



Research on Relationship of British Pound Exchange Rate and the COVID-19 Pandemic Situation Based on Correlation Analysis by Excel

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Abstract

While there are some existing literatures exploring the relationship between the pandemic of COVID-19 and the currency market, there is few research explicitly studied how the epidemic affects the exchange rate of British pounds. This study uses quantitative research method to examine whether the trends of COVID-19 pandemic influence the fluctuations in the exchange rate of British pounds. In order to find whether there is relationship between the exchange rate of British pounds and the pandemic trends, correlation analysis by excel was used. The research focus is on the exchange rate of British pounds with 20 foreign currencies and daily infections, deaths and fully vaccinated cases. When infection and mortality rates rise in a country, the pound will depreciate in value due to a range of government measures such as household orders and closure of non-essential shops, while when vaccination and cure rates rise, the value of the pound will generally strengthen.

Keywords-*Covid-19; Exchange rate; British Pounds*

1. INTRODUCTION

Both the theoretical and practical workings of exchange rates reveals that nothing is absolute when it comes to them and that everything is dynamic and dependent on so many factors [2]. When COVID-19 hit the world in the early months of 2020, many people perceived that the situation would be short-term [1]. Nonetheless, it got worse as the virus got out of hand and spread across the world while killing so many people in the process, thus reaching the world pandemic level. Some countries were affected more than others due to the significant differences in factors like health, infrastructure, and preparedness [13]. The virus had some effects on the exchange rates as it did on so many other things [2]. Simply put, the countries that had many daily increases in the number of new COVID-19 cases suffered from weak currencies [1]. On the contrary, those that made incremental and steady steps in dealing with the virus witnessed an increase in strength for their currencies.

The purpose of this paper is to examine the relationship between the fluctuations of the British Pound exchange rate and the COVID-19 pandemic situation. Also, the paper analyses relevant literature in this regard and uses the appropriate methodology to come up with

the findings. An array of existing data and research have been evaluated to come up with conclusions.

2. LITERATURE REVIEW

According to Bruno et al. [2], a market-based exchange rate will easily change whenever the values of either component of the two currencies involved change. They suppose that the value of a currency is largely dependent on demand. This implies that the only way in which a currency can be valuable is when the demand for it is more than its supply. Likewise, a currency gets less valuable at any time when the demand for it is little as compared to the supply that is available [7]. Going by this logic, when there exists an increased demand for a currency the implication is that there is either an increased speculative or an increase in transaction demand for money. This transaction demand is very much related to the level of business activities that goes on in a country, employment levels and the gross domestic product [4]. With little business activity and low unemployment, the exchanges rate of different currencies is likely to be affected drastically [2]. This explains why the COVID-19 pandemic has so many negative effects on the exchange

rates of different currencies including that of the British Pound.

Ferrara and Yapi [10] express in a series of research that during periods of uncertainty such as COVID-19, the exchange rates of different currencies are bound to be severely affected. They illustrate this assertion using an example of how the British Pound has been fluctuating during the pandemic [8]. In the early months of 2020, the British Pound was very strong and traded very highly against other currencies such as the Euro. At the time, it recorded £1 for €1.188 [6]. This was however not to last. The British Pound stumbled down afterwards towards the end of March in 2020. This fluctuation was brought about by the measures that the government of the United Kingdom put to help combat the virus [11]. Some of these measures included a ban on international travels, an imposition of lockdown and the closure of non-essential businesses among many others [6]. These activities led to unemployment and little business activity in the country which inevitably led to the value of the British Pound declining [8]. Dillon [6] also shares these views in his analysis of the pandemic’s influence on the fluctuation of the British Pound.

In addition, the study by Feng et al. [9] also analyses the relationship between COVID-19, government interventions and exchange rate volatility using daily data on fortnightly confirmed COVID-19 cases measuring exchange rate volatility for 20 countries between 13 January and 21 July 2020, as well as data from the Government Response Index. They find that an increase in confirmed COVID-19 cases further exacerbates exchange rate volatility, while government restrictions on internal flows such as blockades and home orders serve to dampen exchange rate volatility. Njindan Iyke’s research [12] used Covid-19 to concur that disease outbreak could be a new channel to predict the return of exchange rate and also the volatility of exchange rate, in this research, total number of infection and total number of deaths from Covid-19 per million could fluctuate exchange rate and they are good measure to predict the return and volatility of exchange rate.

In light of these existing literature, the logical conclusion seems to be that there are various activities or

incidents such as pandemics like COVID-19 which have a significant impact on exchange rates. This results from the fact that these activities alter business operations widely in countries and hence translating into the decline of the currency values. In traditional global markets, the effects of a pandemic like COVID-19 were never experienced on such a wide scale [7]. For this reason, a research gap exists on the actual influence of such pandemics on exchange rates of the British Pound. This essay promises through its findings to fill this gap by drawing reflections from how the British Pound has been fluctuating amidst different COVID-19 trends such as infections, mortalities and vaccinations. The essay will also fill the gap by giving concluding remarks and recommendations on how states can strengthen their policies to safeguard their currencies against the effects of future pandemics.

3. METHODOLOGY

The study aims to find how the pandemic of COVID-19 affects the exchange rate of British pounds, which mainly focuses on three trends: infection, mortality and vaccination. Daily infection, mortality and vaccinated cases from 30/01/2020 to 11/06/2021 were captured from websites of gov.uk, the overall movement shown in Figure 1. Exchange rate of British pounds with 20 foreign currencies were obtained from Yahoo Finance, which including CNY, USD, NZD, SGD, PHP, CHF, RUB, KRW, JPY, HKD, EUR, CAD, AUD, SEK, MXN, INR, TRY, THB, BRL and SAR, are randomly chosen from commonly traded currencies and their overall patterns shown in Figure 2-4.

Microsoft Excel was used to do the correlation analysis between trends of pandemic and the exchange rate of British Pounds. The results are shown in Table 1 below. Within 20 exchange rates, 10 of them have negative correlation with the trend of daily new infection cases, 17 of them are negatively correlated with the trend of daily new death cases, while 19 of them are positive correlated with the trend of daily new fully vaccinated cases.

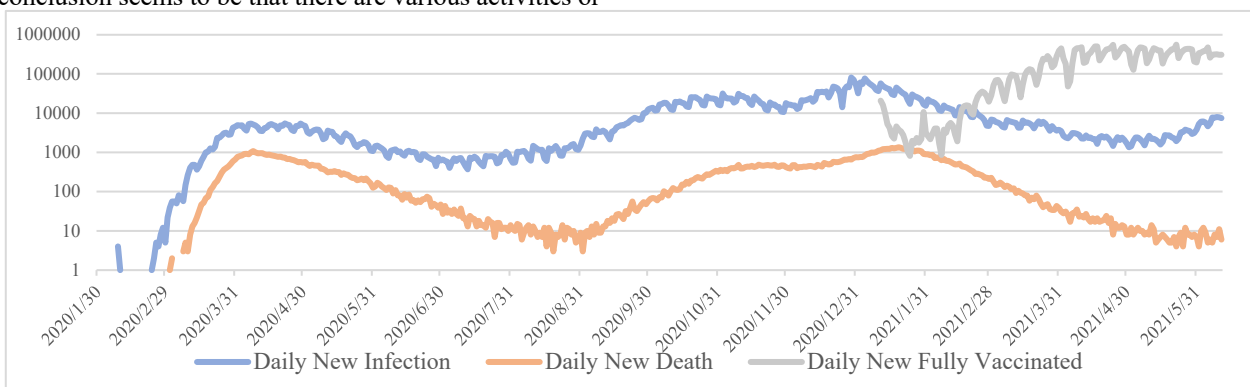


Figure 1. Movement of Daily New Infection, Death and Fully Vaccinated

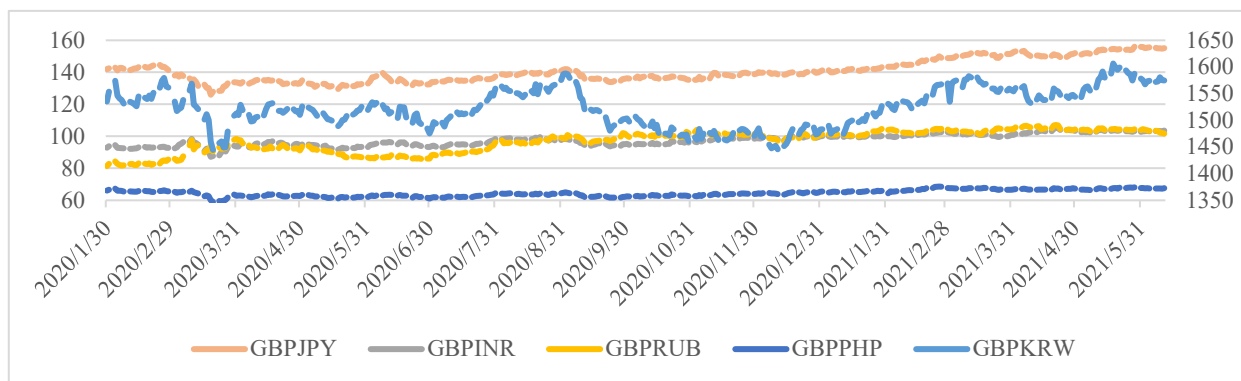


Figure 2. Movement of Exchange Rate (GBPJPY, GBPINR, GBPRUB, GBPPHP, GBPKRW)

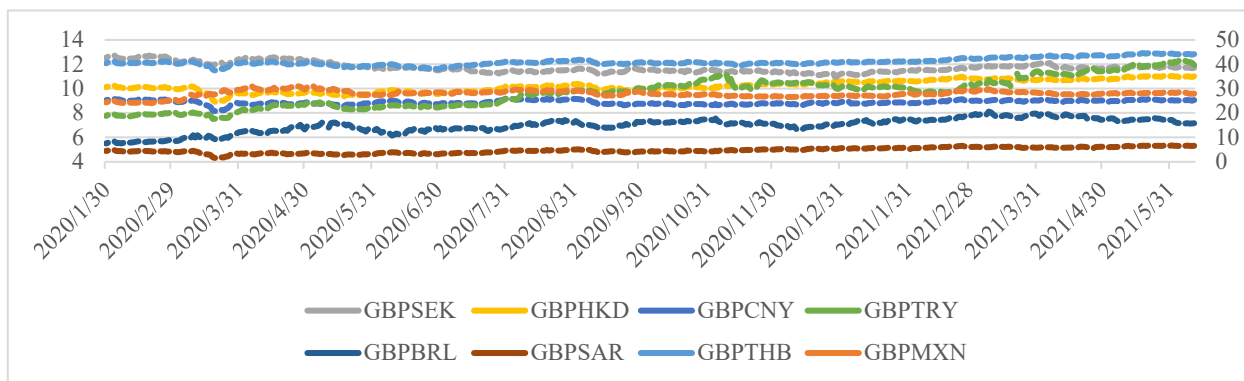


Figure 3. Movement of Exchange Rate (GBPSEK, GBPHKD, GBPCNY, GBPTRY, GBPTRL, GBPSAR, GBPTHB, GBPMXN)

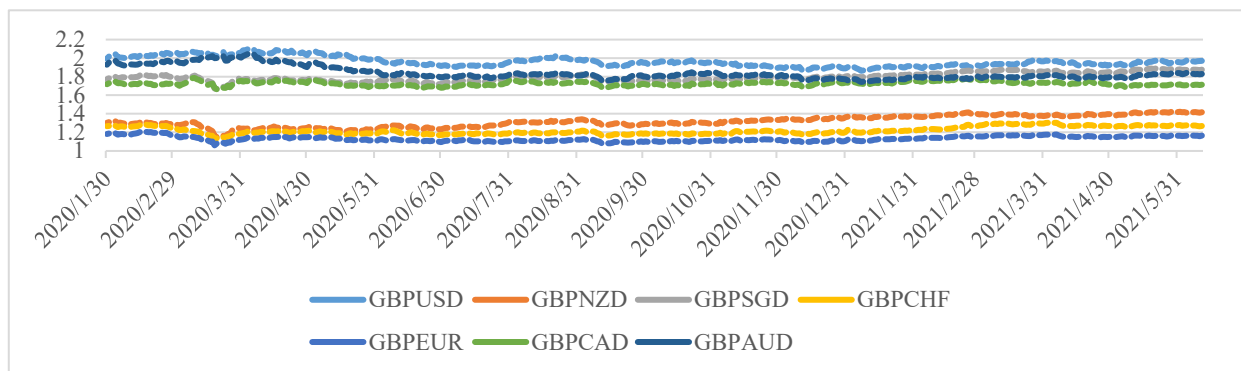


Figure 4. Movement of Exchange Rate (GBPUSD, GBPNZD, GBPSGD, GBPCHF, GBPEUR, GBPCAD, GBPAUD)

TABLE 1. RESULTS OF CORRELATION ANALYSIS

	Daily New Infection	Daily New Death	Daily New Fully Vaccinated
GBPCNY	-0.298206455	-0.335585542	0.567206458
GBPUSD	-0.511053164	-0.057990532	0.653406662
GBPNZD	0.256437953	-0.022146424	0.467664435
GBPSGD	0.010120272	-0.096929577	0.521828085
GBPPHP	0.036150367	-0.054077555	0.414729762
GBPCHF	-0.201617316	-0.170004842	0.52823575
GBPRUB	0.372321757	0.086531162	0.567579773
GBPKRW	-0.526331099	-0.431625848	0.511465373
GBPJPY	-0.030777986	-0.19793671	0.729476154

GBPHKD	0.247481339	-0.028589727	0.511496433
GBPEUR	-0.313316889	-0.053640784	0.499402729
GBPCAD	0.105286705	0.343498603	-0.683400794
GBPAUD	-0.39631233	0.090545626	0.579050276
GBPSEK	-0.537812963	-0.001588904	0.51960455
GBPMXN	-0.209356653	-0.051495246	0.001327296
GBPINR	0.219614512	-0.016538813	0.750703837
GBPTRY	0.290932443	-0.126732097	0.858085513
GBPTHB	-0.063887621	-0.195884226	0.838648393
GBPBRL	0.244959224	-0.04453679	0.035274772
GBPSAR	0.25404973	-0.017770413	0.467334581

4. FINDINGS

Through the above analysis, three findings came out of this research.

The first one is that exchange rates play a very crucial role in the maintenance of economic stability in countries. This came about in light of how the British Pound fluctuated as COVID-19 intensified in the United Kingdom and around the world during the early months of 2020 [6], and also been proved in Feng et al.'s research [9] with system GMM estimation analysis in relationship between 20 countries' exchange rate and the pandemic. The significance of exchange rate can be associated with several factors such as the flow of capital, the competitiveness of exports and trade balance among many others. These factors were adversely affected when the infection rates of COVID-19 increased in the UK. Due to the effects of the virus, capital flows reduced and the trade balance with many countries was significantly affected [3]. What ensued is that the British Pound kept fluctuating depending on how bad the pandemic was ravaging the country.

The second finding is that the British Pound stumbled whenever the mortality rates in the country were on the rise, was came out with the correlation analysis between the number of deaths and exchange rate movements, with 16 out of 20 exchange rates showing a negative correlation between the pound exchange rate and the number of deaths. Although only 10 exchange rates showed a negative correlation when the number of infections increased in the correlation analysis, the number of deaths also rose sharply when the infection rate rose at a very high rate. This led to a series of events that eventually weakened the Pound even further. The sequence of events included the closure of borders, the directives on social distancing, the closure of non-essential businesses, and the suspension of events such as sports [5]. These activities interfered with not just the flow of capital in the country but also the trade balance and business outputs. It was only natural for the Pound's value to reduce amidst all those factors. This effect was

also slightly felt when newer strains of the virus killed more people in the country [5]. The Pound fell by around 2 % just as the new variants began to emerge in the country because of the fatality and high mortality rates associated with them [5]. The newer variants that threatened the currency's value over the past months include the alpha and delta variants.

The last finding from the research is that as the vaccination rates rose over the past few months, the value of the British Pound rose against other currencies. Of the three factors, this can influence the most exchange rates, with 19 of the 20 exchange rates showing a positive correlation with an increase in the number of people vaccinated. This is similar to how the situation was a few months into the pandemic after the country had made some good progress in containing the spread of the virus [6]. When the vaccines for COVID-19 were ready, the United Kingdom was one of the few countries to start a mass immunisation programme [8]. The country procured millions of doses which they have used to successfully vaccinate over seventy million people across the country.

As the efforts were stepped up, the value of the British Pound strengthened and rose hence adding another dimension to the fluctuations that had earlier on characterised it. The cure rates have also played a key role in the rise of the Pound against other currencies. The rationale remains that as more people got vaccinated and cured of the virus, the key factors that influence exchange rates increased and that in turn positively lead to the rise of the Pound. A good example is that increased cure rates have led to the ease of restrictions and the improvements of businesses which have proved beneficial to the British Pound.

5. CONCLUSION

Exchange rates are very volatile. This research, through existing data and relevant literature, proved that factors which bring about uncertainties such as COVID-19 can easily lead to exchange rates fluctuating rapidly as has been witnessed with the British Pound. This volatility caught up with the Pound which has been rising and

falling at different points of the pandemic depending on the various responses from the UK government. High infection and mortality rates made the Pound to stumble whereas the high vaccination and cure rates have led to its strengthening in value.

The solution going forward for most countries such as the UK is that they should develop relevant monetary policies to help reduce the current high levels of exchange rates volatility in the stock markets. A good starting point would be to work on policies that promote financial stability. At the heart of such policies, inflation targeting should be embraced because of its significance in the mitigation of the impacts of the rates of exchange on inflation. Additionally, the accumulation of reserves should be introduced to assist in alleviating the financial constraints and shocks which arise as a result of the decline in the value of currency. This would help in minimising the volatility witnessed with the British Pound during the COVID-19 pandemic.

ACKNOWLEDGMENT

First of all, I am very grateful to my professor, for his careful guidance of my graduation thesis, which greatly improved my understanding of academic writing and taught me a lot of specific research skills; I am grateful to the teachers who have given me selfless help in my four years of development. Let me have a glimpse of the vastness of this ocean. Thanks to the classmates who have given me care and support in life, because of you, the university life is colorful. Thanks to my school, who has given me the top educational resources in China, which gives me the opportunity to go abroad, enjoy a more advanced lifestyle, given me a rational look at the world, given me a delicate sense.

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