The Impact of COVID-19 Epidemic on Exchange Rate

Changes in Arab

Republic of Egypt (An applied study)

By

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Abstract

Purpose– This study aims to measure the impact of Coronavirus Spread on official currency exchange rate. The first hypothesis states that daily Coronavirus cases don't effect on official currency exchange rate. The second hypothesis states that cumulative Coronavirus cases don't effect on official currency exchange rate.

Design/methodology/approach– The researchers will be relying on a combination of inductive and deductive approaches to carry out two types of study are as follows: **An Analytical study**: - through the analysis of books, periodicals, theses related to Coronavirus spread and its financial and economic effects. **An applied study**: - The study period has been applied on covid 19 cases in Egypt (daily and cumulative cases for the period from January 1, 2021 till December 31, 2021) relying on the Excel program to prepare data and using (Eviews 10) in order to make a statistical analysis for the applied study data at 95% confidence level.

The results of the statistical study to test the first hypothesis show that: there are positive and weak relationship between the daily Coronavirus cases and the official currency exchange rate. F-Test results indicates that the effect of the independent variable (daily Coronavirus cases) on the dependent variable (official currency exchange rate) is non-significant, because the level of significance=0.508 is greater than (.05 level of significance).According to the previously mentioned results the researcher accept the null hypothesis of the first hypothesis " there is no statistically significant relationship between daily Coronavirus cases and official currency exchange rate".

The results of the statistical study to test the second hypothesis show that: there are positive and strong relationship between the cumulative Coronavirus cases and the official currency exchange rate. There significant. This means that the higher cumulative Coronavirus cases, the higher currency exchange rate. F-Test results indicates that the effect of the independent variable (the cumulative Coronavirus cases) on the dependent variable (official currency exchange rate) is significant, because the level of significance = 0.000000 is less than (.05 level of significance).So we can accept the alternative hypothesis of the second hypothesis cumulative Coronavirus cases effect on official currency exchange rate.

Results indicate that currency exchange rate seems to be sensitive and more changeable to Coronavirus cumulative indicators than daily corona virus indicators.

Key Words: Official Exchange Rate, Daily Cases of Corona Virus, Cumulative Cases of Corona Virus

الملخص

الهدف– تهدف هذه الدراسة إلى قياس تأثير إنتشار فيروس كورونا على سعر الصرف الرسمي للعملة. تنص الفرضية الأولى على أن حالات الإصابة بفيروس كورونا اليومية لا تؤثر على سعر الصرف الرسمي للعملات. تنص الفرضية الثانية على أن حالات فيروس كورونا التراكمية لا تؤثر على سعر الصرف الرسمي للعملة.

التصميم / المنهجية – سيعتمد الباحثون على مجموعة من الأساليب الاستقرائية والاستنتاجية لإجراء نوعين من الدراسة وهما: **دراسة تحليلية:** – من خلال تحليل الكتب والدوريات والأطروحات المتعلقة بانتشار فيروس كورونا وآثارها المالية والاقتصادية. **دراسة تطبيقية:** – تم تطبيق فترة الدراسة على حالات كوفيد ١٩ في مصر (حالات يومية وتراكمية للفترة من ١ يناير ٢٠٢١ حتى ٣١ ديسمبر ٢٠٢١) والتغيرات اليومية لسعر الصرف الرسمي لنفس الفترة بالاعتماد على برنامج

Excel لإعداد البيانات وجعلها صالحة للتحليل واستخدام (Eviews V.10) لعمل تحليل إحصائي لبيانات الدراسة التطبيقية بمستوى ثقة ٩٥٪.

تظهر نتائج الدراسة الإحصائية لإختبار الفرض الاول: أن هناك علاقة إيجابية وضعيفة بين حالات الإصابة بفيروس كورونا اليومية وسعر صرف العملة, و تشير نتائج اختبار F إلى أن تأثير المتغير المستقل (حالات الإصابة بفيروس كورونا اليومية)على المتغير التابع (سعر صرف العملة) غير معنوي ، لأن مستوى المعنوية = ٠.٥٠٨ أكبر من مستوي معنوية ٠.٠٥ فلذلك تم رفض الفرض البديل و قبول فرض العدم للفرض الاول "لا توجد علاقة ذات دلالة إحصائية بين حالات الإصابة بفيروس كورونا اليومية وسعر الصرف الرسمي للعملات".

كما أظهرت نتائج الدراسة الإحصائية لإختبار الفرض الثاني: أن هناك علاقة إيجابية وقوية بين حالات الإصابة بفيروس كورونا التراكمية وسعر الصرف الرسمي للعملة.وهذا يعني أنه كلما ارتفعت حالات الإصابة بفيروس كورونا التراكمي ارتفع أيضا سعر الصرف الرسمي للعملة, و تشير نتائج اختبار F إلى أن تأثير المتغير المستقل (حالات الإصابة بفيروس كورونا التراكمية) على المتغير التابع (سعر الصرف الرسمي للعملة) معنوي ، لأن مستوى الدلالة = ٠,٠٠٠٠٠٠ أقل من (٠,٠٥ مستوى دلالة)، لذلك يمكننا قبول الفرضية البديلة للفرضية الثانية تؤثر حالات الإصابة بفيروس كورونا المتراكم على سعر الصرف الرسمي للعملة.

وبالتالي تشير النتائج إلى أن سعر صرف العملات يبدو أكثر تغيراً بالنسبة للمؤشرات التراكمية لفيروس كورونا أكثر من التغيرات الناتجة عن المؤشرات اليومية.

الكلمات المفتاحية:

Official exchange rate	سعر الصرف الرسمي
daily cases of corona virus	حالات الإصابة بفيروس كورونا اليومية
Cumulative cases of corona virus	حالات الإصابة بفيروس كورونا التراكمية

1. Introduction

The World Health Organization (WHO) has declared Covid-19 as a pandemic on March 9, 2020. The outbreak began in Wuhan, China in December 2019 and it is an infectious disease caused by a newly discovered disease kind of coronavirus. Covid-19 is currently pandemic occurring in many countries of the world (Utami& Fransiscus ,2022)

The world is currently facing accelerated developments related to the emerging Corona virus epidemic (Covid 19), and countries around the world are collectively seeking to take precautionary and preventative measures to limit the spread of the virus and mitigate its effects, and perhaps the most important of these measures to limit its spread is to avoid direct contact and convergence between humans to the greatest extent possible and quarantine applications, including an almost complete cessation of trade, banking and travel. These and other measures on their importance have impacted the business environment in all countries of the region, Which necessitated many professional organizations and international companies to measure and study the global financial impact of this virus on the economies of these countries.

Recently, unique events of its kind appeared among the countries of the world, beginning with the developed world passing through the developing countries and continuing to spread and spread among the rest of the world as a whole. The coronavirus epidemic called COVID-19 has disrupted the Chinese economy and is spreading worldwide. The evolution of the disease and its economic impact are very uncertain, making it difficult

now for policy makers to measure its effect on the continuity of firms.

Commercial and consequently investment worldwide, and it is the Republic of China, where a virus has emerged that has spread among the countries of the world and affected the economies of countries, beginning with global financial markets in all countries and the circulation of shares and documents and investment in the global stock exchange, and even to small projects with limited income.

Threats posed by the coronavirus epidemic do not stop. More countries have imposed travel bans on millions of people and more people in more locations are placed with quarantine measures. Businesses do business with revenue losses and disrupted supply chains. Disruption of global supply chains due to factory closures has already revealed the vulnerabilities of many organizations. The epidemic has also led to significant volatility financial and commodity markets around the world.

There are already signs that the virus has had a significant impact on the global economy. Various governments announced measures to provide financial and non-financial resources assistance to disrupted industrial sectors and affected companies.

Thus, Egyptian economic also show the increasing of currency exchange between Egyptian bound with US Dollar. As report by Egyptian Stock Exchange during outbreak of COVID-19 in Egypt on March 2020. Therefore, government should take a serious action in order to avoid the economic recession. Thus, it is important to investigate the impact of

COVID-19 into currency exchange rate between US dollar (USD) and Egyptian bound.

We need to invest much more in public health and development in the richest countries, but also and especially in the poorest countries. Unfortunately, politicians continue to ignore the scientific evidence of the role of public health in improving quality of life and as a driver of economic growth. (Alber, 2020, P.2)**Figures (1) and (2)** illustrate the developments of Coronavirus spread during the research period, as follows:
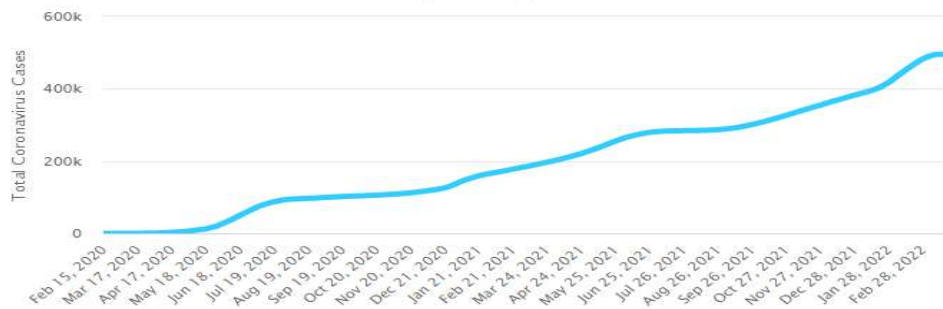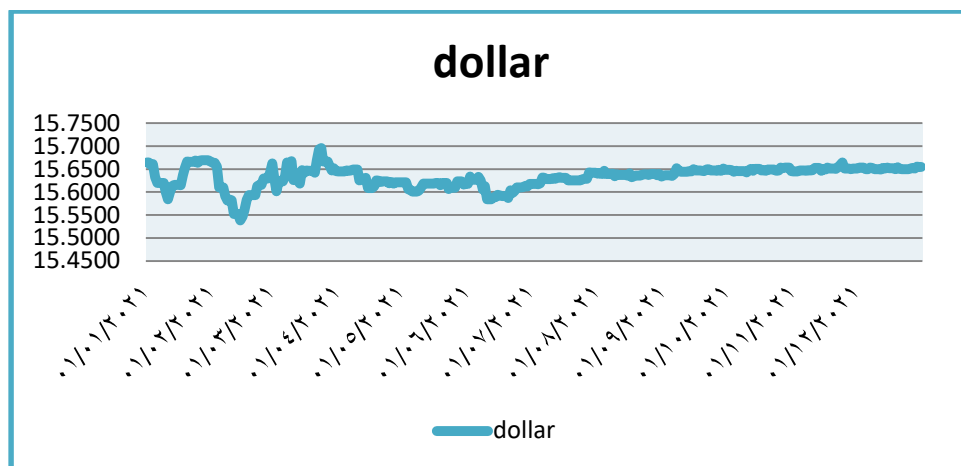
Figures (1)

Source:
https://www.worldometers.info/coronavirus/country/egypt/
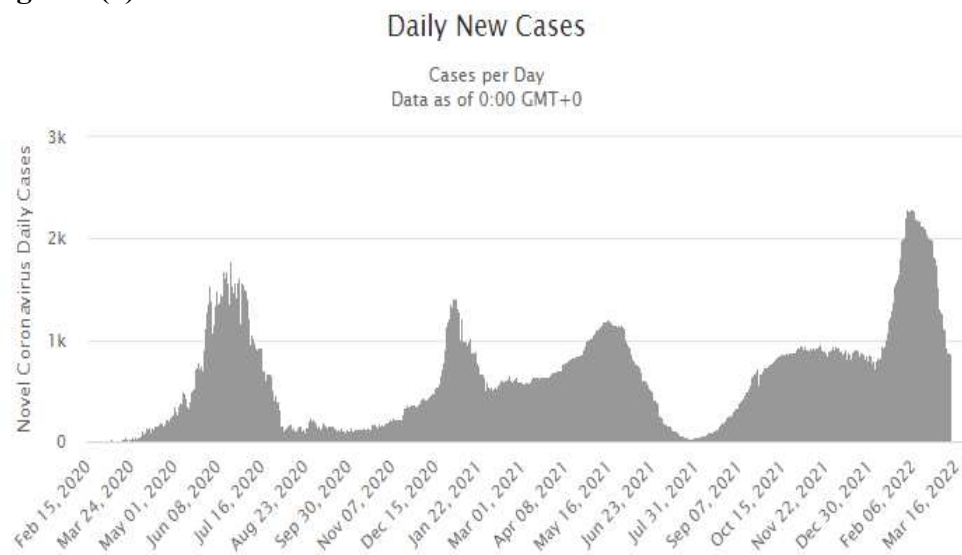
Figures (2)

Total Cases

(Linear Scale)

Source: https://www.worldometers.info/coronavirus/country/egypt/

Figures (3) currency exchange rate from 1/1/2021till 12/31/2021

Source: by researchers depending on data from the Central Bank of Egypt

2. The Literature Review

Alber, (2020): investigate the effects of Coronavirus spread on stock markets. Coronavirus spread has been measured by cumulative cases, new cases, cumulative deaths and new deaths. This has been applied on the worst 6 countries (according to number of cumulative cases), on daily basis over the period from

March 1, 2020 till April 10, 2020. Coronavirus spread has been measured by numbers per million of population, while stock market return is measured by Δ in stock market index. Results indicate that stock market return seems to be sensitive to Coronavirus cases more than deaths, and to Coronavirus cumulative indicators more than new ones. Besides, robustness check confirms the negative effect of Coronavirus spread on stock market return for China, France, Germany and Spain. However, these effects haven't been confirmed for Italy and United States.

Abd Elrhim & Elsayed, (2020): explore the effects of the spread of COVID-19 on global e-commerce companies, where the five largest e-commerce companies in the world were chosen in terms of revenues and market value, and they were as follows: American Amazon, Chinese Alibaba, Japanese Rakuten, German Zalando, United kingdom ASOS, has been Measuring the prevalence of corona virus by "cumulative infections" and "cumulative deaths" on a daily basis. Besides, it is measured through the values of both the "new corona virus cases" and the "new corona virus deaths" daily, the dependent variable reflects the response of the global e-commerce market to the impact of the spread of the corona virus and is measured by the daily returns of the shares of e-commerce companies to the global financial markets. This was applied on a daily basis from 15 March 2020 to 25 May 2020. The results of the descriptive analysis of the returns of the e-commerce companies showed that the companies achieve positive daily returns by calculating the average daily returns. The results of the aggregate model, according to the Beta Standardized Coefficients test, indicate the most important independent variables and an impact on the returns of shares of global

electronic trading companies, a variable (total deaths) was the degree of its impact in the first rank, in the second rank a variable (total cases) and in the third variable (new cases).

Elsayed and & Elrhim, (2020): examine the effects of COVID-19 spread on Indices Sectoral of The Egyptian Exchange .Coronavirus spread has been measured by "Coronavirus cases" and "Coronavirus deaths" on daily basis. Besides, it's measured by each of "new Coronavirus cases" and "new Coronavirus deaths", in terms of Egypt's population. The dependent variable reflects the response of the Egyptian sectorial indicators to the spread of the Corona virus and is measured by the returns of the daily sectorial indicators for the Egyptian stock market. This has been applied on daily basis over the period from March 1, 2020 till May 10, 2020. Results indicate that the return of the stock market sectors seems to be more sensitive to cumulative indicators of mortality than daily deaths from corona virus, and new cases more than cumulative cases of corona virus. The coefficient of determination between the independent variables and the variable belonging to 4 sectors is (IT, Media & Communication Services 0.393, Industrial Goods, Services and Automobiles 0.470, Health Care & Pharmaceuticals 0.327, Basic Resources 0.266).

Abu Bakar, N & Rosbi, and S, (2020): study the effect of Coronavirus diseases (COVID-19) on the equity market index and currency exchange rate. This pandemic creates unstable economic environment and unbalance financial situation in worldwide because many economic activities are ceased down. The important of this finding will help government body to understand the current condition during coronavirus disease 2019 (COVID-19) outbreak. In addition, the findings will assist policy makers to develop

solution in stabilizing economic situation in COVID-19 outbreak. In the same time, this study helps investors to monitor the equity market to develop investment portfolio to gain better return and reducing loss.

McKibbin, W& Fernando,R,(2020): The outbreak of coronavirus named COVID-19 has disrupted the Chinese economy and is spreading globally. The evolution of the disease and its economic impact is highly uncertain, which makes it difficult for policymakers to formulate an appropriate macroeconomic policy response. In order to better understand possible economic outcomes, this paper explores seven different scenarios of how COVID-19 might evolve in the coming year using a modeling technique developed by Lee and McKibbin (2003)and extended by McKibbin and Sidorenko (2006). It examines the impacts of different scenarios on macroeconomic outcomes and financial markets in a global hybrid DSGE/CGE general equilibrium model. The scenarios in this paper demonstrate that even a contained outbreak could significantly impact the global economy in the short run. These scenarios demonstrate the scale of costs that might be avoided by greater investment in public health systems in all economies but particularly in less developed economies where health care systems are less developed and population density is high.

Fang& Zhang (2021): In this study, they assume that the COVID-19 pandemic exerts a time-varying asymmetric impact on the RMB exchange rate. Based on the Taylor rule model, we look at the RMB exchange rate fluctuations around the COVID-19 outbreak. We find that the RMB rate rose steadily before the outbreak, but fluctuated during the pandemic. This shows that the

pandemic had a time-varying transitory impact on the RMB exchange rate.

Rakshit, B. and Neog, Y. (2021): The purpose of this paper is to investigate the effects of exchange rate volatility, oil price return and COVID-19 cases on the stock market returns and volatility for selected emerging market economies. Additionally, this study compares the market performance in the emerging economies during the COVID-19 pandemic with the pre-COVID and global financial crisis (GFC) period.

The authors apply the arbitrage pricing theory to model the risk-return relationship between the risk-based factors (exchange rate volatility and COVID-19 cases) and stock market returns. By applying the exponential generalized autoregressive conditional heteroskedasticity model, the study captures the asymmetric volatility spillover from the stock markets to foreign exchange markets and vice versa.

Findings reveal that exchange rate volatility exerts a negative and significant effect on the market returns in Brazil (BOVESPA), Chile (S&P CLX IPSA), India (SENSEX), Mexico (S&P BMV IPC) and Russia (MOEX) during the coronavirus pandemic. Regarding the effect of oil price returns, the authors find a positive relationship between oil price and stock market returns across all the economies in the study. The market returns of Russia, India, Brazil and Peru appeared more volatile during the pandemic than the GFC period.

Shaoling Li a, Yuwei Yan b (2021): The Corona Virus Disease 2019(COVID-19) has a dramatic effect on my country's market and financial system. Although China has controlled the

deterioration of the epidemic, this global epidemic will inevitably have an impact on the global economy including China. In order to study the shock effect of the COVID-19 on the market financial system, this paper builds a data model processing system based on the event analysis method, and analyzes the shock effect from three aspects of supply chain finance, financial securities, and corporate financial systems. Moreover, this paper uses crawler technology to obtain valid data from major websites, analyzes model data with mathematical statistics combined with event models, and outputs the results and compares them with the actual situation. Through data analysis, it can be seen that the model constructed in this paper can effectively reflect the shock effect of the COVID-19 on the market financial system. Finally, the comparison method is used to compare the research results with the actual situation. The results show that the two are basically the same. Therefore, it can be seen that the proposed research method has significant effects and has certain reference value for studying the shock effect of the epidemic on the financial system.

Holcman, J., & Prostejovská, Z. (2022): This article discusses the relationship between the residential housing price index and stock markets at the time of the coronavirus pandemic in 2020. The research focusesmainly on the real estate market in the Czech Republic and the evolution of the Prague Stock Exchange index the period from 2007 to the end of 2020 is monitored. The subject of the examination is not the evaluation of the severity or the type of crisis, but only the evolution of markets and their shocks. The house price index (HPI) and stock indices are used for consistent analysis. To find a broader context, the mortgage interest rate and the unemployment rate are used. Using

the correlation and analysis of implemented government measures, the basic conditions for the development of indices and measures are sought. Government measures are not only aimed at local conditions, but often also affect cooperation at the international level. The objective is to assess the degree of dependence of the evolution of the real estate and stock markets on the measures implemented to mitigate the effects of the crisis. The reason is also the fact that there are many common variables (negotiable, local and international investors, etc.).

Ofori-Boateng, at all (2022): The outbreak of the novel COVID-19 has been a thorn in the flesh of the world in its entirety, affecting many aspects of life including the stock market. This study, therefore, examined the impact of the outbreak on the stock returns of the Ghana Stock Exchange. The study utilized data from the All Share Prices of the Ghana stock exchange, commonly known as the Ghana stoke exchange composite index (GSECI) for analysis. The data covered the period before the outbreak of COVID-19 and during the outbreak. It was revealed that the Ghana stock exchange experienced better returns on the market before the outbreak of the virus. The outbreak of COVID-19 has led to wide variations in the market increasing the risk of investments. The exponential General Autoregressive Conditional Heteroscedasticity (EGARCH) (1, 1) model also reveals that the outbreak of COVID-19 has a significant negative effect on the returns in the market. The market in these periods of COVID-19 is highly volatile. It is recommended that investors should carefully consider risk mitigation strategies to enable them diversify their investments effectively and efficiently against the high risk associated with the market in this COVID-19 era.

The outbreak of COVID-19 is hence deduced to have a negative impact on the Ghana stock exchange. However, the knowledge of how the market has been affected by the disease, it is important that financial risk mitigation studies be undertaken. This goes beyond what this study has done. The study can further be expanded to include other important economic variables such as GDP, inflation, exchange rates and the likes in to the model.

After reviewing all previous studies researcher concluded that:-

-The scarcity of researches conducted in The Impact of COVID-19 Epidemic on Exchange Rate Changes in Arab Republic of Egypt (An applied study)

- Most studies have focused on economic and financial effects of Coronavirus spread in general without focusing on its effects on currency exchange rate in particular

3. Research problem and questions

The research problem can be summarized on the following questions: -

1- Does daily Coronavirus cases effect on official currency exchange rate?

2- Does cumulative Coronavirus cases effect on official currency exchange rate?

4. Research objective

The main objective of this study is to measure the effect of Coronavirus cases effect on official currency exchange rate.

5. Research hypotheses

From previous researches on Coronavirus effects, the study hypotheses are:-

First hypothesis: daily Coronavirus cases don't effect on official currency exchange rate.

Second hypothesis: cumulative Coronavirus cases don't effect on official currency exchange rate.

6. Research Model:

Source: by researchers

7. Research Methodology

The researcher will be relying on a combination of inductive and deductive approaches to carry out two types of study are as follows:

A- **An Analytical study**: - through the analysis of books, periodicals, theses related to Coronavirus spread.

B- **An applied study**: - The study period has been applied on covid 19 cases in Egypt (daily and cumulative cases for the period from January 1, 2021 till December 31, 2021) relying on the Excel program to prepare data and using (Eviews 10) :in order to make a statistical analysis for the applied study data.

8. Measuring Variables and Developing Hypotheses

Coronavirus spread has been measured by "Coronavirus cases on daily basis. Besides, it's measured by each of "daily" and "cumulative Coronavirus cases in terms of country population. The dependent variable reflects the official currency exchange rate response to Coronavirus .the following table represent research variables.
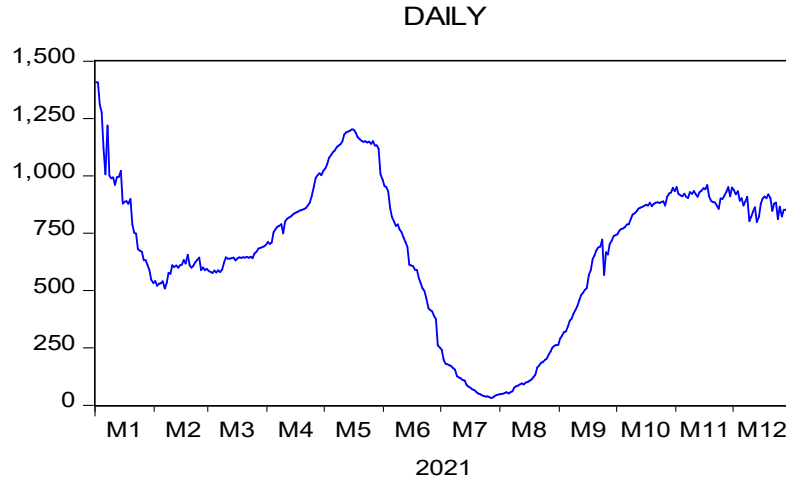
Table (1): Research variables

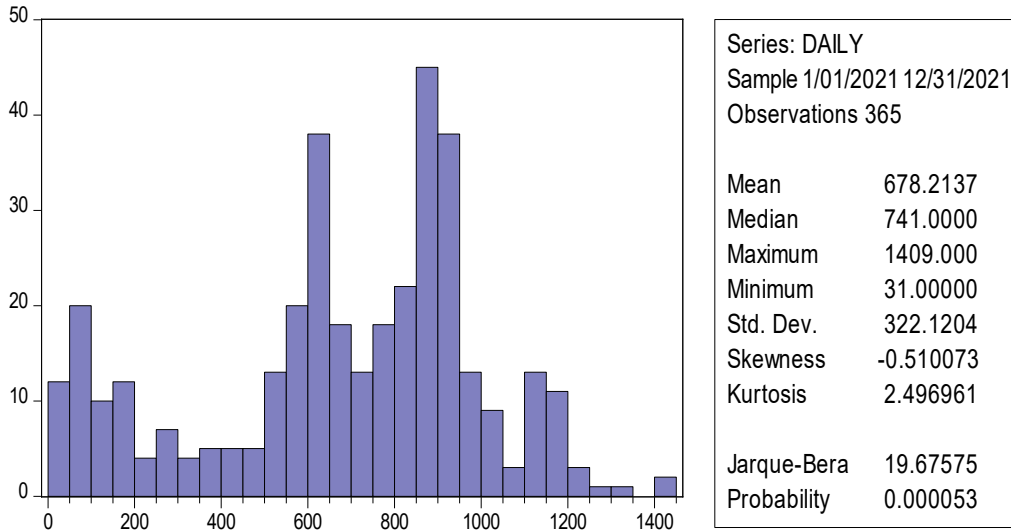| Variables	Calculation	Sig
Exchange Rate**	Daily Exchange Rate	ER
Daily Cases**	Daily Cases	DC
Cumulative Cases**	Cumulative Cases	CC

Source: by researchers

(A)Analyzing Characteristics of the Sample

the descriptive Statistics that provide information on the characteristics of data used in the analysis in order to determine the attributes(mean, Std. Dev. and Std. Error Mean). This is also evident from the following figures and tables as following:-

Descriptive statistics for the independent variables (Daily and Cumulative covid 19 Cases)
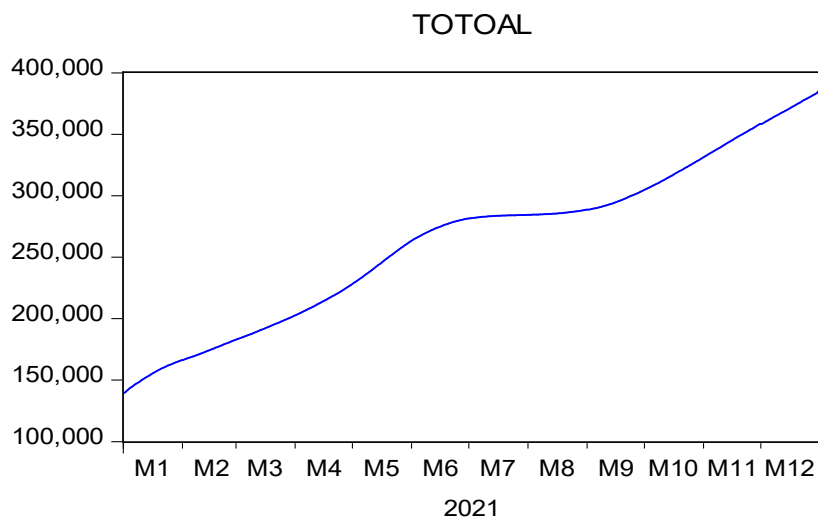
DAILY

Source: Data processing output using Eviews v.10

Series: DAILY	
Sample 1/01/2021 12/31/2021	
Observations 365	
Mean	678.2137
Median	741.0000
Maximum	1409.000
Minimum	31.00000
Std. Dev.	322.1204
Skewness	-0.510073
Kurtosis	2.496961
Jarque-Bera	19.67575
Probability	0.000053

Source: Data processing output using Eviews v.10

It is clear that the average number of daily injuries in the period from 1/1/2021 to 31/12/2021 is 678 with a median of 741, as the highest value reached during the period is 1409 and the lowest value reached during the period is 31 with a standard deviation of 322.1204 (Standard deviation (abbreviated as "Std Dev" or" SD") provides an indication of how far the

values vary or deviate from its means. SD can be used as an indicator that determine how spread out the values this will help to identify whether they are concentrated around the mean) and the skew coefficient is negative -0.510073 it indicates that the frequency distribution curve is skewed to the left with Kurtosis coefficient of 2.496961

TOTOAL

Source: Data processing output using Eviews v.10

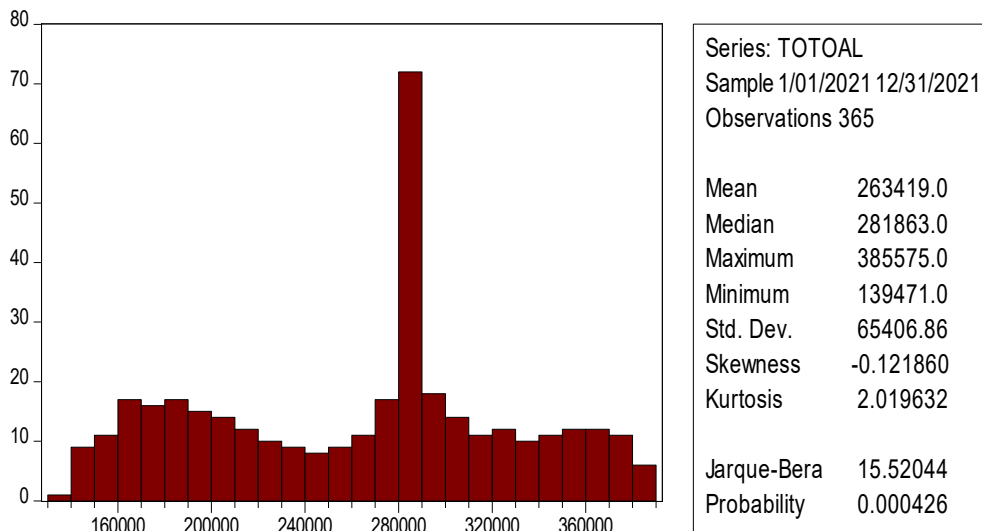| Series: TOTOAL	
Sample 1/01/2021 12/31/2021	
Observations	365
Mean	263419.0
Median	281863.0
Maximum	385575.0
Minimum	139471.0
Std. Dev.	65406.86
Skewness	-0.121860
Kurtosis	2.019632
Jarque-Bera	15.52044
Probability	0.000426

Source: Data processing output using Eviews v.10

It is clear that the average number of total injuries in the period from 1/1/2021 to 31/12/2021 is 263419 with a median of 281863, as the highest value it reached during the period is 385575 and the lowest value it reached during the period is 139,471 with a standard deviation of 65406.86 (Standard deviation (abbreviated as "Std Dev" or" SD") provides an indication of how far the values vary or deviate from its means. SD can be used as an indicator that determines how spread out the values this will help to identify whether they are concentrated around the mean) and the skew coefficient is negative -0.121860 it indicates that the frequency distribution curve is skewed to the left with Kurtosis coefficient of 2.019632.
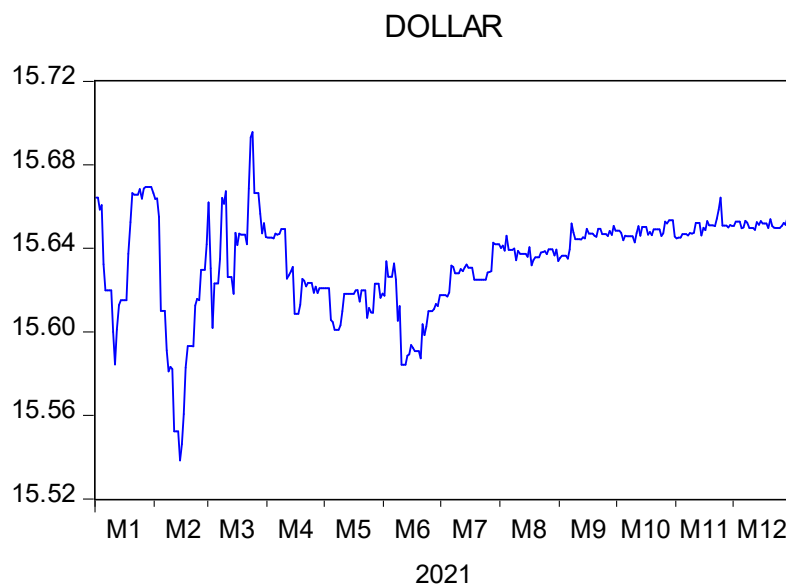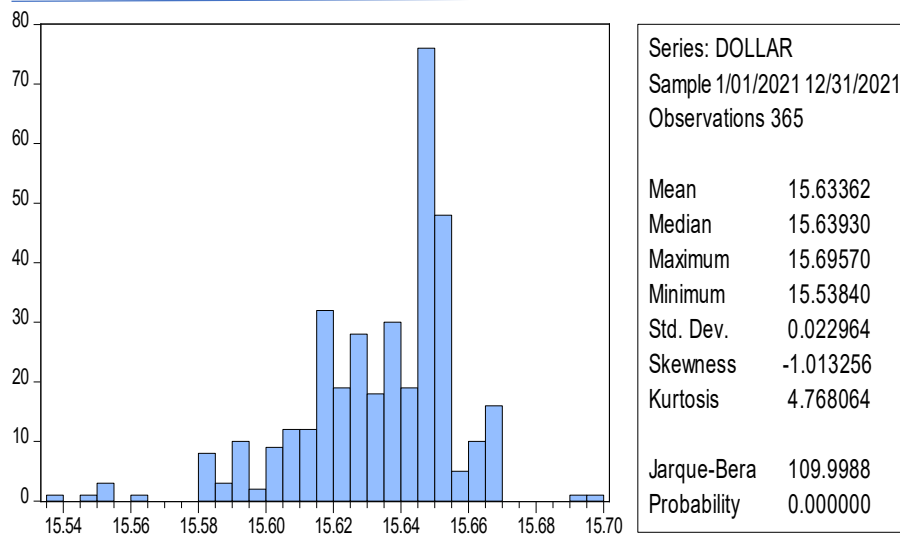
Descriptive statistics for the dependent variable (Exchange Rate, Dollar)

Source: Data processing output using Eviews v.10

Series: DOLLAR	
Sample 1/01/2021 12/31/2021	
Observations 365	
Mean	15.63362
Median	15.63930
Maximum	15.69570
Minimum	15.53840
Std. Dev.	0.022964
Skewness	-1.013256
Kurtosis	4.768064
Jarque-Bera	109.9988
Probability	0.000000

Source: Data processing output using Eviews v.10

It becomes clear that the average exchange rate in the period from 1/1/2021 to 12/31/2021 is 15.63362 with a median of 15.63930, as the highest value reached during the period is 15.69570 and the lowest value reached during the period is 15.53840 with a standard deviation of 0.022964 (Standard deviation (abbreviated as "Std Dev" or" SD") provides an indication of how far the values vary or deviate from its means. SD can be used as an indicator that determine how spread out the values this will help to identify whether they are concentrated around the mean) and the skew coefficient is negative -1.013256 the frequency distribution curve is skewed to the left with a subtraction coefficient of 4.768064

(B)Analysis and testing of data related to the first hypothesis

Ho: there is no statistically significant relationship between daily Coronavirus cases and official currency exchange rate

H1: there is statistically significant relationship between daily Coronavirus cases and official currency exchange rate

To test this hypotheses using simple linear regression

Table (2) Results of the simple linear regression analysis between (daily Coronavirus cases) and (official currency exchange rate)

Dependent Variable: DAILY				
Method: Least Squares				
Date: 03/28/22 Time: 20:47				
Sample: 1/01/2021 12/31/2021				
Included observations: 365				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6942.383	11503.19	-0.603518	0.5465
DOLLAR	487.4492	735.7974	0.662477	0.5081
R	.035			
R-squared	0.001208	Mean dependent var		678.2137
Adjusted R-squared	-0.001544	S.D. dependent var		322.1204
S.E. of regression	322.3690	Akaike info criterion		14.39474
Sum squared resid	37723607	Schwarz criterion		14.41610
Log likelihood	-2625.039	Hannan-Quinn criter.		14.40323
F-statistic	0.438876	Durbin-Watson stat		0.010245
Prob(F-statistic)	0.508086			

Source: Data processing output using Eviews v.10

The regression equation is as follows:

Y= -.6942.383+ 487.4492 X1.

Independent variables significance

Explanatory power of the model or the value of coefficient of determination **(R-squared 0.001208)** means that the independent variables included in the model (daily Coronavirus cases) explain almost (.12%) from the variance in the dependent variable (official currency exchange rate) .

The correlation coefficient =.035, indicating a weak positive relationship between the independent variable (daily Coronavirus cases) and the dependent variable (official currency exchange

rate).The higher daily Coronavirus cases, the higher the value of official currency exchange rate.

F-Test results indicates that the effect of the independent variable on the dependent variable is non-significant, because the level of significance= 0.508 is greater than (. 05 level of significance).

According to the previously mentioned results the researcher accept the null hypothesis " there is no statistically significant relationship between daily Coronavirus cases and official currency exchange rate" and the alternative hypothesis "there is statistically significant relationship between daily Coronavirus cases and official currency exchange rate" is rejected.

(C)Analysis and testing of data related to the second hypothesis

H_0: there is no statistically significant relationship between cumulative Coronavirus cases and official currency exchange rate

H_1: there is statistically significant relationship between cumulative Coronavirus cases and official currency exchange rate

To test this hypotheses using simple linear regression

Table (3) Results of the simple linear regression analysis between (cumulative Coronavirus cases) and (official currency exchange rate)

Dependent Variable: TOTOAL				
Method: Least Squares				
Date: 03/28/22 Time: 21:00				
Sample: 1/01/2021 12/31/2021				
Included observations: 365				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-13782397	2217828.	-6.214366	0.0000
DOLLAR	898436.5	141862.6	6.333146	0.0000

R	0.3154346			
R-squared	0.099499	Mean dependent var		263419.0
Adjusted R-squared	0.097018	S.D. dependent var		65406.86
S.E. of regression	62153.11	Akaike info criterion		24.91805
Sum squared resid	1.40E+12	Schwarz criterion		24.93942
Log likelihood	-4545.545	Hannan-Quinn criter.		24.92655
F-statistic	40.10874	Durbin-Watson stat		0.013524
Prob(F-statistic)	0.000000			

Source: Data processing output using Eviews v.10

The regression equation is as follows:

Y= -13782397+ 898436.5X1.

Independent variables significance

Explanatory power of the model or the value of coefficient of determination **(R-squared 0.099499)** means that the independent variables included in the model (cumulative Coronavirus cases) explain almost (9.9%) from the variance in the dependent variable (official currency exchange rate) .

The correlation coefficient =.31543, indicating a positive relationship between the independent variable (cumulative Coronavirus cases) and the dependent variable (official currency exchange rate).The higher cumulative Coronavirus cases, the higher the value of official currency exchange rate.

F-Test results indicates that the effect of the independent variable on the dependent variable is significant, because the level of significance= 0.000000 is less than (. 05 level of significance).

According to the previously mentioned results the researcher accept the alternative hypothesis " there is statistically significant relationship between cumulative Coronavirus cases and official currency exchange rate" and the null hypothesis " there is no

statistically significant relationship between cumulative Coronavirus cases and official currency exchange rate" is rejected.

(D)Summary of Hypothesis Tests:

- **Accepting the null hypothesis of the first hypothesis**" there is no statistically significant relationship between daily Coronavirus cases and official currency exchange rate".

- **Rejecting the alternative hypothesis of the first hypothesis**"there is statistically significant relationship between daily Coronavirus cases and official currency exchange rate"

- **Accepting the alternative hypothesis of the second hypothesis**" there is statistically significant relationship between cumulative Coronavirus cases and official currency exchange rate"

- **Rejecting the null hypothesis of the second hypothesis**" there is no statistically significant relationship between cumulative Coronavirus cases and official currency exchange rate"

9. Summary and Concluded Remarks

The applied study and its conclusions are consistent with the theoretical study that The COVID-19 Epidemic effect on Exchange Rate Changes in Arab Republic of Egypt

After discussion of the theoretical and applied aspects in this research, the researcher reached to important findings for both theoretical and practical fields to investigate the effects of Coronavirus spread on currency Exchange rate. Coronavirus spread has been measured by cumulative cases, daily cases. This has been applied on Egypt, on daily basis over the period from 1/1/2021 till 31/12/2021 .

Most of the previous studies deal with the economic effects of the COVID-19 epidemic, while this study studies its effects on

Exchange rate. Moreover, it considers all the signs of infection, whether cumulative or daily.

Results indicate that currency Exchange rate seems to be sensitive to Coronavirus cumulative indicators more than daily ones.

Accordingly to the previously mentioned results we reject the null hypothesis (H0): daily Coronavirus cases don't effect on currency exchange rate and accept the alternative hypothesis (H1): daily Coronavirus cases effect on currency exchange rate.

Accordingly to the previously mentioned results we reject the null hypothesis (H0): cumulative Coronavirus cases don't effect on currency exchange rate and accept the alternative hypothesis (H1): cumulative Coronavirus cases effect on currency exchange rate.

10. Recommendations

Based on the results of the study, the researcher suggests the following recommendations:-

1- Training programs should be design and implemented to qualify accountants on applying the digital transformation mechanisms and to keep up to deal with new developments and epidemics such as Covid 19 Pandemic.

2- Publishing new regulations and law to deal with Covid 19 Pandemic consequences

3- Using digital transformation mechanics to overcome the consequences of the Corona virus in institutions and their activities

4- Continuous revision of Mechanisms of digital transformation and their use in all corporate activities in light of epidemics.

5- Developing different digital transformation and Covid 19 Pandemic courses to include all items studied and discussed in this study.

6- Conducting more academic research on Covid 19 Pandemic and its effect on financial reports user's decisions.

11. Future studies and Orientations

Based on the results and recommendations of this study, the researcher suggests the following future studies:-

 1-Studying the relationship between the interest rate and the exchange rate in light of the Covid 19 epidemic

2- The effect of digital transformation on corporate activities in the era of epidemics

3- The effect of Covid 19 epidemic on the quality of disclosure in financial reports

4-Developing accounting and auditing standards for dealing with Covid 19 epidemic consequences   to enhance the quality of financial reporting and audit reporting

5- The effect of Covid 19 epidemic on small and medium-sized companies

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