

# The Impact of Covid-19 on the Economy in Different Countries

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## ABSTRACT

Coronavirus disease, known as COVID-19, has triggered both medical crises and economic crises, impacting all the countries. However, different measures and strategies of dealing with Covid-19 cause distinct economic performance in each country. Therefore, we introduced 3 typical countries with different measures as our samples, finding out the difference between each strategy by comparing the macroeconomic indicator incorporating Gross Domestic Product (GDP), Consumer Price Index (CPI), and unemployment rate. Also, we analyzed the financial market performance, especially on the stock index liquidity, and researched the situation on the health workers, intending to find out the consequences to the economy under different measures.

**Keywords:** Covid-19, Economy, Influence

## 1. INTRODUCTION

Covid-19 is one of the most serious infectious diseases in the past century. The impact of Covid-19 on the world economy has exceeded the impact of the 2008 international financial crisis, affecting global economic development and security. According to the report, this outbreak is the first truly "global epidemic" in terms of transmission and response. The pandemic has affected nearly 7 billion people in more than 210 countries and regions in three months. The rapid spread of the epidemic is the result of cross-border movement in the era of globalization and the long incubation period of the virus, and a large number of asymptomatic infected persons. At the same time, globalization is also the basis for countries to jointly fight the epidemic. Information on the epidemic is exchanged simultaneously worldwide, and supplies are transferred quickly around the world. As a result, the global economy has been forced to stall.

The research shows that the pandemic has sharply reversed expectations of moderate world economic growth in early 2020. Since the outbreak of Covid-19, the employment situation in all countries has become more serious. A record 26.45 million Americans have applied for unemployment benefits since mid-March, wiping out all the job gains since the 2008 global financial crisis. Global stock markets and international oil markets have

been hit hard by the outbreak. Global investors took fright, causing turmoil in financial and capital markets.

The epidemic has caused huge losses to relevant industries and international trade. Tourism, catering, accommodation, other service industries, and many small and medium-sized enterprises have been hit hard. The global tourism industry lost at least \$22 billion. The global shipping industry is losing about \$350m a week. Global seaborne trade is likely to fall by more than 600m tonnes in 2020, the biggest drop in 35 years. The World Trade Organization predicts that global trade in goods could fall as much as 32 percent this year.

Apergis provided the first examination of the effects of Covid-19 on both the mean and the conditional volatility of the Chinese stock market returns, using a simple GARCH conditional volatility model, spanning the period 22 January 2020 to 30 April 2020. The analysis used two alternative proxies of the Covid-19 factor: i) total confirmed cases and ii) total daily deaths. The findings documented that Covid-19 had a significant negative impact on stock returns and their associated volatility across both alternative Covid-19 measures. Similar findings indicated that Covid-19 had a positive and statistically significant effect on the volatility of stock returns. The negative impact of Covid-19 on stock returns turned out to be more pronounced when the

pandemic measure was proxied by the total cases of deaths. Furthermore, the model that included the Covid-19 factor highlighted a better out-of-sample forecasting performance [1]. Hou et al. find that Chinese financial markets were the first to respond due to the initiation of the Covid-19 pandemic in Wuhan and the subsequent lockdowns of entire cities that quickly ensued. At this point, the wider international community understood the true nature of the issue to which it was confronted. Due to the elevated probability of recurrence of pandemics in the future due to the nature of the Covid-19 outbreak, it is important to understand the behavior of investors in the aftermath of such events. One particularly novel way to investigate such behavior is through the use of several related indices. We specifically identify such effects through the use of the indices relating directly to traditional influenza, coronavirus, and face masks, built upon corporate entities where their central business practice is in the R&D, production, sales, and distribution of goods and services related to each sector [2]. Xiong and Wu investigate what firm-specific characteristics affect the market reaction of listed companies to the Covid-19 pandemic. We find that firms in vulnerable industries with more fixed assets and a higher percentage of institutional investors have significantly lower CAR around the outbreak of Covid-19. Meanwhile, we also provide systematic evidence that the firms' scale, profitability, growth opportunity, and combined leverage positively impact CAR. Using the Chinese context, we first investigate market reaction to the Covid-19 pandemic and explore the role of corporate characteristics and governance systems in explaining the pandemic effects on CAR, which has several practical implications for the literature on extreme events and investor behavior [3].

He et al. use the synthetic index compilation method to compile industry-wide accounting indexes that capture the period before and after the Covid-19 outbreak. These indexes can measure the impact of the pandemic on the Chinese economy at the industry level. The study found that the industrial and commercial, life and technology, and cultural and social industries were significantly affected by the pandemic. While the basic industries were relatively stable, the pandemic greatly affected manufacturing, sports and entertainment, hotels, and catering and residential service industries (or sub-sectors). The manufacturing and sports and entry value creation index grew significantly, whereas the pandemic hit the hotels, catering, and residential services industries. At the same time, the pandemic increased the cost of mining and manufacturing, the financial cost of information technology, cultural and entertainment industries, and the inventory cost of mining and transportation industries. Further digging into the industry heterogeneity of the value creation index reveals that the pandemic has significantly affected the service industry. New infrastructure, Chinese patent medicine, and other

industries steadily improved, and the medical equipment and internet industries achieved great development [4]. Wójcik and Ioannou informed commentary on the possible impacts of the Covid-19 pandemic on financial markets, sectors, and centers. And the expectation of a slowdown in new economic regulations continued firm-level consolidation and the rise of financial service related to a business indicating the new financial technologies tend to accelerate, especially affecting retail banks. As the panic and partial recovery in financial markets in March and April 2020 highlighted the significance of the international monetary hierarchy, with the US\$ in the lead, a radical shift of financial power to Asia seems unlikely [5]. Kupferschmidt and Cohen analyzed a new report that confirms drops in the spread of Covid-19 in China and contends that the effective response there could inform other countries. But critics say the report failed to acknowledge the human rights costs of the most severe measures imposed by China's authoritarian government: massive lockdowns and electronic surveillance of millions of people [6].

Wang et al. found a study that explored people's compliance with recommended preventative measures during the early stages of the Covid-19 pandemic. An online survey was administered in June 2020 in the USA and Canada (N = 1,405). Regression analysis found that when controlling for other factors, age and political ideology were significant predictors of compliance with preventative measures [7]. Wang et al. found a study that explores how firms in China are innovating their marketing strategies by critically identifying the typology of firms' marketing innovations using two dimensions, namely, motivation for innovations and the level of collaborative innovations. This research also explores the influence of the external environment, internal advantages (e.g., dynamic capabilities and resource dependence), and characteristics of firms on Chinese firms' choice and implementation of marketing innovation strategies [8]. Desan and Orina found out the Covid-19 financial response brought a seismic shift in the allocation of authority between Congress, the Treasury, and the Federal Reserve. According to the classic division of labor, Congress claims the "power of the purse" or the constitutional authority to appropriate public funds; the Treasury holds responsibility for the spending and taxing that puts those orders into effect, and the Federal Reserve engages in money creation as part of its role making monetary policy and acting as lender of last resort. Drawing on that theory of separated powers, the essay reconstructs the traditional ways of thinking that distinguished money creation by the Fed from the congressional power of the purse. They then analyze the Covid-19 liquidity facilities at the heart of the Federal government's response to the current crisis. Established by the Fed, these facilities are shaped in non-transparent ways by the Treasury's authority to protect the Fed from losses [9]. Oliveria et al. analyzed the Covid-19

pandemic and what they have learned from the world experience of adopting preventive measures recommended by the World Health Organization and the epidemiological overview in the world, in Latin America, and Brazil. And found that the World Health Organization has pointed out that the path to reduce the speed of circulation of the virus, control and decrease the number of cases and deaths resulting from this pandemic can only be accomplished with the mass adoption of fundamental measures that include hand hygiene, alcohol gel use, cough etiquette, cleaning surfaces, avoiding agglomerations and social distancing. The epidemiological curve of the disease clearly shows the devastating proportions in Italy, Spain, and the United States, surpassing China in death records due to the delay in adopting the measures mentioned above. In Brazil, the rapid progression concerning the world and Latin America points to a significant increase in the number of cases [10].

This paper will introduce the measures taken to combat and prevent Covid-19 in the United States, China, and the UK and dissect those different measures. It analyzed the sequences in countries' economies, including performance in both macroeconomic and financial markets, and citizens' satisfaction toward the measures.

## **2. METHOD**

In the United States, people must wear face masks on public transportation and at transportation hubs, including at airports. Air passengers arriving in the United States from a foreign country must present a negative Covid-19 test before boarding their flights. The test must not be more than three days old. Alternatively, passengers may present documentation showing that they have recovered from Covid-19. CDC is issuing a new order temporarily halting evictions in counties with heightened levels of community transmission to respond to recent, unexpected developments in the trajectory of the Covid-19 pandemic, including the rise of the Delta variant. It is intended to target specific areas of the country where cases are rapidly increasing, which likely

would be exacerbated by mass evictions. Following an assessment of the current status of the Covid-19 public health emergency and the situation in congregate settings where noncitizens seeking to enter the United States are processed and held, CDC issues an order suspending the right to introduce certain noncitizens attempting to enter the U.S. from Canada or Mexico (regardless of country of origin) at or between ports of entry. In recognition of the Covid-19 mitigation measures available, the Order includes exceptions for Unaccompanied Children (UC), certain individuals on a case-by-case basis based on the totality of the circumstances, and individuals participating in certain programs approved by the U.S. Department of Homeland Security (DHS) that incorporate appropriate Covid-19 mitigation protocols as recommended by CDC. During Covid-19, CDC issued an order suspending the right to introduce certain noncitizens attempting to enter the U.S. from Canada or Mexico (regardless of country of origin) at or between ports of entry. CDC subsequently temporarily excepted unaccompanied non-citizen children from the order; the implementation of this order confirms the exception for unaccompanied non-citizen children.

In China., the government is adopting the measures of obliterating the Covid-19 cases. Once the case is reported, the authority will trace the source immediately and block the places where the infected case has been. If the situation gets worse, the city will be completely blocked by the government without hesitation. All the close contacts of the cases will not only be isolated in either the hotels or their home, and they need to take 3 to 4 nucleic acid tests to make sure the Covid-19 does not infect them. What's more, China also provides health codes in cities, a code in the smartphone indicating whether affected by Covid-19 or not. Most importantly, People must wear the mask and show the green code when traveling by public transportation, such as metros, buses, and trains. According to Chinese customs, all the people in the country must present the negative result of the nucleic acid test and stay at the fixed-point hotels for 14 days. And with more cases being reported, all the residents in the infected city have to take the nucleic acid test for several rounds (Fig1.).

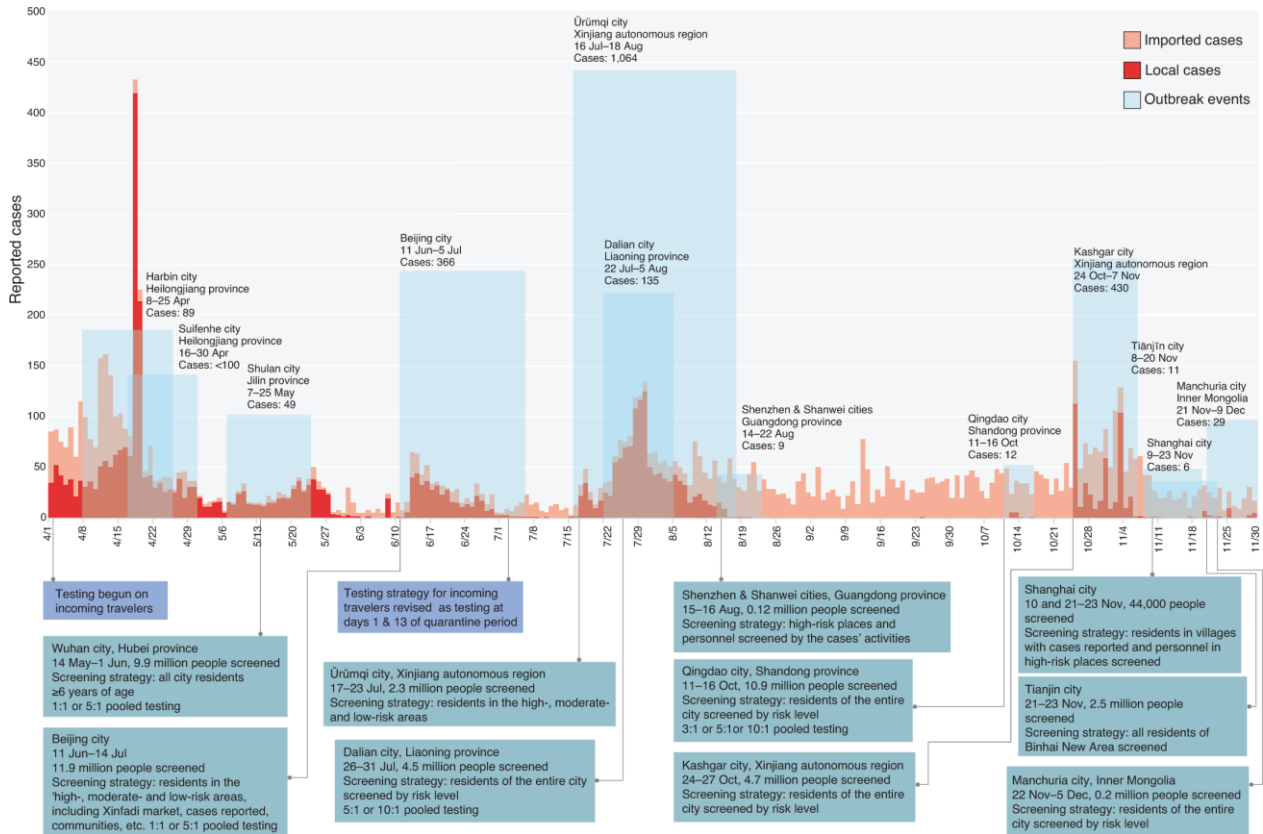


Figure 1. Local and imported Covid-19 cases from 1 April 2020 to 30 November 2020[11]

The United Kingdom divides England into "medium", "high", and "very high" risk areas. "Medium" risk areas will follow the current prevention and control measures, including the "six-person rule", that is, the maximum number of people gathering indoors or outdoors should not exceed six; Bars and restaurants are closed from 22:00 to 5:00 am. Increased prevention and control measures in "high" risk areas, including a ban on indoor gatherings; Minimize travel. Indoor and outdoor gatherings are banned in "very high" risk areas; Banning wedding receptions; Bars are prohibited from operating except those that serve alcoholic drinks as accompaniments to meals; Residents of such areas shall not stay overnight in other areas, and residents of other areas shall not stay overnight in such areas; More can be done with local consent, including closing gyms. Shops, schools, and colleges will remain open across England. Liverpool is the only area in England where the risk is currently "very high". The other three UK regions - Scotland, Wales and Northern Ireland - have taken their own measures. However, similar or even stricter measures have been implemented in those areas. And all bars and restaurants must be closed by 22:00 on Thursday. All employees work from home if possible; The army took to the streets to help police enforce quarantine measures; The mask mandate will be extended to retail, taxi,- and restaurant workers and customers; Customers of catering enterprises are prohibited from placing orders at the service desk, and only the waiter can place orders at the table. Weddings are limited to 15 people and

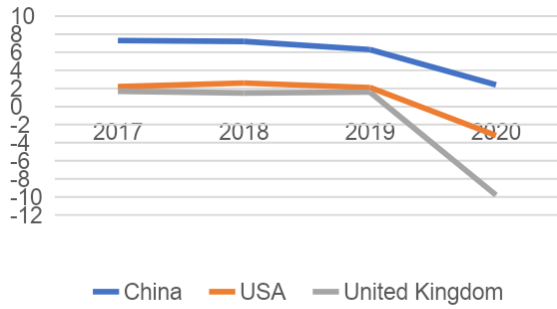
funerals to 30; The fine for first-time breaches of a quarantine order limiting six people to a party and a mask enforcement order has risen from £100 to £200.

### 3. COMPARISON OF ECONOMIC PERFORMANCE

#### 3.1. Macroeconomic Indicators

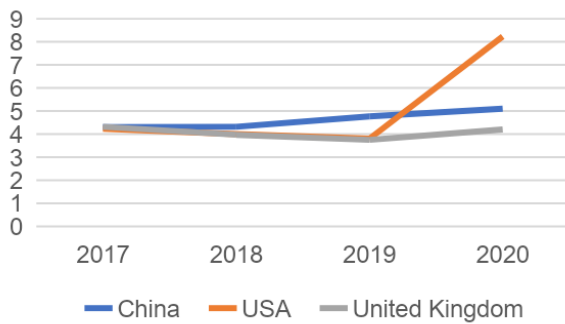
Without any doubt, Covid-19 brought a huge impact on the economy of countries, and the severe economic depression is happening in some parts of the world. People are afraid of losing their jobs, investors in the financial market are panicking about stocks. Nevertheless, under the distinct countermeasures, the performance of the macroeconomy is different in each country.

The GDP (Gross Domestic Product) is the most suitable indicator to measure the whole performance within a country, measuring the market value of goods and services produced in a specific period of time (Fig.2). To our astonishment, despite the Covid-19, China still obtained positive economic growth, while the economy in the US and UK collapsed about 5% and 10%, respectively.



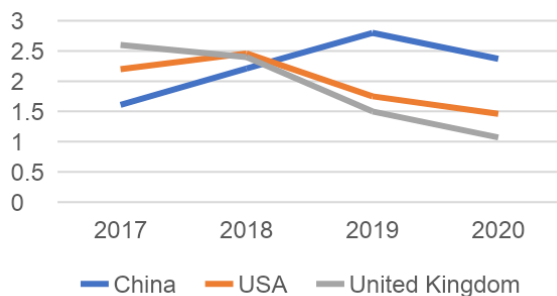
**Figure 2.** Economics growth: the rate of change of real GDP

Come to the unemployment rate, reflecting the in the ability of an economy to generate employment for those who want to work (Fig3.), in the USA, there was an incredible amount of people losing their jobs, but in China and UK, the unemployment rate was much more stable at approximately 5%, which was still healthy for the whole economic growth. So it is inevitable that Americans are facing the employment problem.



**Figure 3.** Economics growth: the unemployment rate

The CPI (Consumer Price Index), reflecting the inflation within the country (Fig4.), the CPI in each country did not severely be influenced by the Covid-19, all of which were still lower than the pre-COVID time. Therefore, although the CPI of China is slightly higher, China is still a developing country, compared with developed countries (US and UK), it is normal and acceptable.



**Figure 4.** Economics growth: the rate of change of consumer price index (CPI)

In general, all the countries are facing an economic problem. However, under the tough measures from

China's government, China still made an increase in the GDP without a low unemployment rate. But in the US and UK, **under** the relaxed measures from the governments, they experienced a recession in their GDP. And in the US, people are struggling with the unemployment problem.

### 3.2. Financial Market

First, the impact of Covid-19 on the stock market showed a significant leverage effect in both the U.S. and **China**. When the stock market volatility was high, Covid-19 imposed a stronger effect on the stock market volatility. This leverage effect was also identified in the impact of oil price volatility on stock market volatility.

In addition, Covid-19 imposed a stronger impact on the U.S. stock market during the early stage of the outbreak. Its impact exceeded the oil price volatility, implying **that** Covid-19 was the main factor causing the four U.S. stock markets meltdowns in March 2020. Second, Covid-19 imposed a stronger impact on the U.S. stock market during the early stage of the outbreak. Its impact exceeded the oil price volatility, implying that Covid-19 was the main factor causing the four U.S. stock market meltdowns in March 2020. However, with the ongoing epidemic, the U.S. stock market became insensitive to the impact of 30000-40000 new cases per day. In contrast, China remained highly sensitive to relatively small daily increases in new cases; however, the powerful epidemic control did not cause abnormal volatility on the stock market.

Last but not least, instead of a strict segregation policy, the U.S. government has implemented an extreme monetary policy, which effectively suppressed stock market volatility. However, the empirical results imply that only when the interest rate is at a high quantile, such an extreme interest rate policy can positively affect the stock market volatility in the long term. Combined with the realistic background that the interest rate of the U.S. may likely continue to be close to zero and that the daily new cases continue to remain high after May 2020, it will be difficult for the U.S. Federal Reserve to have enough monetary policy space to address a new potential financial market crash[12].

### 3.3. Situations of Health Workers in the UK during the Pandemic

London (CNN) 16,888 NHS staff and key staff have been tested for the coronavirus, and 5,733 (34%) have tested positive, according to figures released by the British government Monday. In 2020.10.6, Cineworld said in a statement that it would close its 127 theaters in the UK starting on the 8th. Starting from October 8th, theaters in the United Kingdom and the United States will be suspended. This decision will involve the jobs of its 45,000 employees worldwide. As soon as the news came

out, the company's stock price plummeted by 60%. Affected by the repeated impact of the new crown epidemic, this once very successful world's second-largest theater operator has so far been in debt of 8.2 billion U.S. dollars (approximately 55.676 billion yuan), and its share price has fallen by more than 82% this year. The closure will make its 45,000 employees worldwide face unemployment. Due to the huge impact of the epidemic, it had a pre-tax loss of US\$1.6 billion in the first half of this year. In the same period, its net debt rose to US\$8.2 billion, which is equivalent to nearly twice the total income of last year.

In mid-2020, due to poor performance in the fight against the epidemic, the support rate of British Prime Minister Boris Johnson has been declining. According to data from the British polling company YouGov, Johnson's approval rate has been cut from 66% in April to the current 34%.

In June, the vast majority of adults in the UK tested positive for new coronavirus antibodies, reaching 90%. Half of the 16-24-year-olds are also successfully vaccinated. But unexpectedly, after achieving herd immunity, the support rate for the government of the British people has dropped significantly. This dropped from 38% in June to the latest 24%. In addition, the number of people with unclear attitudes has recently risen significantly.

## **4. DISCUSSION**

### ***4.1. Economic Performance***

Overall, the US, UK, and China have encountered an economic recession during the Covid-19 pandemic. As a result, people were suffering from the inflation and unemployment brought by the pandemic. However, among those countries, the change in CPI of the US is only about 1.5%. Even though the US implemented the quantitative easing (QE) policy to cope with the recession of the economic performance, inflation was not that severe. This piece of data indicates that the US was spending the money to purchase the products from other countries to tackle the shortage of domestic products. Thus, other countries will purchase the product from the US in the coming future, causing a huge deficit for the US and bringing the inflation problem. Although China implemented its robust policy to handle the pandemic, China only took a few months to recover from the severe situation of the pandemic and started to resume work. Thus, China could still achieve a relatively healthy economic performance with stable unemployment and sustainable economic growth. In the UK, the authority implemented the herd immunity strategy without too

much intervention from society; hence, the UK did not make people face the unemployment problem at the expense of the severe recession of the CDP.

### ***4.2. Financial Market***

In terms of the actual number of new cases, the average number of new cases per day in China was 38.82, while that in the U.S. was 2657.13. In terms of the median, the gap between both countries in terms of daily new cases was even greater (36.01 in China and 25109.46 in the U.S.). This implies that although the epidemic first emerged in China, the U.S. maintained a high number of new cases for a longer period across the sample. Figure 1 (column 1, row 1) shows that in China, the outbreak began in January 2020 and already peaked at the end of February 2020. In response to the strict isolation policy, the number of new cases decreased rapidly from March and continued to show a low level of fluctuation. In contrast, the number of new cases in the U.S. has increased rapidly since March 2020 and maintained at a high level from May 2020 to the end of the sample period.

On March 11th, WHO identified the epidemic of New Coronavirus pneumonia as a global pandemic. It seems that people are beginning to realize the seriousness of things at this moment. Major companies in the United States have begun implementing business emergency plans to recommend or force employees to work at home. On Thursday, March 12, the S & P 500 fell 7%, triggering a circuit breaker and stopping trading for 15 minutes. The Dow Jones Industrial Average fell more than 10% worldwide, and even the bitcoin price fell by 45%. On Friday, Trump announced in a white house rose garden that the New Coronavirus pandemic was announced, and the United States entered a state of emergency.

The swing pricing model widely used in Luxembourg and some European countries aims to make large subscription and redemption bear the corresponding impact cost through the up and downswing of the fund's net value to avoid damaging the interests of the original holders. However, The United States has never used this tool, even under big pressure like this.

### ***4.3. Situations of Health Workers in the UK during the Pandemic***

Doctors and nurses have been emotionally and physically exhausted and despairing because she sees no way out of the epidemic. They try their best to save more lives. They always fight for the battle between life and death. It is also a battle against time in the hospital.

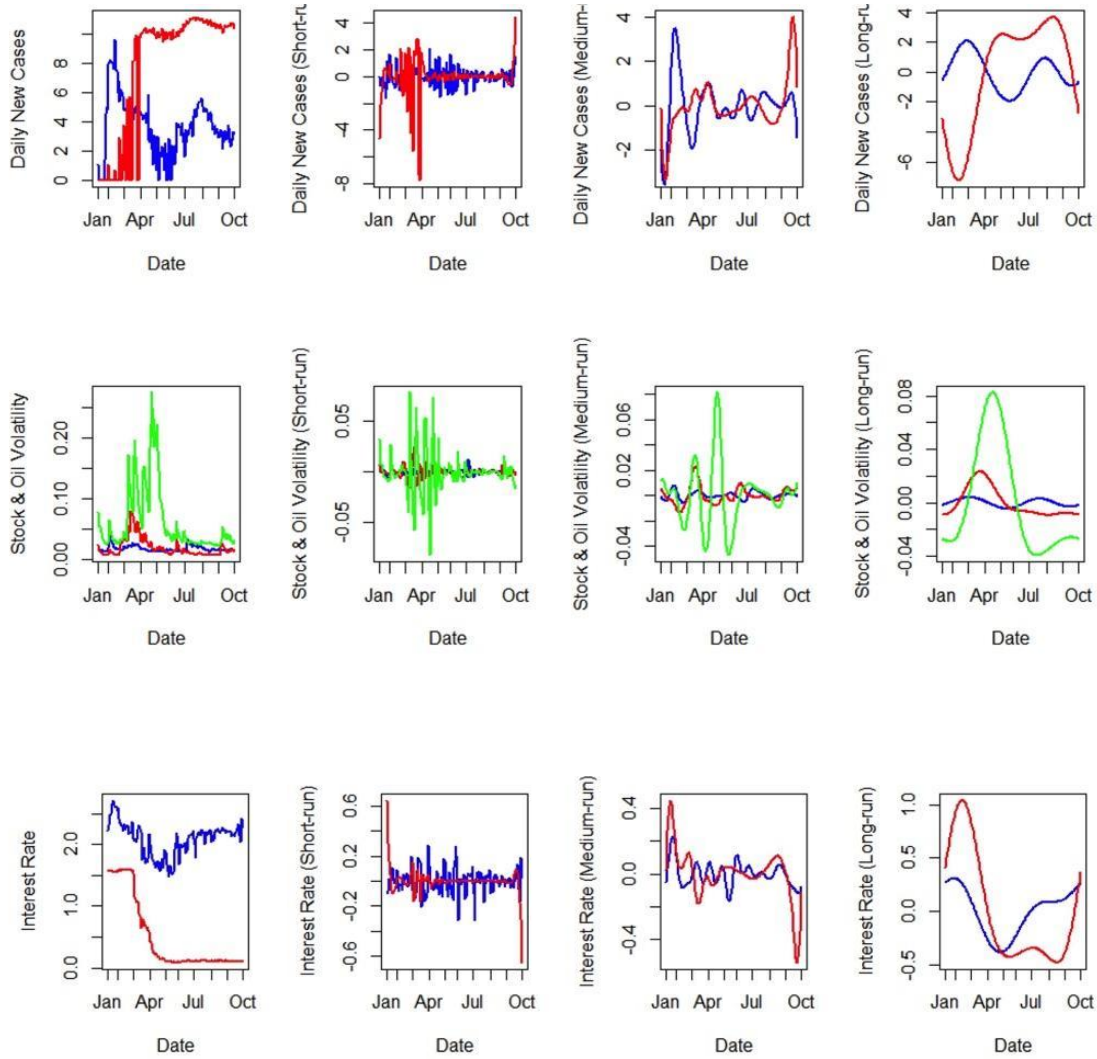


Figure 7. Series of variables and wavelet transforms

On the other hand, people are going about their lives as usual, not even seeing the impact of the pandemic. When you walk down the street, you can still count the number of people wearing masks outside. When you pass a coffee shop, you will find many people queuing up to buy drinks and food, greeting and chatting with acquaintances, and they do not take any protective measures. When you pass by the supermarket, you will see many people can't wait to take off their masks as soon as they get out of the supermarket. When you pass the park, you will find people talking and laughing calmly. While others take care to maintain social distance, children step in mud puddles, dig tree holes, pile leaves, climb trees, or chase pigeons and squirrels without protection. There are always long lines in front of the concession stand in the park. Adults and children can buy coffee or candy and enjoy it freely. On weekends, the park is more bustling, even surfing crowds.

Beneath all this calm and calm surface, the British government was unable to resolutely formulate and implement a continuous and effective anti-epidemic policy, leaving the public to make their judgments and

decisions on various issues and situations. As a result, it is the people themselves who bear the consequences. However, in the face of a global pandemic of historic proportions, there are limits to what individuals can do, and there may not be much that Britons can do beyond the usual "keep calm and carry on". The citizens want the government to make an effort and set more severe laws to solve the problem caused by Covid-19.

### 5. CONCLUSION

Even though Covid-19 has brought a huge impact on the economy worldwide, many countries made efforts to cope with the virus. As a result, the economy started to recover from the recession. The US implemented the quantitative easing (QE) policy to save the financial market; China adopted a strong policy to deal with the virus, and herd immunity did well in the UK. It is hard to determine which country did the best. However, each country implemented measures suitable for national conditions, bringing the economy back.

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