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## RESEARCH ARTICLE

### International Comparison on Economics Impact from the COVID-19 Pandemic: Policy Analysis

Brandon Supple  
BBA Candidate  
School of Business  
Southern Connecticut State University  
[suppleb1@southernct.edu](mailto:suppleb1@southernct.edu)

Jia Yu, PhD  
Associate Professor of Economics  
School of Business  
Southern Connecticut State University  
[Yuj4@southernct.edu](mailto:Yuj4@southernct.edu)

#### ABSTRACT

In the most recent Covid-19 pandemic, there was historical economic pressure placed on the world. Countries and governments were required to prepare themselves for the upcoming economic shock that would close the doors to businesses, halt gross domestic product (GDP) growth, and spike inflation rates. The four countries of the United States, the United Kingdom, Singapore, and Australia all produced some methods of early economic response to the Covid-19 Pandemic. However, not all parameters taken towards mitigating the pandemic economic effects proved effective. In order to understand how effective some of these responses were, each country's Gross Domestic Product, Inflation Rate, Gross National Income, Unemployment Rate, and Manufacturing output were tracked along with the recorded cases and deaths from Covid-19. In addition, each country's pre-pandemic responses were also identified to understand how these countries reacted in preparation for the pandemic and to determine if those responses were effective. The data shows in the varying conditions that countries which was suffering from a falling gross domestic product growth rate and a relatively meager inflation rate were significantly bolstered by the pandemic to much more favorable levels without much shock to unemployment. The research also discovered the negative relationship between the pandemic prevention polices and potential economic growth.

## 1. Introduction

Almost all economies worldwide may go through long recessionary periods after the Covid-19 pandemic. Interruptions to the supply chain due to the pandemic have caused long lasting effects on many economies worldwide. Covid-19 is a highly infectious disease; the World Health Organization estimates that globally, there have been nearly 640 million confirmed cases of Covid-19, with over 6 million confirmed deaths<sup>1</sup>. Ideally, a country's government and its central bank would conduct some combination of policies and subsidies to support the economy and the people to prevent total shutdown and closure of the country. From an economic standpoint, production would naturally decrease when a portion of the population became sick and unable to produce. This study selected four countries to analyze various pandemic responses and understand economic changes throughout the first year of the Covid-19 pandemic. The countries of The United States (U.S.), The United Kingdom (U.K.), Singapore, and Australia all responded to the pandemic in various ways. Two countries, Singapore and Australia, were observed to have much stricter regulations and rules to respond to the pandemic, such as quickly closing borders and restricting some daily activities. Meanwhile, the U.S. and U.K. lagged in reacting to the pandemic and had less control over the spread of Covid-19, compared with Singapore and Australia. The goal was to recognize each country's responses to the pandemic and compare the similarities and differences. Additionally, attempting to identify the effectiveness of these pandemic responses as it relates to that country's economy.

## 2. Comparison of Covid-19 Responses and their Effectiveness

In Mid-December 2019, the first notice of a covid case involved clustered group of people in Wu Han, China, who experienced pneumonia-like symptoms. Two months following the strange viruses' emergence, the World Health Organization (WHO) officially named this new pneumonia-like virus, Coronavirus Disease 19, abbreviated "Covid-19"<sup>2</sup>. Just one month later, the WHO officially declared the global Covid-19 pandemic with over one hundred thousand cases and over four thousand deaths spanning over one hundred and fourteen countries<sup>1</sup>. Between these four months, depending on when each country experienced its first cases of Covid-19, governments would enact strict policies to limit travel, provide organized testing, and provide for the economy. Statistics were collected from the WHO and the Centers for Disease Control (CDC) to evaluate the effectiveness of each country's methods of containing and limiting infection. While

Covid-19 is remarkably infectious, certain factors can drastically affect the risk of hospitalization or death. The CDC reports<sup>2</sup> that from a reference group of an 18-29-year-old population, those who find themselves above that age group are understandably at progressively higher rates of death and hospitalization, going as high as 15 times risk for hospitalization and 340 times risk for death for the elderly population<sup>2</sup>. For the following observations of the four countries selected, it is essential to understand that the infection rate and casualty count are only sometimes due to the responsibility or irresponsibility of the central government. For example, informing the public, restricting access to non-essential businesses, and providing support either financially, in the form of stimulus payments, or physically, mask or vaccine distribution are all reliable responsibilities of the government of that country.

The first of the selected countries, Singapore, holds the closest location of the chosen countries geographically to China, where the virus originated. Understandably, Singapore experienced one of the first international cases of Covid-19. Officially, the first case of Covid-19 in Singapore was detected on the 23rd of January when a suspected infected person supposedly suffered from pneumonia-like symptoms and reported fever and cough<sup>3</sup>. Despite no known cases of Covid-19 found in Singapore, the local government had already implemented safety precautions to limit the spread and contain any virus cases. Singapore's pre-pandemic safety precautions were implemented nearly twenty days before the first known infection. Body temperature checks were required at airports for passengers arriving from China and for all passengers several days later<sup>3</sup>. Several ramping safety precautions were also adopted to prepare for a potential outbreak. Singapore has demonstrated exceptional containment of the spread of the virus during the first three months of the Covid-19 pandemic<sup>4</sup>. Although Singapore's government reaction has been considered an excellent response to the pandemic, it still has flaws. The Covid infections of migrant workers living in dormitories doubled every 4.9 days in early May, which tripled the doubling rate of infection among the rest of the population<sup>4</sup>. While Singapore carried some advantages towards containing the spread of the virus, smaller and more densely populated areas tended to suffer from much higher infection rates, which could have ultimately affected the more significant population. Realistically, it is nearly impossible to contain a virus as highly infectious as Covid-19 fully and permanently. Singapore is one example of a

country that handled the spread of Covid-19 relatively well.

Australia, the second selected country, had similar results for its pandemic response. The first known case discovered in Australia occurred two days after Singapore's first known case on the 25th of January. Statistically, where Australia faced a reported infected population of six thousand on May 1st, Singapore had nearly tripled that metric. However, even with fewer cases in Australia, the death toll in Australia was five times more than in Singapore. Due to the high dependency on tourism, the major focus of Australia's government responses was travel restrictions and border control<sup>5</sup>. A travel ban from China was implemented on 1 February 2020, and subsequently included other countries such as Iran (February 29), South Korea (March 5), and Italy (March 10)<sup>5</sup>. Australia's primary objective towards limiting the pandemic was preventing new cases and, thus, new origin points for the virus to begin to spread within the country. With fewer cases coming from international travel, Australia would have a better chance of managing infections within its borders.

The third country chosen for observation, The United States (the U.S.), comparatively to Singapore and Australia, had different experiences relating to the rate of infection and death rate. The first known Covid-19 case occurred on the 20th of January<sup>1</sup>. The U.S.'s response to Covid-19 was mainly on a state-by-state basis. Some states had relatively stricter restrictions, such as closing schools or mandatory quarantine, while others chose to delay or not implement some typical rules. In the U.S., each state has varied largely in the measures and responses they have adopted, including how quickly the measures were adopted and how long they have been kept in place<sup>6</sup>. This rather unorganized response resulted in a relatively quick infection rate. Between the first date of confirmed

infection to the same point of reference used for Singapore and Australia, the U.S. suffered from an infected population of 1 million on May 1st, which was rapidly increasing day by day. By the beginning of June, the infected population in the U.S. had increased by 80%<sup>1</sup>. The United States also suffered from a casualty count of sixty thousand on May 1st, with around a daily increase of two thousand. In an interview with CNN, Anthony Fauci, director of the National Institute of Allergy and Infectious Diseases (NIAID,) said, "if you had a process that was ongoing, and you started mitigation earlier, you could have saved lives." With States closing operations at random times throughout the timeline of the pandemic and the federal government not stepping directly in to make a general ruling, the outcome was a quick spread of Covid-19 followed by a ramping fatality rate that continued to make the situation even direr.

The fourth and final country selected, the United Kingdom, experienced its first case on February 1st, the latest initial infection date of the chosen countries, and from this date to May 1st, had accumulated just under two hundred thousand cases of Covid-19. Adjusting for population puts the U.K. just slightly below the infected population of the U.S. and Singapore at that time and less than half of that of Australia. As for the fatality count, as of May 1st, The U.K. had less than half of the fatality count of the U.S., with slowing numbers of deaths exceeding five hundred per day. The U.K.'s immediate response, similar to the U.S. response, was largely inaction before the pandemic became problematic and action only when that infection had spread enough when it had become a complicated issue.

Please refer to Table 1 for the confirmed infectious cases and deaths of Covid-19 for the four selected countries.

**Table 1:** Total Confirmed Cases and Deaths of COVID-19

Country	Confirmed Cases 2020	Confirmed Cases 2021	Confirmed Deaths 2020	Confirmed Deaths 2021
Singapore	58,569	279,061	29	827
Australia	28,381	362,558	909	2,226
United Kingdom	2,563,566	13,441,635	75,240	149,927
United States	19,577,585	53,584,296	352,004	819,055

Note. Data depicts the total number of confirmed cases and deaths reported by each country on December 31st of the year specified.

Source: The World Health Organization: <https://covid19.who.int>

### 3. Economic Impact and Data Analysis

The economic impact of Covid-19 stems from mostly a supply shock, in other words, a shift in the number of available goods for consumers. Supply shocks typically occur during recessionary periods within the lifetime of any given economy. While recessionary periods happen naturally, the

unnaturally caused recessions tend to cause the most significant economic damage. The most common definition of a recession is two consecutive quarters where GDP growth is negative. In all the collected data from each country, it can be observed that every country experienced a recession, with GDP declining in the year 2020 in every example.

**Table 2:** Changes in GDP and GNI for the Four Selected Countries

Country	GDP 2019 (Billions of \$)	GDP 2020 (Billions of \$)	GDP Change (%)	GNI 2019 (Billions of \$)	GNI 2020 (Billions of \$)	GNI Change (%)
Singapore	\$375.47	\$345.30	-8.04%	\$331.16	\$312.76	-5.56%
Australia	\$1,391.95	\$1,327.84	-4.61%	\$1,392.85	\$1,379.11	-0.99%
United Kingdom	\$2,878.67	\$2,756.90	-4.23%	\$2,904.90	\$2,681.47	-7.69%
United States	\$21,372.57	\$20,893.74	-2.24%	\$21,659.44	\$21,261.27	-1.84%

Note. Data depicts Gross Domestic Product (GDP) and Percentage change in GDP between the years 2019-2020 and the Gross National Income (GNI) and percent change in GNI also for the years 2019-2020 (All data is expressed in billions of dollars)

Source: The World Bank: <https://data.worldbank.org>

Table 2 depicts the changes in Gross Domestic Product (GDP) and Gross National Income (GNI) and for the year before the pandemic compared to the year of the pandemic. All four countries have experienced negative GDP and GNI growth rates. The trend is that despite Singapore having one of the most well-managed examples of Covid-19 and the pandemic, it suffered the

greatest in GDP in the same year. The highly aggressive plan to shut down the country may have directly affected the country's ability to produce. Understandably, a small country with less GDP would likely face the harshest percent change as more of the already limited capital available to create would be forced to shut down.

**Table 3:** Inflation Rate Changes for the Four Selected Countries

Country	Inflation Rate 2019	Inflation Rate 2020	Inflation Rate 2021	Inflation Change (%) (2019-2020)	Inflation Change (%) (2020-2021)
Singapore	0.57%	-0.18%	2.30%	-0.75%	2.49%
Australia	1.61%	0.85%	2.86%	-0.76%	2.02%
United Kingdom	1.74%	0.99%	2.52%	-0.75%	1.53%
United States	1.81%	1.23%	4.70%	-0.58%	3.46%

Note. Table 3 depicts the inflation rate changes over the three years 2019, 2020, and 2021 and the percentage change between 2019 to 2020 and 2020 to 2021.

Source: The World Bank, <https://data.worldbank.org>

Inflation is generally influenced by several factors; some of the main elements can include higher demand for work and higher wages, which would effectively mean the employment rate and price of labor would be increasing, respectively. With businesses during the pandemic being forced to shut down or run minimal processes to sustain

themselves, companies are not choosing to employ more workers or pay higher wages for financial reasons, which would, in theory, lower overall inflation. The underlying issue is that with fewer businesses and fewer workers to produce, the overall demand stayed the same; there was not enough supply to eventually satisfy the demand.

However, due to the business shut down and the quarantine policies, many people have suffered unemployment and paycheck cuts. To provide daily life supplies and securities, governments raised the minimum wage and subsidized more on

unemployment benefits more, which inclined the operation costs for remaining businesses and products demand. It is predictable to see a greater increase in the inflation rate in 2021.

**Table 4: Unemployment Rate and Manufacturing Changes for the Four Selected Countries**

Country	Unemployment Rate 2019	Unemployment Rate 2020	Unemployment Change (%)	Manufacturing 2019 (Billions of \$)	Manufacturing 2020 (Billions of \$)	Manufacturing Change (%)
Singapore	3.10%	4.10%	1%	\$72.97	\$68.90	-5.57%
Australia	5.16%	6.46%	1.4%	\$78.16	\$75.04	-3.99%
United Kingdom	3.74%	4.47%	0.73%	\$255.62	\$239.79	-6.19%
United States	3.67%	8.05%	4.38%	\$2,366.30	\$2,337.55	-1.21%

Note. Table 4 depicts the unemployment rate, manufacturing, and percentage change for both data sets from 2019 to 2020. (manufacturing is expressed in billions of dollars)

Source: The World Bank: <https://data.worldbank.org>

The unemployment rate can massively affect a country's production. To survive and continuously produce, businesses may have to cut operation costs when resource prices are high. And cutting operation costs involves laying off employees, which may result in an increasing unemployment rate. The unemployment rate in the US was even more than doubled in Table 3. Not only were businesses required to cut these costs via unemployment, but the employees who unfortunately tested positive for Covid-19 were also required to quarantine themselves for a certain time period in order to prevent further spread of the virus. With asymptomatic cases of Covid-19, spread of the virus was complex to contain for households and businesses. People could physically feel normal but, unbeknownst to themselves, be infecting others around them unintentionally. The WHO reported in 2021 that one out of three infected people were asymptomatic and could easily spread the virus at home and in the workplace<sup>1</sup>. With so many factors inclining the unemployment rate, it is understandable that the manufacturing amount would decrease in 2020 compared with 2019.

#### 4. The Central Banks and Covid-19

Central banks played a key role in providing economic stability during the pandemic. Combinations of monetary and fiscal policies were implemented to best support the economy. In general, monetary policy is applied more frequently to support labor force than fiscal policy

for these four selected countries. The most commonly used monetary policies involved lowering the interest rate and injecting more cash into the monetary market, which are easier for business and individuals to borrow more from commercial banks. With more cash on hand and more money circulating through the economy, the economy would stimulate growth despite the overall drop in production. The goal was attempting to mitigate the economy's downturn and lowering prices to help bolster production in businesses and individual spending. However, with plentiful cash floating in the market, inflation realistically will increase as the value of the currency falls. This would account for the high inflation moving into 2021 as currency was more abundant after the dramatic dropping of the central bank interest rates.

To inject cash into the economy, central banks usually buy consumer bonds. For examples, both the central banks of Australia and the U.S. pledged to buy government bonds in 2020 to stimulate the economy directly<sup>7,8</sup>. This direct implementation of new cash into the money supply is typically referred to as quantitative easing. The combination of a lower central bank interest rate and quantitative easing allowed the U.S. and Australia to manage inflation and stimulate their economies using these two methods. Unlike the U.S. and Australia, the U.K. and Singapore did not adopt quantitative easing. Instead, they focused more on lowering central bank interest rates and directly supporting businesses, such as lowering

operating costs and delaying debt payments and liabilities.

Besides the traditional monetary policy, the central banks in Australia and the US also adopted an even more straight way to boost money supply, i.e. providing direct stimulus checks to individuals who fell under certain income criteria. Households and individuals were paid based on several factors, mostly relating to how much income was earned in the year prior. The stimulus checks became another incentive to speed up the inflation after 2021.

## 5. Conclusion

From the data collected, it is obvious that in cases such as the U.S., where Covid-19 was poorly managed, the country's GDP was maintained to a far greater capacity than that of the other countries despite the unemployment and inflation increases. It is expected that with higher manufacturing and production in the U.S., unemployment would be lower and manufacturing supply would be higher. Regardless, inflation and unemployment rose in comparison to the year prior. In Singapore, the policies enacted against the pandemic were much stronger, resulting in more significant manufacturing loss and the second-highest inflation rate change during the transition from 2020 to 2021. Even with a low fatality count, as expressed earlier, Singapore was the only country selected that experienced deflation during the pandemic. Due to the extensive measures provided by the central government of Singapore, the supply of products might be much higher than the demand. As for the U.K. and Australia, despite the ladder dealing with higher unemployment and inflation, the initial shock towards the manufacturing section of Australia's economy was much less than that of the U.K., contrary to the U.K.'s similar Inflation and lower unemployment rate.

## 6. Discussion

The data suggests that multiple divergent factors were driving the shift in the economies of the four countries. Some countries with poor management of the pandemic showed higher inflation and manufacturing (added value), while others who chose to be proactive found themselves too focused on containing the virus that inflationary factors were never seen. This research aimed to demonstrate the potential economic impact of the policy implementation related to regulating the Covid-19 spread-out. From the data, we can conclude that relatively stricter pandemic prevention and quarantine policies were able to contain the infection and death rate of the population significantly but harmed the economic growth simultaneously. During a pandemic, keeping people safe, healthy, and alive should always be the priority of any preventive policy.

Meanwhile, sacrificing economic development is inevitable. However, slower or even negative economic growth will trigger a high unemployment rate along with a high inflation rate and few manufacturing products, which may damage more on people's standard of living, social security and stability. The paper illustrated this negative relationship between pandemic prevention policies and regulations and economic development during the pandemic, which may remind governments of the importance of economic growth. We also would like to point out the significance of balancing government policies between controlling the infection and death rate of the infectious virus and the essential economic growth, using the examples and experiences of these four developed countries.

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