The Impacts of the COVID-19 Pandemic on Macroeconomy in the United States

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Abstract:

The COVID-19 pandemic has profoundly impacted the macroeconomy of the United States. This abstract provides an overview of some key effects observed across various sectors. The pandemic triggered an unprecedented economic contraction, marked by sharp declines in GDP, skyrocketing unemployment rates, and disruptions in supply chains. Government responses aimed to lessen these effects. The pandemic induced lockdowns and restrictions, leading to a significant economic activity contraction. Real GDP experienced a sharp decline as businesses temporarily closed and consumers reduced spending. Sectors such as hospitality, travel, and entertainment were particularly hard-hit. The pandemic also caused a sudden surge in unemployment rates as businesses laid off due to reduced demand. The labor market faced unprecedented challenges, with a rapid increase in jobless claims and long-term unemployment issues.

Keywords: COVID-19, macroeconomy, GDP, U.S.

1. Introduction

GDP is the final result of production activities of all resident units in a country (or region) in a certain period calculated at market prices. It comprises four components: consumption, investment, government spending, and net exports. These four sections collect data at different times to change the described phenomenon over time. This data reflects the state or degree of change of something, phenomenon, etc., over time. Macroeconomics refers to total economic activities; some small aspects can indirectly reflect its change. Since the epidemic's outbreak, it has greatly impacted all aspects of American national life, which has affected America's overall economic situation.

In this paper, we will discuss the impact of the epidemic on the macro-economy of the United States since the outbreak. We select several aspects and explore the relationship between them and GDP to infer the impact of the epidemic on the macro-economy of the United States. We initially believe that the epidemic has greatly impacted all aspects of the United States and has had a certain impact on the U.S. economy.

2. Literature review

Most articles published so far concentrate on dividing its economic impact into periods. For instance, Qiao Mengqi [1] thinks the COVID-19 pandemic has wreaked havoc on the global economy and people's lives, especially in the wholesale and retail sectors, closely linked to people's basic needs. Another example is Jingjing Zhang [2], who thinks the impact of the pandemic on the U.S. economy is not just a short-term structural shock and analyzes three long-term effects. Changes in employment structure and changes in inflation. These changes could lead to a slight rebound in the share of U.S. manufacturing and a younger workforce in the service sector. , the COVID-19 outbreak is also having an impact on the U.S. electric vehicle industry. Sun Pu analyzes the performance of retailers of electric vehicles, hybrid vehicles, and green energy ETFs in the market during the COVID-19 pandemic[3]. The result shows that the mixed vehicle retailers suffered the most throughout the pandemic. The results of his paper show that the coronavirus pandemic is impacting the stock market and accelerating global concerns about climate change and the environment.

3. Methodology and data

The methodology to test whether the epidemic impacts the U.S. macroeconomy. To analyze the relationship between investment, employment, unemployment, inflation, and GDP in Table 1. We think this result can roughly reflect the impact of the epidemic. We collected 14 years of annual data (from the Bureau of Economic Analysis) of the United States from 2008 to 2021.

4. Results and Discussion

By calculating the correlation between investment, employment, and GDP, we can see a significant positive correlation between the two and GDP.

Table 1. The correlation between investment, employment, and GDP.

	SD	SD Ratio	Correlation
GDP Cyclical	1.6	1.0	1.0
Consumption Cyclical	1.9	1.2	0.9
Investment Cyclical	9.5	6.0	0.5
employment Cyclical	-1.9	-1.2	0.8

Their linear relationship to GDP is shown in the Figure 1 and Figure 2 below. The first graph reflects the relationship between investment and GDP, and their trends are consistent, indicating that GDP rises as investment increases. The second chart shows the relationship between employment and GDP, reflecting the same trend as the first.

The results reflected by these data are consistent with the results in the literature we collected. Still, these data cannot reflect the existence of the relationship because the data collected by us does not have enough time and location, and the data is not comprehensive enough.

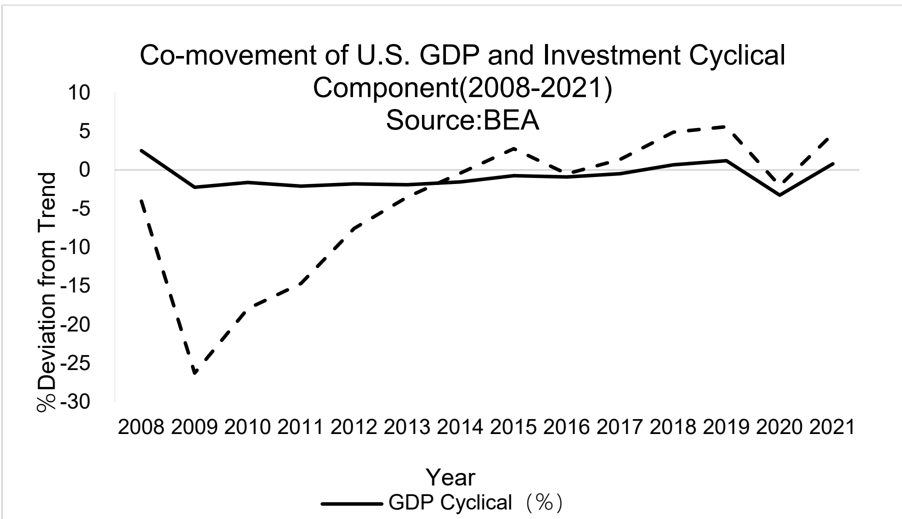

Figure 1. Co-movement of U.S. GDP and Investment Cyclical Component (2008-2021).

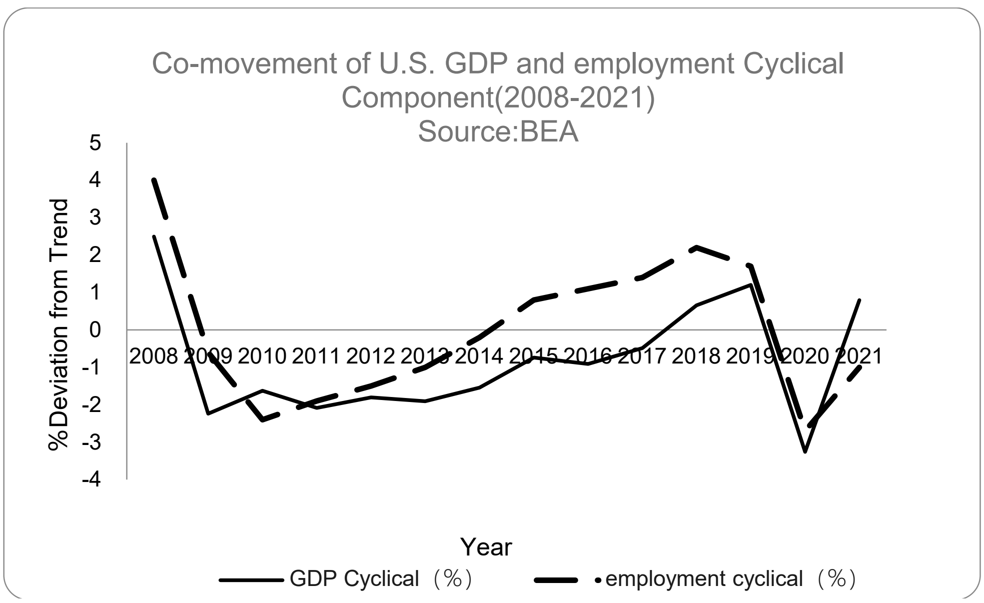

Figure 2. Co-movement of U.S. GDP and employment Cyclical Component (2008-2021).

By observing these two line charts, we can see that in 2020, each curve has a significant decline. According to this, we can conclude that during the outbreak of the epidemic, people's enthusiasm for the economy was not high, which led to the reduction of investment, and people's physical fitness decreased the employment rate due to the epidemic. These two things contributed to the poor economic situation.

Table 2. The unemployment rates of the U.S.

total 16 years and older	
unemployment rate	
2021 1st quarter	6.2
2nd quarter	5.9
3rd quarter	5.1
4th quarter	4.2
inflation rate 2020	%
February	0
march	10
April	70
may	30
June	30
July	20

The COVID-19 pandemic, which struck the United States in early 2020, brought with it not only a public health crisis but also a severe economic downturn. We can see in Table 2 that at the beginning of 2021, when quarantine was most strict, there was the highest unemployment rate. We can also see the higher inflation rate amid the pandemic in the summer of 2020. As businesses shuttered, stay-at-home orders were implemented, and consumer confidence plummeted, the country experienced a dramatic increase in unemployment rates.

One of the primary drivers of the soaring unemployment rates was the forced shutdown of businesses nationwide. Many states and local governments imposed strict lockdown measures to curb the spread of the virus, affecting a wide range of industries. Restaurants, retail stores, entertainment venues, and hospitality businesses, in particular, faced devastating closures. Millions of Americans lost their jobs, as businesses laid off employees or closed down entirely.

Social distancing measures, such as limits on the number of people allowed in public spaces and the requirement for employees to work from home where possible, further exacerbated the unemployment crisis. These measures made it difficult for companies in various sectors to continue their operations, and many had no choice but to furlough or lay off employees. These restrictions especially hit industries like tourism, transportation, and manufacturing.

Consumer spending, a critical driver of the U.S. economy, took a sharp downturn during the pandemic. With millions of people losing their jobs or facing uncertain financial futures, many households cut back on discretionary spending. This impacted businesses that rely on consumer demand, leading to reduced revenue and, consequently, more layoffs.

The disruption of global supply chains due to the pandemic also contributed to rising unemployment rates. Many American companies rely on international suppliers for components and materials. When these supply chains were disrupted by factory closures and shipping delays in other countries, it ripple effect on U.S. businesses. This resulted in production slowdowns, factory closures, and job losses in various manufacturing sectors. The uncertainty surrounding the duration and severity of the pandemic caused businesses to reduce their investment and expansion plans. Many companies froze hiring, canceled capital projects, and postponed investments in new ventures. This reluctance to invest in the face of economic uncertainty hurt job creation, leading to higher unemployment rates.

5. Conclusion

The COVID-19 pandemic had a profound and far-reaching impact on the United States, and one of its most significant consequences was the surge in unemployment rates. The pandemic's combination of business closures, social distancing measures, declining consumer spending, supply chain disruptions, and uncertainty in the business world all played a role in this crisis. While government assistance provided a vital safety net, the road to recovery required a multi-faceted approach that included vaccination campaigns, targeted economic stimulus, and efforts to rebuild confidence in the job market. Understanding the factors behind the increase in unemployment rates during COVID-19 is essential for shaping future policies to mitigate the effects of similar crises and support economic resilience.

6. Acknowledgement

Eileen Fan and Jiaying Gong contributed equally to this work and should be considered co-first authors.

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