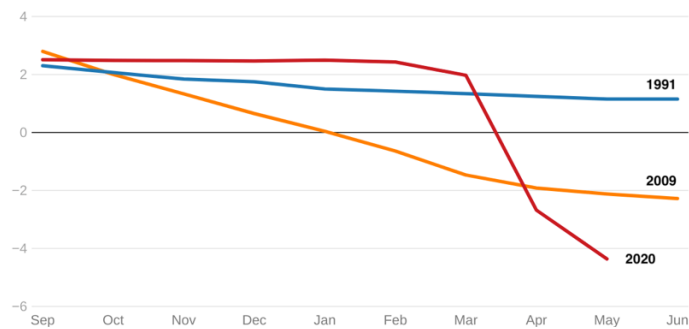


Figure 1: The proportion of economies with an annual contraction in per capita GDP. The World Bank, JUNE 8, 2020: The Global Economic Outlook During the COVID-19 Pandemic: A Changed World.

The COVID-19 recession has seen the fastest, steepest downgrades in consensus growth projections among all global recessions since 1990

Consensus forecasts of global GDP (percent)



September to December shows forecasts made in the previous year, while January to June shows data for the current year. Data for 1991 are for advanced economies only due to data availability.
Source: Consensus Economics, World Bank

Figure 2: Consensus forecasts the global GDP (percent). The World Bank, JUNE 8, 2020: The Global Economic Outlook During the COVID-19 Pandemic: A Changed World.



Figure 3: The unemployment rate of the USA (percent).

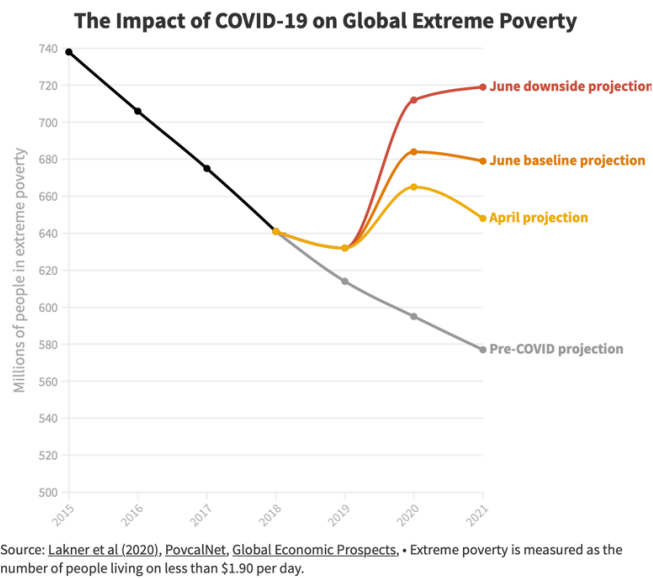


Figure 4: Trend of number of people in extreme poverty. The World Bank, JUNE 8, 2020: Updated estimates of the impact of COVID-19 on global poverty.

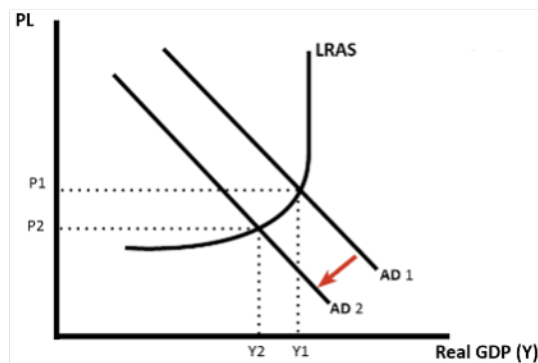


Figure 5: Effect of decrease in aggregate demand on price level and real GDP.

2. Reasons for Unemployment Caused by the Coronavirus

During the pandemic, most of the causes of unemployment could be regarded as demand deficient or cyclical unemployment. It always happens in economies that are operated below full capacity. Aggregate demand dropped in a recession caused by COVID-19, and as the graph shows, results in a decrease of output and negative economic growth. Consequently, for producing fewer goods, firms will cut a part of labour. In addition, a large scale of people working in firms that had bankrupted lost their job.

3. Consequences of Unemployment

3.1. Recession for the Whole Economy

Firstly, the total output will be reduced for the reason that some workers are not producing goods and contributing productivity, which will lower the GDP (Gross Domestic Products).

3.2 Inflation

As the aggregate supply decreases, inflation would be resulted. For example, the agricultural industry had been shut down for months. As diagram 6 shows, the line of short run aggregate supply shifts to left as food supply reduces, which caused the increase in price. Therefore, cost-push inflation would be led (Figure 7 shows the food inflation in the USA).

Furthermore, there will be more negative consequences of inflation. In perspective of consumers, apart from the falling value of savings, their real wages would decrease, which means the necessities might be more unaffordable for the poor, and even the rate of poverty will rise. As for the firms, as well as the existence uncertainties and confusions about further investment, which will lead to less investments in the future, additional costs will also be made, such as menu costs, shoe-leather costs and fiscal drags. When it comes to the whole economy, when governments are responding to the declining inflation, they may consider increasing interest rates to reduce inflation, but at a cost of lower economic growth, and a boom and bust economy.

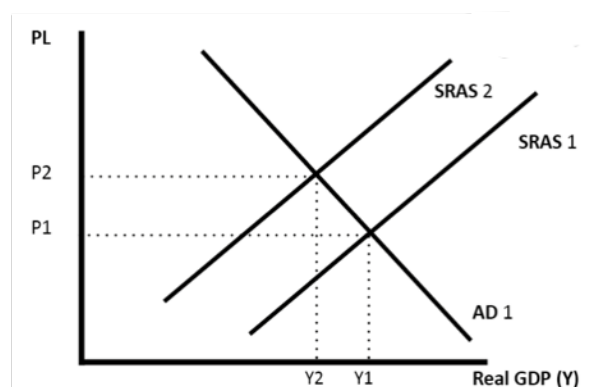


Figure 6: Effect of decrease in aggregate supply on price level and real GDP.

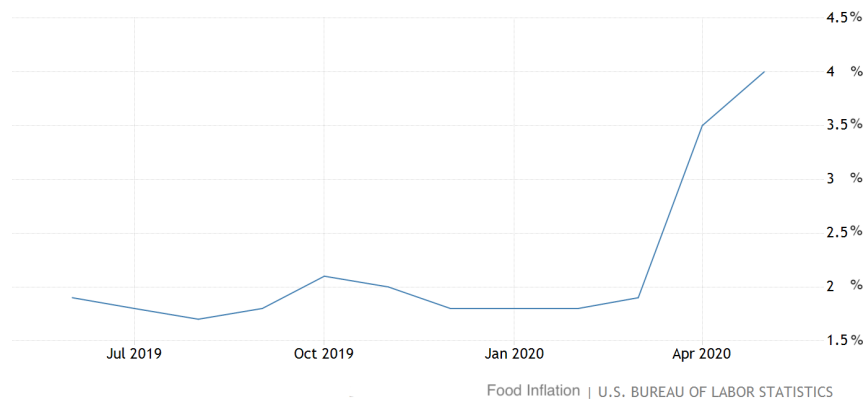


Figure 7: Food inflation in the USA.

3.3. Livelihoods of People

The unemployed would lose their incomes supporting their lives; the problem is poverty. If people are poor, they cannot afford the essential goods for living. Assuming the unemployed are hapless for being infected, medical treatment may exacerbate the difficulties.

3.4. The Reduction of Tax Revenues

The increasing amount of rate of redundancy also embodies that there are fewer tax revenues for the governments. If the unemployed are not earning and not paying taxes. Governments have to reduce spending on public services and merit goods. Apart from that, governments need to pay out welfares to support this group of people - less revenue and more expenditure. Under this situation, countries that do not have enough money in the national treasury may choose to increase the money supply, which will trigger more problems, such as inflation, and form a vicious circle.

3.5 Damage of Global Supply Chain

The outbreak of virus in a specific country would break the global supply chain and cause some negative impacts for production around the world. Taking China as an example for the reason that the virus was first outbreaked in there, it is obvious that analysing data in China is more accurate and clearer. Because of the shortage of supply of in parts made in China, some tycoons of car or smartphone manufacturing companies had altered their outputs. In the UK, Jaguar Land Rover, which is a renowned carmaker, cannot but used carry-on luggage to transport parts made in China to ensure that their domestic factories will not be closed. In Vietnam, some factories were shut down because of the short of raw materials and workers from China. The manufacturers which built bases in China also experienced a shock, although Japanese carmaker Toyota could produce parts in Thailand, they need to ship them to the base of Guangdong, China, for production. [1]

4. Potential Risks of Occupations and Posts

4.1 The Heating Up Competitions Inside a Company and Automation

Within a firm, a new concept was presented by William Davidow and Michael S. Malone in their book called the autonomous revolution, which is “insiders” and “outsiders”. Insiders indicate the full-time employees, and outsiders mean those freelancers and contractors. The necessary workers

(insiders) might be protected by the firms- if they can pay their salaries, the employer will pay all or most of their salaries. By contrast, the outsiders who are not close to the company might be given up during the ordeal. [2][3]

However, within those insiders, firms might concern who is essential, and who is not. Obviously, employing full-time workers is expensive, apart from the basic salaries, firm should pay additional costs such as medical insurance and pensions. Thus, the entrepreneurs would cut a part of labour to reduce costs. Furthermore, firms may also realize that human workers may get sick, which will postpone the process of production. To deal with this question, firms would use more automated system to work instead of employing human labour, which promote the automation and after the pandemics, the demand for labour might reduce. The reason of it is that in the aspect of firms, use robot to displace workers could be a beneficial decision in long run although using new tech-pattern is costly initially. First of all, automatons can keep working for a long time without rests, when facing unexpected events, they will not be interrupted or stop working. Besides, more consumers are shopping online or contacting others by using internet rather than waiting for the response in fixed places, so the need of real workers will be cut. Nowadays, robots are displacing human workers gradually. A joint report from the University of Oxford and Citibank stated that the proportion of the posts replaced by automation is 47% in the USA, 35% in the UK, and 77% in China. Since the open of the first cashier-free supermarket in China in 2016, a new upsurge of self-service stores had been started in most cities, conveniences are brought for consumers, but cashiers are facing a bigger risk of losing job. The trend is not only widespread in supermarkets, but also being popular in other industries, even jobs involving emotional communication such as doctors and poets could be replaced in the future. Workers of assembly line should be more vigilant for their occupation. [4]

4.2. Who Is Near the Precipice- The More “Dangerous” Jobs?

	Unweighted	Weighted by wage
Educational Services	0.83	0.71
Professional, Scientific, and Technical Services	0.80	0.86
Management of Companies and Enterprises	0.79	0.86
Finance and Insurance	0.76	0.85
Information	0.72	0.80
Wholesale Trade	0.52	0.67
Real Estate and Rental and Leasing	0.42	0.54
Federal, State, and Local Government	0.41	0.47
Utilities	0.37	0.41
Other Services (except Public Administration)	0.31	0.43
Administrative and Support and Waste Management and Remediation Services	0.31	0.43
Arts, Entertainment, and Recreation	0.30	0.36
Mining, Quarrying, and Oil and Gas Extraction	0.25	0.37
Health Care and Social Assistance	0.25	0.24
Manufacturing	0.22	0.36
Transportation and Warehousing	0.19	0.25
Construction	0.19	0.22
Retail Trade	0.14	0.22
Agriculture, Forestry, Fishing and Hunting	0.08	0.13
Accommodation and Food Services	0.04	0.07

NOTES: This table reports the share of jobs that can be done at home in each 2-digit NAICS sector. We compute these shares using our O*NET-derived classification of occupations that can be done at home and the occupational composition of each 2-digit sector's employment by 6-digit SOC in the BLS's 2018 Occupational Employment Statistics.

Figure 8: Share of jobs that can be done at home, by industry. Jonathan I. Dingel and Brent Neiman, University of Chicago, How Many Jobs Can be Done at Home?

As for the operation of various industries, those labour incentives factories are dampened seriously, such as construction and tourist industry. Some countries in southern Europe are highly rely on the consumption by visitors in tourist attractions. In comparison, heavy industries are facing better

conditions due to less labour needed, such as mining industry, it can be nearly fully operated during the pandemic. Therefore, industries that are shut down may cut more labour to reduce costs. The opposite is the case for several other industries. In a research from University of Chicago, 45% of swiss can work at home for the reason that they are undertaking business works, a laptop could satisfy most of their working demand, so their jobs are less likely to be affected due to the firms can operate normally. However, people in other regions might be less lucky than them. What policymakers should notice is that the productivity of workers at homes may be differ from working at offices. Apart from that, works that can be remotated are the important complements for the jobs that cannot be performed at home, governments should consider those factors to formulate a more detailed plan. [5][6]

4.3. The Scale of Firms

People working in small firms are more likely to be unemployed because those small firms have less cash buffers to respond for COVID-19. When they are facing economic crisis, lacking current capital would push them to the edge of bankruptcy. Consequently, labour in small scale firms will lose their job as firms dismissed. [7]

4.4. The Importance of Being Specialised and Educated

Furthermore, academic backgrounds can be a factor of affecting working conditions during the pandemic. More educated and richer person are more likely to work at home. In figure 9, those highly educated workers are able to finish their works at home with high incomes comparing with less-educated worker who can only work outside with risks of being infected. This group of people have some possibilities to be unemployed for the reason that firms should cut costs to deal with the decline in demand. Fighting for the rights of less-educated workers, Gig Workers Collective was formed by Vanessa Bain, which is aiming for reacting for new grievances of workers. The rigorous situation of the labour has been eased up by the strike in May in the USA, which helped to form a new and tight connections between the workers' groups. Thomas Kochan of the MIT Sloan School of Management states that, it is more vital to improve their leverage and show it to customers instead of protesting outside the warehouse. [8][9]

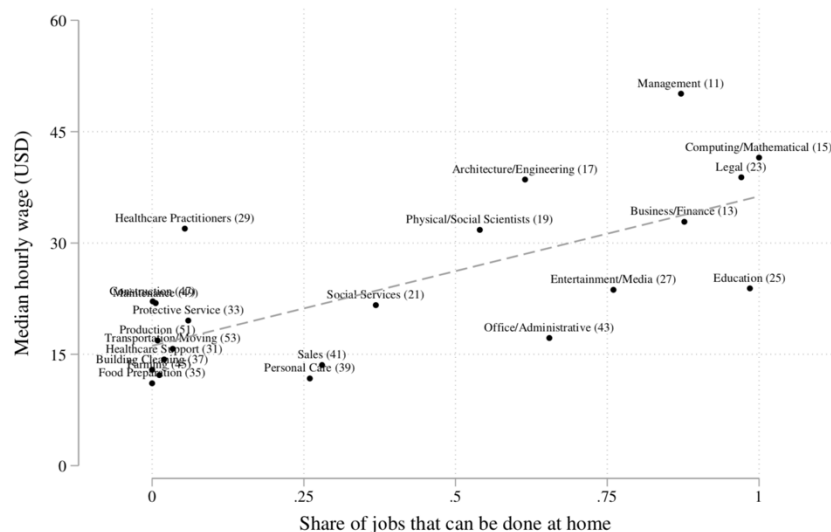


Figure 9: Jobs that can be done at home typically earn higher wages.

The divides had been widened between the professionals, low-paid workers, and the young. Obviously, the professionals can work at home on internet, such as having group meetings on Zoom, which is even more convenient than working in offices. Although working at home might bring several difficulties, such as the disruption of children, this would only affect their efficiencies and productivity, not their incomes and living standards. As mentioned before, the key workers must do their job offline, which increases the risk of infection or death, otherwise, they would resign and lose all of the income. The death rate is worse than that; the low-paid suffer the most. As Britain’s Office for National Statistics shows, the death rates of security guards, care workers and bus drivers are much higher than the average. Still, the professional’s death rate lower by far than the average because being “locked up” in-home created a safer place to seal of the spread of coronavirus. As for the young, Institute for Fiscal Studies explains that workers under age 25 suffered the most by the shutdown. The possibility of the shutdown of sectors that young workers are in is 2.5 times as others. However, the pound for this group is not such big for the reason that most of the young are living with their parents who received higher pay, their living standards are less affected than otherwise. [10][11]

5. Government Policies for Unemployment (Taking the USA as an Example)

If any, should be placed before the references section without numbering.

5.1. Monetary Policy

As for the expansionary monetary policy, the Federal Reserve decided to open unlimited “quantitative easing”, which will increase money supply. It is the fastest way to solve questions in short run and enable the large expenditure of unemployment welfare and insurance to be applied for the unemployed as an increase of weekly benefit amount that states currently provide by \$600, until July 31, 2020 towards the eligible workers. Apart from the unlimited “quantitative easing”, the FRB decreases the interest rate from 1,75% to 0.25% in March, which will not only benefit the poor families who are easier to borrow money to maintain their living standard and stimulate more demand to put economic growth to the right track, but also satisfied the demand of firms to ensure their funds for operation and employing labour.[12][13]

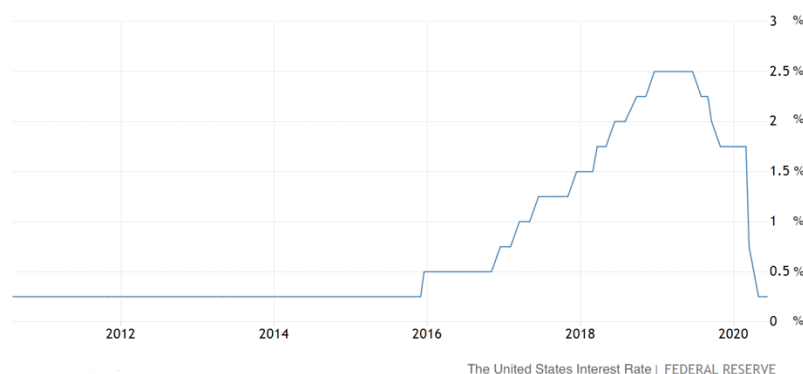


Figure 10: The United States Interest Rate

Despite the fact that unlimited “quantitative easing” increased funds of governments, the rise of money supply might result in the devalue the dollars, inflation may be more severe due to the loss of value of money. The inflation could be deemed as the opportunity cost of solving the problem of redundancy, which might be more stable after further interventions by the government. Facing the

sudden pandemic, the government chose to ensure the living standard of citizens in short run, although it may result in several negative effects.

5.2. Fiscal Policy

5.2.1. Unemployment Insurance Benefits

Expansionary fiscal policy is also strong and sustainable when facing serious recession. The government would reduce taxes or increase expenditure to maintain economic growth. Decreasing taxes to stimulate economic growth had already been applied in 2018 by President Donald J. Trump, which is different in approach but almost equally satisfactory in result with the decline of interest rate. Both of them supply business and consumer more available money and increase demands for more investments and labour. Besides, as mentioned before, the rising government expenditure includes unemployment welfare and insurance.

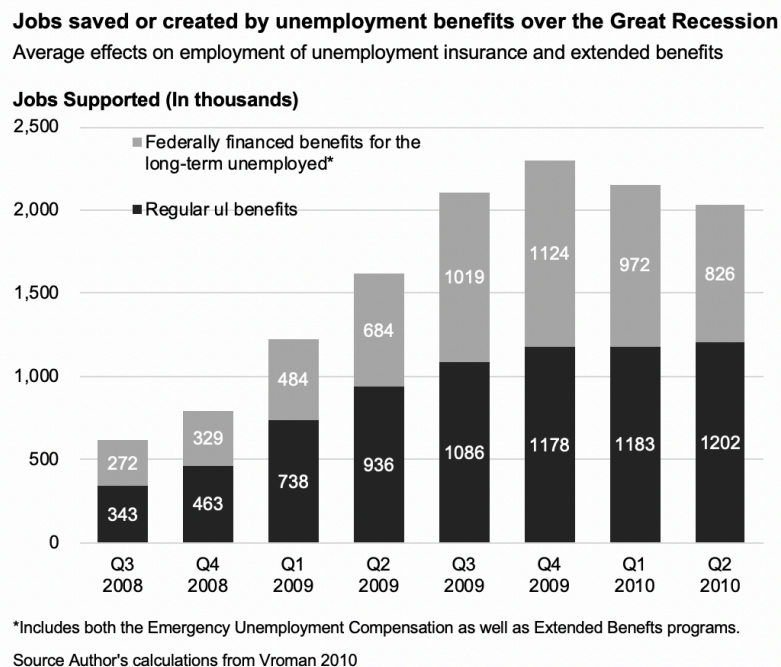


Figure 11: Jobs saved or created by unemployment benefits over the Great Recession. Heather Boushey and Matt Separa. September 21, 2011. Centre of American Progress. Unemployment Insurance Dollars Create Millions of Jobs

However, it is hard to judge whether providing unemployment benefits is a good decision. It is undeniable that it maintains the living standard of the poor and narrows the potential group of poverty. The pandemic is differing from other kind of recessions, after the short-term crisis, the economy should recover quickly theoretically- the unemployed will find new jobs, and firms will employ new labour. Based on the research from Noah Williams of the University of Wisconsin-Madison, benefits in six states could exceed 130% of the average wage, which means that during the economic recovery, people who can only find a low-income job are more likely to apply for the benefits rather than work. As a result, the economic growth after the pandemic is hard to judge.[14]

The unemployment insurance benefits are the strongest “line of defence” when facing a recession. The expenditure of \$1 for the benefit could create growth of 2\$ as a ripple effect of the economy for

the reason that the recipients would spend all of the benefits on housing, necessities, etc. as a result, more job might be created because of the increase in demand. For instance, as the consumption of food increases, the number of restaurants and demand of attendants will rise, either. Referring to the recession of the USA in 2010, more investments in welfare could also be an effective measure towards COVID-19. Unemployment benefits are the fastest way to react; it is different from the ARRA which would be more time-consuming. [15]

5.2.2. Job Provision

Apart from providing subsidies directly, the US government sets up American Recovery and Reinvestment Act (ARRA) in 2009, which was aiming for rendering more job opportunities by increasing government spending to cooperate with firms or even establish new state-owned enterprises (SOEs). As a result of ARRA in 2 years, the average increase of jobs is about 156 thousand to 563 thousand. Moreover, considering the spillovers between different regions, the ARRA creates more job effects. For example, if state A received more ARRA aid, it will have higher economic incentive. After the residents the state A earned more, they might spend their money or go on a holiday in state B, which will create more jobs in state B's tourist industry. If the spillovers happen in more places, it may benefit the whole country. Additionally, as the paper researched by Timothy G Conley and Bill Dupor, less educated people are facing a worse job market comparing with those well-educated. Therefore, it is essential for government to concern differentiating the job market to ensure a larger group of people could be benefitted.[16]

Using fiscal policy to deal with recession is not only regarding people's livelihoods, but also about government' income, a targeted and accurate policy could reduce the expenditure of the government in long run because the recession will cause the decline of tax revenue severely.[17]

5.3. Supply-Side Policy

When it comes to the supply-side policy, governments will fund education to boost job opportunities by developing the quality of labour. A research of University of Massachusetts Amherst shows that spending \$1 billion on education could create more than twice number of works comparing with spending on military.[18]

6. Conclusion

The severe unemployment is mainly caused by the reduction of demand and economic recession, which is also a consequence of unemployment. As result of it, for individuals, their living standards had been declined. For firms, inflation caused by a decrease in supply will make some uncertainties for future investments. Microscopically, as well as the reduction of government tax revenues, the global supply chain might be fractured.

Based on the research, these advice are applied: firstly, for each person, they need to sharpen their competitive edge within labour market, such as participating in trainings, learning more skills, for the reason that the paper conveys that the less-educated workers are mainly working offline, which increases the threat of losing jobs. Besides, studying more can help workers to follow a career that has high degree of work difficulties, which means they are less likely to be displace by automated robots. Moreover, it is large-scale companies that enable more capital flows, so when facing unexpected events, risks of going bankrupt is smaller. If it is inevitable to be unemployed, residents should not only apply for the unemployment benefits on their own initiative to maintain the living

standards, but also avert infection through taking some protection measures towards coronavirus to reduce additional costs.

As for the firms, borrow money from the central banks under a low interest rate is a worthwhile decision, more current capital could assist them for pulling through a crisis. Governments may perfect the unemployment insurances to make sure that they are distributed accurately and widely to help all groups of the unemployed. Apart from the basic monetary (increasing money supply) and fiscal policies (providing more occupational opportunities and cutting interest rates), investments of training projects and education sponsorships could improve the competitiveness of labour themselves.

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