

# **The impact of coronavirus on the stock markets: Evidence from China and Palestine**

أثر فايروس كورونا على الأسواق المالية : أدلة من الصين وفلسطين

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## **Abstract**

**Aim/purpose** – The aim of this research is to analyse the impact of COVID-19 cases and deaths on the return of stocks in the main indexes in China and Palestine.

**Design/methodology/approach** – Three econometric models used to predict the data for the growth in stocks return from main indexes in China since the first confirmed cases recorded in 22/01/2020 to 31/01/2021, and since the first confirmed cases recorded in 05/03/2020 to 31/01/2021 in Palestine.

**Findings** – The Outcomes revealed that there is no impact of growth in cases on stock market returns may be for reasons like governmental policies, the highly increase in the new cases in the period of research, and finally the increase of the returns in some sector like technology. Moreover, the research shows that there is no impact of growth in deaths on stock market returns because of that recorded as cases and it occurs several days after the test of PCR (covid-19) shows that the result is positive then it recorded as death.

**Research implications/limitations** – The main limitation of this research is that the statistics are small and experiments such as this require a sufficient number of observations and that certain variables do not occur on a daily basis, such as the interest rate.

**Originality/value/contribution** – This work offers a significant contribution in terms of subject matter, there is a lack of analysis that deals with COVID-19 and stock market returns, this research also provides most economic knowledge on the effect of covid-19 cases and death on stock returns, and also allows other researchers to write and look for other determinants and to create a comparative report.

**Keywords:** SSCE, SEZE, Stock return, Al-Quds index, Exchange rates, COVID-19, Macroeconomic, China, Palestine.

#### ملخص

#### الهدف/ الغرض

تهدف الدراسة إلى تحليل أثر حالات الإصابة والوفاة الناتجة عن جائحة كورونا على عوائد الاسهم في الاسواق المالية الرئيسية في كل من الصين وفلسطين.

#### التصميم/ المنهجية

تم استخدام 3 معادلات لقياس اثر النمو في الحالات والوفيات الناجمة عن كورونا على النمو في عوائد الاسهم، اثنتين منها تخص الاسواق المالية الرئيسية في الصين للفترة الممتدة من اول ظهور لحالة اصابة مؤكدة بالوباء اي بتاريخ 2020/01/22 الى تاريخ 2021/01/31 والمعادلة الاخيرة تخص السوق المالي الفلسطيني للفترة منذ اول حالة اصابة مؤكدة بالوباء اي 2020/03/05 الى 2021/01/31.

#### النتائج

اظهرت النتائج انه ليس هنالك اثر للزيادة في عدد الحالات المسجلة من فايروس كورونا على عوائد اسواق الاسهم في كل من الصين وفلسطين الامر الذي قد يكون بسبب الاجراءات الحكومية لتخفيف اثار الوباء و بسبب الزيادة الكبيرة في عدد الاصابات في فترة الدراسة، الزيادة في عوائد الاسهم لبعض القطاعات مثل قطاع التكنولوجيا. كما واطهرت النتائج ايضا ان ليس هنالك اثر

للنمو في اعداد الوفيات على عوائد اسوق الاسهم الامر الذي يعزى الى ان الوفيات هي كانت قد سجلت كحالات وتحولت الى وفيات بعد عدة ايام من اجراء فحص الكورونا واعلانها كحالة اصابة.

### محددات الدراسة

من اهم المحددات ان حجم البيانات هو قليل وأن مثل هذه التجارب تتطلب عددًا كافيًا من المشاهدات وأن بعض المتغيرات لا تتوفر بشكل يومي ، مثل معدل الفائدة.

### مساهمة الدراسة

يقدم هذا البحث مساهمة كبيرة من حيث الموضوع ، ويعد البحث الاول الذي الذي يتعامل مع اثر الحالات والوفيات المسجلة من وباء كورونا على عوائد سوق الأوراق المالية في فلسطين ، كما يوفر هذا البحث معظم المعرفة الاقتصادية حول تأثير حالات كوفيد -19 والوفاة على عوائد الاسهم ، كما يسمح للباحثين الآخرين بالكتابة والبحث عن محددات أخرى وإنشاء مقارنة مع النتائج.

الكلمات المفتاحية: مؤشر شنغهاي، مؤشر شننتن، مؤشر القدس، عوائد الاسهم، كورونا، الصين، فلسطين.

## 1. Introduction:

The stock exchange is the core of a network of exchanges where buyers and sellers of shares meet at an agreed price. Financial markets play a crucial role in the allocation of savings in developing and developed countries, contributing to the development of the country's economy and trade because of liberalized and globalized policies implemented by both advanced and emerging governments. The share market one of the most critical aspects of a free enterprise system, since it aims to control the resources of the shareholders of the firms in return for the shareholdings of the creditors. The stock market provides the company with the opportunity to collect income by trading the stock to the investor. (Rakhal, 2018). The stock market is influenced by many strongly interrelated economic, social, and political influences, so these factors influence each other in a very challenging way. This is also usually hard to define the

important variables in the stock market prices. In the last few centuries, capital market dynamics and macroeconomic indicators have become a fascinating understanding of the relationship among macroeconomic factors and the stock market in both advanced and developing countries; an outbreak may influence the stock market too. (Rad, 2011).

History attests to the existence of many diseases that caused a large number of deaths. The "plague outbreak" that killed 100 million people in the 13th century, the cholera epidemic in the early 19th century, the AIDS virus that emerged in Cameroon at the beginning of the nineteenth century, severe acute respiratory syndrome (SARS) in 2002–2003 in Canada and Asia, both Ebola and swine flu were also among these epidemics. Nowadays, the Corona epidemic is sweeping the world. (WHO, 2020).

The Chinese government has taken a variety of measures to avoid this epidemic, including locking up the Hubei Region, restricting people's travels and movements to get out of their homes, and socializing the use of masks. Flights and railway stations shall carry out body temp scans, safety statements, and data placards for the identification of virus carriers. The state also extended the New Year's vacation (Lunar) to February 10 and requested most of the places of work not to be opened until that deadline in 24 of 31 regions. Even so, it has expanded to 64 countries worldwide but has created global concerns that have led to economic slowdowns in different countries. (Nia, 2020). Economic slowdowns in China affect the main indicators which are Shanghai and Shenzhen Composite which witnessed a decrease of up to 8% and 9%, respectively, on February 3, 2020, The shock quickly spread across foreign capital markets. (Investing, 2020).

However, the returns of the stock markets may be affected by the number of new cases and the number of deaths and there may be other factors, but some researchers have tested the link between returns to financial markets and growth in the number of deaths and cases, and this research aims to study the effect of growth in the number of cases and growth in numbers of deaths due to the returns of main financial markets. Specifically, this paper aims to study the effect of growth in the number of cases and growth in the number of deaths impact on both the Shanghai and Shenzhen stock markets in China and Al-Quds index in Palestine.

The rest of this paper is structured as follows. Section 2 provides information on Coronavirus and their daily cases and deaths number in China and Palestine. Section 3 reviews previous theoretical and empirical studies that deal with the effect of a pandemic on stock markets. Section 4 provides the research methodology, including data, variables, and empirical models used to complete this study. Section 5 provides the analysis, results, and implications for the impact of cases and the death of COVID-19 on the main stock markets in China and Palestine. Lastly, section 6 concludes this study and provides policy guidelines and proposals for further research.

## **2. Coronavirus pandemic with numbers**

Coronavirus is a positive fragmented RNA virus in the group. Coronaviridae and Nidovirales arrangement, the majority of cases were infected after they were nearby the seafood market in Wuhan. This infection spreads to people from primates or many animals, it is known that side effects that appear on people such as bad cold, headache, cough, pain, fever, and cough up phlegm, sometimes blood, which lead to respiratory injury. The symptoms usually appear within 2-14 days, according to the study. (Huang et al, 2020). The development of

information demonstrated the likelihood of human-to-human transmission and demonstrated the possibility of spreading the Virus in between towns. COVID-19 was affected by SARS Virus, which is close to coronavirus, which is responsible for the Severe Acute Respiratory Syndrome (SARS) and East Asian Respiratory Syndrome (MERS). (Zhu et al, 2020). Some studies have identified that the SARS has a great affinity to infection of the respiratory receptors and is a possible future threat to international global health.

## **2.1. China**

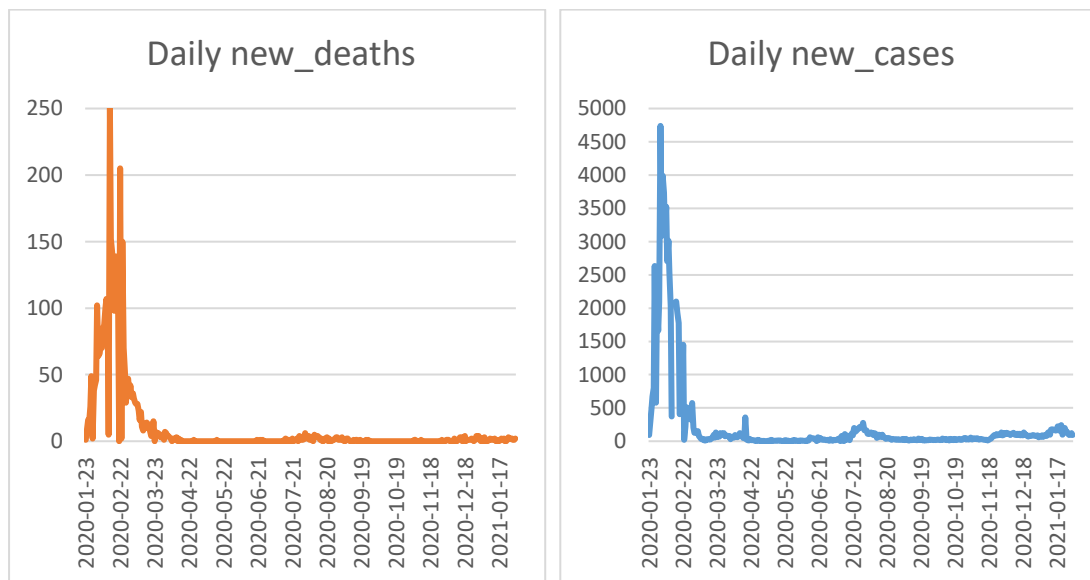
The epidemic starts in Wuhan on 27/12/2019, where it appeared that there were cases of strange disease The procedures were taken to close Hubei Province until it reached the closure of China as a whole on 31/12/2019 and due to the lack of daily statistics for the outcome of the injuries until 21/01/2020, the date on which the World Health Organization announced the first report clarifying the cases of the disease and the procedures of countries.

The number of cases before 21/01/2020 and from the beginning of the onset of the disease is 235 cases and 6 deaths, but after the beginning of the tracing of the epidemic, it is from the date of 21/01/2020 until the date of 31/01/2021 the most important numbers and statistics are as follows that the largest number of cases in one day was on 13/02/2020 with 15,141 injuries, but the largest number of deaths in one day was on 17/04/2020 where 1290 deaths were recorded. (WHO, 2020; Roser et al, 2020).

The period will be divided into quarters which the first was from the date of 21/01/2020 to the date of 21/04/2020, during which the total number of injuries was 83817 and 4636 deaths, and the second period was from the date of 22/04/2020 to 21/07/2020 which the total number

of injuries for the period is 1261 and the deaths were 12, while the third period extending from the date of 22/07/2020 until 21/10/2020, the number of injuries and deaths during it were 5336 and 93 respectively, injuries and death in the last period which extended from 22/10/2020 to 31/01/2021 were 9019 and 78, and by this given periods, the most number of injuries and deaths based on Monthly basis is in the first period and with a significant decrease in the second period. (Roser et al, 2020).

**Figure 1. Daily new cases and daily new deaths in china for the period from 21/01/2020 to 31/01/2021**



Source: World Health Organization publications and OurWorldInData.org.

## 2.2. Palestine

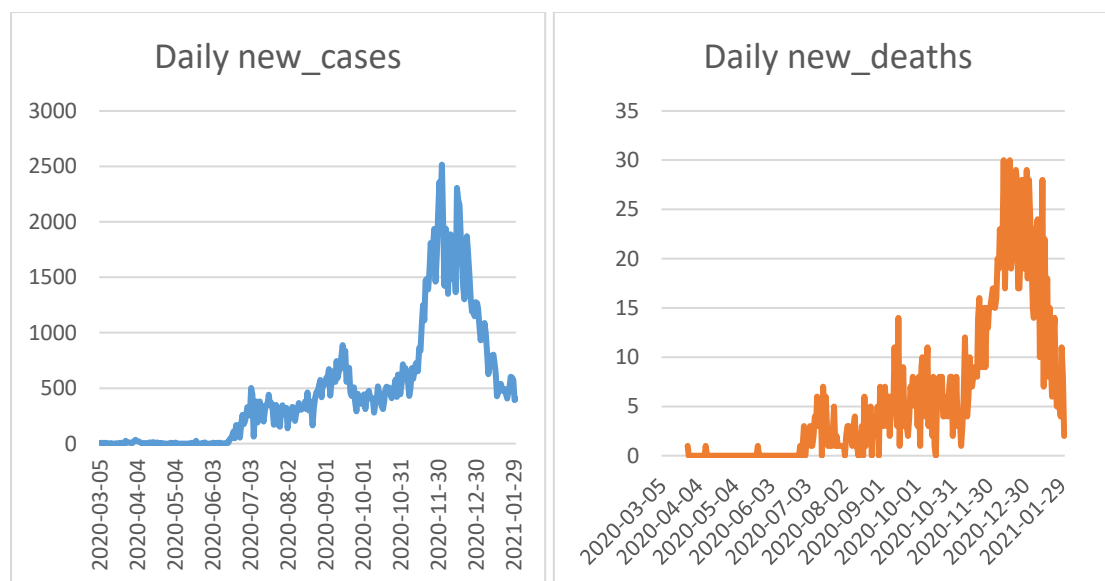
The epidemic starts in Bethlehem on 05/03/2020, where it appeared that there were cases of strange disease the procedures were taken to close Bethlehem Governorate until it reached the closure of all Palestinian Governorates as a whole on 07/03/2020.

From 05/03/2020 until the date of 31/01/2021, the most important numbers and statistics are as follows that the largest number of cases in one day was on 03/12/2020 with 2,516 injuries, but the largest number

of deaths in one day was on 17/12/2020 where 30 deaths were recorded. (WHO, 2020).

The period will be divided into quarters which the first was from the date of 05/03/2020 to the date of 04/06/2020, during which the total number of injuries was 464 and 3 deaths, and the second period was from the date of 05/06/2020 to 04/09/2020 which the total number of injuries for the period is 24685 and the deaths were 170, while the third period extending from the date of 05/09/2020 until 31/01/2021, the number of injuries and deaths during it were 133820 and 1663 respectively. (WHO, 2020).

**Figure 2. Daily new cases and daily new deaths in Palestine for the period from 21/01/2020 to 31/01/2021**



Source: World Health Organization publications and OurWorldInData.org.

## Literature Review

To analyze, Connections among both capital market vs the diverse economy facets. To make things easier to understand the dynamics of the financial market, the determinants need to be understood.



Accordingly, many papers discovered key macro-economic indicators possibly move share market and then take effect of reaction of the stock market returns to extreme events, crises, and pandemics. The literature is arranged first with studies that identified key macro-economic factors potentially moving the stock market, second, the studies that investigated the reaction of the share prices to extreme events and the crisis, finally the researches that investigate the stock market gains to COVID-19 outbreak all are listed in this part of the research.

First, studies that identified key macro-economic factors potentially moving the stock market like, Jeffus (2004) examines the link among the Foreign Direct Investment and the share market in 4 countries that are in Latin America. The researcher discovers that the development of the FDI and the stock market are positive and significantly correlated. Furthermore, its findings indicate that FDI is an indicator of the performance of the stock market. He claims that as companies reach a new market, they can aim to create new funds in the national stock exchange. This would boost the national share market. Equally, Malik & Amjad (2013) are investigating the effect of Foreign Direct Investment on the growth of the financial markets in Pakistan throughout the time frame 1985-2011, either in the share market index and in the industry, researchers considered a good and meaningful link between them.

Dornbusch & Fisher (1980) demonstrate that changes in exchange rates might affect changes in the share market. Through their "flow-oriented" models of the determinants of the rate of exchange, they demonstrate how the transfer system acts from the rate of exchange to

the financial market. Fluctuations of the currency alter the external competition and trading balance of nations within those models. As a result, the actual output of countries would be impacted, which in turn would then affect the current and estimated future cash inflow of businesses and their stock values. Consequently, currency depreciation (appreciation) may be positive (negative) Influence on stock markets. Phylaktis & Ravazzolo (2005) are investigating the relationship among share prices and exchange rates in the areas of Asia–Pacific. they finding that share prices and exchange rates are favorably linked. As far as country–specific researches are concerned, Wu (2000) indicates that Singapore's appreciation of that currency with us dollar as well as Malaysian ringgit, and its decline versus the Japanese and Indonesian currencies, have contributed to the long–term strengthening of its currency with US dollar and Malaysian currency, raise in share price mostly during the time interval under his research paper.

Rajan & Zingales (2003) show that openness in trading does have an upward effect on growth of stock markets. That is why openness in trading removes opportunities for existing financial intermediaries or pressure groups to slow down the growth of capital markets to limit access and competitiveness. As a consequence of that, free trade helps to accelerate investment, credit growth, and thus to facilitate the efficiency of the stock market.

Boyd et al. (2001) analyze scientifically the relation among inflation and the growth of the share market as a function of the capital ratio of the stock exchange, the gross volume trading ratio, the turnover ratio, and the

calculation of the volatility of the returns. We consider that inflation is adversely and substantially related to all of these stock market indicators. They also examine that the link is strongly non-linear with all of these interactions, excluding the association around both share market fluctuations and inflation. Barnes et al. (1999) analyses the connection among inflation and return on capital. These studies typically show that the return on capital to inflation depends on the nature of inflation. In a significantly lower inflationary climate, the relationship among inflation and actual stock returns is negative. However, in high inflationary conditions, stock returns lead favorably to inflation adjustments.

Cooley & Smith (1992) said the interest rates level influence the life of stock markets for intrinsic purposes, even though the development is less expensive. Such a situation happens when, in the lack of capital markets, the actual interest rate is smaller than the growth rate of the economy. If interest rates were so small, there would be no opportunities for agents to specialize, contributing to the disappearance of future lenders by skilled businessmen. Around the same period, low-interest rates offer opportunities for future borrowers to lend individually. This results in an internally consistent circumstance where there is little need for and availability of commodities offered by financial markets. Mok (1993) finds that growth in the interest rate decreases the discounted value of potential drawings earnings that therefore minimizes share price. Besides, high-interest rates will minimize investors' tendency to borrow and invest in the equity market. Besides, it reduces the expense of doing enterprise by raising the cost of borrowing. Put differently, a decrease in interest rates

results in a reduction opportunity for borrowing costs. In addition, it increases demand, stock values, and other economic development.

Second, the studies that investigated the reaction of the stock market returns to extreme events, crises, and other pandemics. Gangopadhyay et.al. (2010) analyzed stock price response, and Stock value behavior across hurricane Katrina for insurance companies by using the dummy variable of premiums written in the affected states and included also the size and market valuation to control their effect on stock return, the result shows that Insurer stock prices responded negatively to hurricane Katrina. Becchetti & Ciciretti (2011) discussed the stock market response to the 2007–2009 banking crisis using an event study approach; we find that investors rationally attribute more value to the information on each rating domain that used in the study. Kowalewsky & Spiewanowski (2020) looked at how the stock market responded to mining crises; the result shows that the financial damage of the company is directly linked to the severity of the incident. Nippani & Washer (2004). Examine the direct effect of SARS on the financial markets of the impacted nations (China, Canada, Hong Kong, the Philippines, Indonesia, Thailand, Singapore, and Vietnam). The main stock indexes in all these areas since the SARS outbreak is similar to the non–SARS era with the S&P 1200 Global Index, the rumble proves that SARS had a very little negative impact on the stock markets of the affected nations, but only China and Vietnam have a negative significant relationship.

Finally, with the researches that investigating the stock returns affect by COVID–19 outbreak. We are contributing to the rapid development research reviewing the influence of COVID–19 on capital markets. For example, Baker et al. (2020) uses a text analysis of news references and

discovers that the COVID-19 outbreak has resulted in significant levels of stock market volatility across all the latest infections, such as the Spanish Flu. Alfaro et al. (2020) use relevant information to identify that the stock value dropped in Hong Kong during the SARS as well as United States outbreaks States during the epidemic of COVID-19, this study indicates that day-to-day change is occurring in the assumptions of basic models of diseases. Zhang et.al. (2020) found that COVID-19 has contributed to an increase in global financial market risk that leads to damage to the market and led markets to become extremely volatile and unstable. Al-Awadhi et al. (2020) review firm-level data from China and analyses the earlier start effects of the COVID-19 epidemic on stock prices in china, the results show that both the frequent increase in overall reported cases and overall cases of death incurred by COVID-19 have major adverse impacts on market returns for all businesses. Baig et al. (2020) that explores the effect of the COVID-19 pandemic on the microstructure of US stock markets, they attempt to illustrate the complexities of liquidity and volatility across indexes that reflect several aspects of the outbreak, studies indicate that rises in cases and deaths due to COVID-19 are associated with a statistically significant rise in market liquidity and volatility. Similarly, decreasing viewpoint and the implementation of prohibitions and shutdowns relate to a weakening in the liquidity and stability of markets.

Zeren & Hizarci (2020) analyzed the potential impact of the Coronavirus outbreak on the capital markets. Using daily data between 23 January 2020 and 13 March 2020, the result shows that there is a long-term negative relationship with Covid-19 and KOSPI, SSE, and IBEX35 and there is no relationship is found between total daily case and FTSE, CAC40, MIB, and DAX30. Similar, Ashraf (2020) discuss the reaction of the financial markets to the COVID-19 pandemic, using daily

COVID-19 reported cases, mortality, and share market returns data for 64 countries during the period January 22, 2020, to April 17, 2020, and they found that stock indexes react adversely to the rise of COVID-19 reported cases, noticed that the capital markets responded more constructively to the increase in the number of reported cases relative to the increase in the number of deaths.

Extending this discussion, we look at how stock market gains have reacted. In other words, we will look at the effect of COVID-19 and key macroeconomics factors on big stock indexes in china.

## **4. Methodology**

This section of the research deals with the data gathering process, sample style, research model, variable estimation, and analysis tools.

### **4.1. Data**

The data of this research contains a time series data from the first confirmed cases that is from January 22, 2020, to January 31, 2020 for China and from March 05, 2020, to January 31, 2020 for Palestine. Data for the number of confirmed cases and deaths of COVID-19 gathered from the World health organization publication and the website OurWorldInData.org. January 22, 2020, and ends on January 31, 2020. Data on the daily share market returns for Shanghai Composite (SSEC), Shenzhen indexes SZSE, Al-Quds Index AQIN, and the exchange rate of USD/ YAN and USD/ ILS downloaded from the website [www.investing.com](http://www.investing.com) across the same time interval. We used several filters

to filter the data. We also reduced data with missed values and while data from Coronavirus has been available daily, data from the financial markets are not accessible on holidays or religious holidays.

This research will clarify the variable daily return on the stock market, measured by the index  $I_n$  divided by the price index in the previous day's difference. The independent variable investigated in this work is Cases of COVID-19 and Deaths of COVID-19 and the exchange rate of dollar to yuan and ILS. Many factors in the literature have been omitted due to the limited availability of similar evidence in everyday bias or strong association with other variables, lead to issues with multicollinearity problems.

## **4.2. Empirical variables**

The variables used in this research of (Covid-19) and key macroeconomics on the growth in stock market returns are described as follows.

### **4.2.1. COVID-19 confirmed cases**

Growth in COVID-19 confirmed cases measures by log for the cases in the day divided in the log of the cases in the previous day, Growth in COVID-19 confirmed cases is used as a dependent variable in the regression model, which reflect the growth in stock market return. Which expected to have a negative relation with stock market return in china (Zeren & Hizarci, 2020).

#### 4.2.2. COVID–19 deaths

Growth in COVID–19 death measures by log for the number of deaths in the day divided in the log of the number of the death in the previous day, Growth in COVID–19 deaths is used as a dependent variable in the regression model, which reflect the growth in stock market return. That expected to have a negative relation with the stock market return. (Ashraf, 2020).

#### 4.2.3. Exchange rate

The main exchange rate of yuan and ILS are use with the dollar because of the amount of trade with us, change in the exchange rate of dollar/ yuan and ILS is measured ln of the day exchange rate divided on the previous day exchange rate, change in the exchange rate of dollar/ yuan used as a control variable in the regression model, which reflect the growth in stock market return. Depreciation (appreciation) of currency may be positive (negative) Influence on stock markets. (Dornbusch & Fisher, 1980)

#### 4.3. Empirical models

The following linear models were estimated to test the hypotheses of the research:

$$\text{SSER} = \alpha + \beta_1 \text{GICC} + \beta_2 \text{GIDC} + \beta_3 \text{GIER} + e \quad (1)$$

$$\text{SZSER} = \alpha + \beta_4 \text{GICC} + \beta_5 \text{GIDC} + \beta_6 \text{GIER} + e \quad (2)$$

$$\text{AQIN} = \alpha + \beta_7 \text{GICP} + \beta_8 \text{GIDP} + \beta_9 \text{GIERD} + e \quad (3)$$



Where:

SSECR: Stock market return in Shanghai Composite Index.

SZSER: Stock market return in SZSE Component Index.

AQIN: Stock market return in Al-Quds Index.

GICC: Growth in COVID-19 confirmed cases in China.

GIDC: Growth in COVID-19 deaths in China.

GICCP: Growth in COVID-19 confirmed cases in Palestine.

GIDCP: Growth in COVID-19 deaths in Palestine.

GIER: change in the exchange rate of dollar/ yuan.

GIERD: change in the exchange rate of dollar/ ILS.

e: error, and

a: constant.

Suggests that ordinary least squares (OLS and ARMA) should be an efficient estimator. In addition, use the correlation analyses.

## **5. Empirical results**

This section presents the results of this investigation. Descriptive statistics and correlation analysis are presented first; regression diagnosis and estimation of the model are discussed later.

### **5.1 Descriptive statistics**

#### **5.1.2 Descriptive statistics of China**

Table one presents the descriptive statistics results for the dependent variables: Growth in COVID-19 confirmed cases, Growth in COVID-19 deaths, and change in the exchange rate of dollar/ yuan. Moreover, the independent variable: Stock market return in the shanghai market and Stock market return in the SZSE Component Index.

**Table 1: Descriptive indicators of Variables (1)**

	<b>SEZE</b>	<b>SSCE</b>	<b>GICC</b>	<b>GIDC</b>	<b>GIER</b>
<b>Mean</b>	0.0012	0.0005	-0.0281	0.0036	-0.0003
<b>Median</b>	0.0024	0.0011	0.0000	0.0000	-0.0004
<b>Maximum</b>	0.0400	0.0555	3.7033	4.3175	0.0122
<b>Minimum</b>	-0.0883	-0.0803	-2.9957	-2.9958	-0.0143
<b>Std. Dev.</b>	0.0171	0.0132	0.6478	0.5620	0.0029
<b>Observations</b>	248	248	248	248	248

The descriptive statistics computed and calculated based on the 248 observations recorded on the period from 22/01/2020 to 31/01/2021, from the table 1 we can note that SEZE from minimum -0.0883 to maximum of 0.0400 with a mean of 0.0012 and median of 0.0024, and it also presents the SSCE ranger from -0.0803 to 0.0555.

### 5.1.2 Descriptive statistics of Palestine

Table two presents the descriptive statistics results for the dependent variables: Growth in COVID-19 confirmed cases, Growth in COVID-19 deaths, and change in the exchange rate of dollar/ ILS. Moreover, the independent variable: Stock market return in Al-Quds index.

**Table 2: Descriptive indicators of Variables (2)**

	<b>AQIN</b>	<b>GICP</b>	<b>GIDP</b>	<b>GIERD</b>
<b>Mean</b>	-0.0004	0.0628	-0.0280	-8.9721
<b>Median</b>	-0.0072	0.0273	0.0000	-0.0008
<b>Maximum</b>	0.0259	2.0795	2.1972	0.0278
<b>Minimum</b>	-0.0374	-2.0785	-2.6390	-0.0254
<b>Std. Dev.</b>	0.0057	0.4673	0.5743	0.0057
<b>Observations</b>	195	195	195	195

The descriptive statistics computed and calculated based on the 248 observations recorded on the period from 05/03/2020 to 31/01/2021, from the table 2 we can note that AQIN from minimum -0.0374 to maximum of 0.0259 with a mean of -0.0004 and median of -0.0072.

## 5.2 Correlation analysis

The correlation coefficient presents the linear relation between variables, from table 3&4.

**Table 3: Correlation Coefficients (China)**

	<b>SEZE</b>	<b>SSCE</b>	<b>GICC</b>	<b>GIDC</b>	<b>GIER</b>
<b>SEZE</b>	1.000				
<b>SSCE</b>	0.9307	1.000			
<b>GICC</b>	(0.0410)	(0.0682)	1.000		
<b>GIDC</b>	(0.0161)	(0.0444)	0.3241	1.000	
<b>GIER</b>	(0.2270)	(0.2508)	(0.0211)	(0.0327)	1.000

**Table 4: Correlation Coefficients (Palestine)**

	<b>AQIN</b>	<b>GICP</b>	<b>GIDP</b>	<b>GIERD</b>
<b>AQIN</b>	1.0000			
<b>GICP</b>	(0.0401)	1.0000		
<b>GIDP</b>	(0.0513)	0.0166	1.0000	
<b>GIERD</b>	(0.1566)	(0.0997)	(0.0134)	1.0000

### 5.3 Estimation Results

Table 5 presents the regression results of the first research model. The model explains 0.0537 of the total variability in the SEZE (R-squared). The remaining 0.9463 of the variation in the SEZE is not explained this model and included in the error term because this paper studies only the effect of the change in exchange rate and COVID-19 cases and death on the SEZA Stock return regardless of any other variables that may affect the SEZE stocks returns too. Durbin-Watson stat is 1.88 so that indicates that no autocorrelation and accepts. The F-statistic of 4.618643 implies that the model is adequate since the p-value of the f-statistic is 0.0037 that is sufficiently high indicating the model is fit at 0.05 level of significant.

Table (5) Estimation results (Model 1)

Dependent Variable: SEZE

Method: Least Squares

Variable	Coefficient	t-Statistic	Prob.
C	0.000757	0.709713	0.4786
GICC	-0.001126	-0.648978	0.5170
GIDC	-0.000295	-0.147691	0.1828
GIER	-1.332041	-3.663152	0.0377
R-squared	0.053735		
Adjusted R-squared	0.042101		
F-statistic	4.618643		
Prob(F-statistic)	0.003664		

Durbin–Watson stat	1.885189
Observation	248

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Table 6 presents the regression results of the second research model. The model explains 0.069 of the total variability in the SSCE (R-squared). The remaining 0.931 of the variation in the SSCE is not explained this model and included in the error term because this paper studies only the effect of the change in exchange rate and COVID–19 cases and death on the SSCE Stock return regardless of any other variables that may affect the SSCE stocks returns too. Durbin–Watson stat is 1.772 so that indicates that no autocorrelation. The F–statistic of 6.047 implies that the model is adequate since the p–value of the f–statistic is close to zero that is sufficiently high indicating the model is fit at 0.05 level of significant.

Table (6) Estimation results (Model 2)

Dependent Variable: SSCE			
Method: Least Squares			
Variable	Coefficient	t–Statistic	Prob.
C	0.000155	0.189607	0.8498
GICC	–0.001284	–0.965797	0.3351
GIDC	–0.000756	–0.493024	0.6224
GIER	–1.141696	1.898607	0.0001
R–squared	0.069208		
Adjusted R–squared	0.057764		
F–statistic	6.047423		

Prob(F–statistic)	0.000548
Durbin–Watson stat	1.771901
Observation	248

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Motion results (Model 2)

Table 7 presents the regression results of the second research model. The model explains 0.030 of the total variability in the AQIN (R–squared). The remaining 0.970 of the variation in the AQIN is not explained this model and included in the error term because this paper studies only the effect of the change in exchange rate and COVID–19 cases and death on the Stock return regardless of any other variables that may affect the SSCE stocks returns too. Durbin–Watson stat is 1.33 so that indicates that no autocorrelation. The F–statistic of 1.997 implies that the model is not adequate since the p–value of the f–statistic is 0.115 that is sufficiently indicating the model is not fitted at 0.05 level of significant.

Table (7) Estimation results (Model 3)

Dependent Variable: AQIN

Method: Least Squares

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Variable	Coefficient	t–Statistic	Prob.
C	–0.000378	–0.920873	0.3583
GICP	–0.000678	–0.774468	0.4396
GIDP	–0.000522	–0.736770	0.4622
GIERD	–0.161850	–2.273811	0.0241

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R-squared	0.030415
Adjusted R-squared	0.015186
F-statistic	1.997140
Prob(F-statistic)	0.115833
Durbin-Watson stat	1.334014
Observation	195

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#### 5.4. Testing of Hypotheses

Based on the estimation models, the relationships between the independent variable and the dependent variables were established as discussed following.

1.  $H_1$ : There is a significant negative impact of the growth of cases of COVID-19 on stock market return in SEZE stock market.
2.  $H_2$ : There is a significant negative impact of the growth of cases of COVID-19 on stock market return in SSCE stock market.
3.  $H_3$ : There is a significant negative impact of the growth of cases of COVID-19 on stock market return in AQIN stock market.
4.  $H_4$ : There is a significant negative impact of the growth of deaths of COVID-19 on stock market return in SEZE stock market.
5.  $H_5$ : There is a significant negative impact of the growth of deaths of COVID-19 on stock market return in SSCE stock market.
6.  $H_5$ : There is a significant negative impact of the growth of deaths of COVID-19 on stock market return in AQIN stock market.

All hypotheses above rejected because not all are within the acceptable range (0.05%) and accept the null hypothesis.



Where the correlation table shows that there is a weak negative linear relationship between the changes in the exchange rate, growth in cases, and death of COVID-19 on stock market return in SEZE, SSCE and AQIN.

## **6. Conclusions**

In this study, the impact of COVID-19 cases and death on the Stock return was analyzed using correlation and (OLS and ARMA) analysis. The results showed that there is no impact of growth in cases and death of COVID-19 on the stock return in SEZE, SSCE and AQIN.

Moreover, there are other indicators and variables that influence the return on the stock market (internal and external variables) and this study proposes more work on the impact of exchange rate volatility and COVID-19 effect on results using other measurement and evaluation methods, as 248 and 195 findings may not be adequate to provide a verdict on the growth in return on the stock market.

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