Financial and Economic Indicators in Shade COVID-19: An Applied Study on the Palestinian Environment

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ABSTRACT

The study investigates whether there are relationships between financial and economic indicators and COVID-19 in the Palestinian environment and whether these relationships are positive or negative. The study sample consisted of data on the study variables during the period from (3/ March -/2020 - 11/November -2021), which represented 21 months. Panel regression analysis was used to examine the study hypotheses and achieve the study objectives. The results showed that there is a statistically significant negative relationship between (market value of stocks, trading volume, change in the Jerusalem index, stock prices, public revenues, and GDP) and COVID-19, while it was statistically positive for the indicators (public debt, internal debt, unemployment, government investment). This paper highlights the financial and economic challenges facing the Palestinian environment during COVID-19. and help future researchers to study possible crisis scenarios and deal with them. The paper presents a vital review of the period of the Corona crisis. It also determines the extent of the Palestinian financial and economic environment's resistance to the repercussions of crises in general and COVID-19 in particular, the study recommends that in light of health crises, it is necessary to increase government spending for health care systems to meet containment requirements.

Keywords: COVID-19, Financial and Economic Indicators, Palestinian environment.

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I. INTRODUCTION

At the beginning of the year 2020, the world witnessed a large spread of the Coronavirus, which was called COVID-19, which was discovered in December 2019 in the Chinese city of Wuhan and was classified as a pandemic by the World Health Organization on March 11, 2020. As a result of its spread, countries rushed to take quarantine measures that were not witnessed. It has a similar history: hundreds of millions of people were banned from their homes; all land, air, and sea transportation stopped; many factories stopped; restaurants and cafes stopped; and everything related to people's gatherings stopped (Hamza & Issa, 2020).

With the beginning of being affected by the Corona pandemic in Palestine, which cast a shadow during the first quarter of 2020, the Palestinian economy witnessed a decline of 4% compared to the corresponding quarter of 2019, increasing the decline in light of the deepening of the pandemic, which imposed a set of measures within the state of emergency. Palestine was closed partially and completely at intermittent periods to limit the spread of this epidemic. This closure focused on the second quarter of 2020 when the gross domestic product recorded a sharp decline of about 20% compared to the same quarter of the previous year. During the second half of 2020, most of the economic activities are gradually recovering, based on the balance between the economy and health, as the gross domestic product increased. However, its level remained lower than it was before the pandemic, affected also by the Israeli occupation's

procedures related to the seizure of clearance revenues, which lasted for more than seven consecutive months, as these funds constitute 70% of the total revenues and are considered the main source for covering current expenses. At the level of expenditure, total consumption in Palestine declined during the same year by 6%, and total investment declined by 36%. (Palestinian Central Bureau of Statistics, 2020).

Despite the slow recovery in most sectors, the labour market faced a significant increase in the unemployment rate. Especially since about 46.7% of workers in the West Bank and Gaza Strip work without a written contract, a large number of workers in the West Bank and Gaza Strip are at risk of losing their jobs without any legal protection for their rights (Sadiq, 2020).

The pandemic and the repercussions of that period of closures, as well as the halting of trade and financial transactions, greatly affected stock movements. Trading was suspended for a month and a half at the Palestine Stock Exchange to protect its employees and prevent market fluctuations in light of the outbreak of the Coronavirus. Noting that there are 48 companies listed on the stock exchange, with a total market value of about $3.8 billion, Palestinian capital market, closing the Palestine Stock Exchange (2020) Also, stock exchange trading declined in the first eight months of the year 2020 by 70% compared to the corresponding period of last year, and the average value of trading per session for the year 2020 declined to about one million dollars, which is a continuation of the decline over the previous years. Also, Al-Quds Index has lost more than 15%

of its value since the beginning of the Corona crisis. All of this was directly reflected in the liquidity and trading of Palestinian stocks. (Awida, 2020).

Based on the foregoing, the current study sought a deeper understanding of the repercussions of health crises on the Palestinian environment by studying the relationship between financial indicators represented (the market value of stocks, trading volume, change in the Jerusalem Index, stock prices) and economic indicators represented (internal public debt, revenues, public spending, public expenditures, gross domestic product, unemployment, government investments) due to the Corona pandemic.

II. THEORETICAL FRAMEWORK AND LITERATURE REVIEW

The global Corona pandemic is putting tremendous pressure on the societies and economies of countries around the world, and significant imbalances have been observed across the economic and social sectors. According to the International Labor Organization (ILO, 2020), the global economy would witness its worst recession since the Great Depression of the last century.

In the Palestinian environment, the economy operates under severe constraints resulting mainly from the structural distortions caused by Israeli occupation measures. Despite the peace process signed more than 25 years ago, the Palestinians still lack control over many vital areas such as natural resources, freedom of movement of labour and goods, border control, zoning, and economic tools such as monetary policies. All of this led to the erosion of the productive base of the Palestinian economy (Al-Batmeh, 2020).

This is evident in the changing structure of the GDP, where the share of the agricultural, industrial, and construction sectors has declined significantly over the years. For example, in 1994, the share of the agricultural sector was 13% of the GDP, but in 2017, its share was only 3.4% of the GDP. During the same period (1994–2017), the share of the industrial sector in GDP decreased from 25% to 20%. On the other hand, the contribution of the services sector and public administration increased from 68% in 1994 to 76% in 2017 (Palestinian Central Bureau of Statistics, 2019). These unfavourable structural changes have had serious repercussions on the Palestinian economy on an ongoing basis, especially in hindering the ability of the Palestinian labour market to create job opportunities and absorb workers. Under these difficult political and economic conditions, the first cases of the novel coronavirus (COVID-19) were diagnosed in Bethlehem on March 5, 2020. Since that day, many closures have been imposed and later lifted. On June 8, 651 cases of this disease were diagnosed in Palestine, and more than 60% of those cases were related to workers working in Israel (Prime Minister's Office, 2020).

The aforementioned period represents the first wave of this pandemic, after which cases began to accumulate one after another until the second wave of the epidemic broke out. Data in mid-August 2020 indicated that there were 122 deaths from this epidemic and more than 22,056 cases of infection recorded in Palestine (including Jerusalem) (Palestinian Ministry of Health, 2020). The Palestinian Authority has worked to put in place many measures to reduce the Corona crisis, including the closure of schools and universities, the

allocation of 13 million dollars to compensate workers for the upcoming closure period, and the payment of the remaining dues of public servants.

Movement between governorates is also strictly prohibited except for medical staff, essential goods, and foodstuffs while reducing the work of ministries and official institutions to the level of the state of emergency to no more than 30% of their human capacity (Wafa Agency, 2020).

The impact of the Corona pandemic on the Palestinian economy was also evident at the macro and micro levels. At the macroeconomic level, data issued by the Palestinian Central Bureau of Statistics indicated a decline in the gross domestic product by 12% compared to 2019, due to the impact of demand and supply at the same time, and most economic activities witnessed a noticeable decline in their added value during the year 2020 compared to the year 2019. Where the activity of the service recorded the highest value of decline, by 10%, and the most affected was the tourism activity, including restaurants and hotels, as more than 10,000 workers stopped working in this sector, and the construction activity decreased by 35% due to the sharp decline in the level of demand for construction for that period, as the number of building permits decreased by 45% during the comprehensive closure period (second quarter 2020), then the industry activity, which declined by 12% during 2020, as the first half of 2020 witnessed a decrease in the quantities of industrial production by 6%. However, during the second half of 2020, this activity began to gradually recover, but at a lower level than it was before the pandemic as a result of the clearance crisis, and agricultural activity witnessed a decline of 11%. (Palestinian Central Bureau of Statistics, 2020).

Regarding the financial and banking aspects, the Monetary Authority has issued laws and instructions to limit the effects and repercussions of the Corona crisis on banks and depositors alike. About banks, procedures related to work and working hours came, such as working from home, closing some bank branches voluntarily in coordination with banks, and reducing working hours. In parallel, it issued The Monetary Authority has made many decisions concerning depositors and accredited persons, most notably postponing monthly instalments for several months for all borrowers and postponing the payment of documentary credits and due withdrawals. And it prohibited banks from collecting any additional commissions on deferred instalments, extending credit ceilings and ceilings granted to authorized persons, and stopping collecting any commission on electronic services for a period of 6 months (Palestinian Monetary Authority Instructions No. 04/2020: Monetary Authority Measures to Mitigate the Health Crisis). In light of the intensification of the Corona crisis measures, specifically in March 2020, the Palestinian Monetary Authority issued new and important instructions for the banking sector, and perhaps the most prominent of these measures is the immediate cessation of clearing work, postponing the collection of checks, and stopping the reception of authorized persons, to be followed after that by other instructions related to checks. Balance The reason for return is considered emergency circumstances, but other reasons are recorded in the banking system, and work returns as before after the end of the procedures to limit movement (Palestinian Monetary Authority Instructions No. 13/2020: Mechanism for Dealing with Checks in the Clearing

System).

In July 2020, the Monetary Authority issued new instructions to mitigate the effects of the financial crisis and the Corona crisis, as it prohibited postponing the instalments of creditors who are not affected by the crisis except after obtaining the approval of the Monetary Authority, as well as some procedures for creditors who were affected by the pandemic, such as restructuring and scheduling existing facilities and granting The authorized debtor has a temporary debit overdraft ceiling and is structuring the credit based on the creditors who have been affected by the crisis by arranging their conditions and their ability to pay, and the bank is also prohibited when structuring the credit from increasing interest rates or obtaining any commission (Palestinian Monetary Authority Instructions No. 27/2020: Concerning Mitigation from the Effects of the Financial Crisis and the Coronavirus Crisis).

To understand the repercussions of COVID-19 on Palestinian financial and economic indicators, this must be linked to the global and regional environment. Regarding financial indicators for countries in general, a study (Abbas, 2021) revealed that the impact of COVID-19 on global stock exchanges: a critique of the theory of efficient markets Whereas, despite the negative repercussions of COVID-19 on the performance of the financial markets, some considered it a natural correction movement that the markets are going through. A correction is needed in the market anyway since some stocks were overdone and a readjustment was needed to rebalance. Based on Orhun's (2021) study, an event study analysis was conducted to estimate the abnormal returns of selected stock indices from 15 countries to major events related to the global pandemic. The findings indicated that the stock markets of countries with greater FDI, a higher Democracy Index, and a greater number of confirmed COVID-19 cases are more likely to be negatively affected. On the other hand, stock markets in countries with higher health spending, a higher level of preparedness for pandemics, and a higher per capita GDP are less negative. In the banking sector, (Demirguc *et al*., 2020) analyzed bank stock prices around the world to assess the impact of the COVID-19 pandemic on the global banking sector. The results indicated that the crisis and the adverse role of lending put the banking systems under great pressure, and the performance of bank stocks was lower than the performance of non-bank financial companies. Political interventions have been mixed. Government support, borrower assistance, and monetary easing have mitigated the negative impact of the crisis, but this is not for all banks or in all circumstances. For example, aid and precautionary measures have exacerbated the pressure on banks that are already undercapitalized and/or operating in countries with little fiscal space.

As for the financial indicators for individual countries, the study (Hatmanu & Cautisanu, 2021) confirmed the existence of a long-term negative impact of COVID-19 on the BET index for Romania. Yoshimi (2020) investigated the epidemiological effects of COVID-19 on the stock market in South Korea. Through daily data from January 2, 2019, to August 31, 2020, the results showed that the high rate of new infections increases the volatility of the stock price index, reduces foreign investors' holdings of local stocks, and indirectly leads to the depreciation of the South Korean won. The study(Haroun, 2021) also aimed to demonstrate the impact of the new COVID-19 on the trading of the Damascus Stock Exchange, mainly represented by the market index and the value and volume of trading, so that the three variables of the Damascus Stock Exchange were compared before announcing injuries inside Syria and after the announcement, and then comparing the trading value and trading volume for each of the listed sectors, down to the most affected sector.

Haroun's studies concluded that there is a positive impact of the new COVID-19 on the Damascus Securities Exchange Index, as well as a positive effect on the trading values, while there is no significant effect on the trading volume. The difference in impact is according to the sectors of companies listed in the market. The study (Ali and Sayed, 2020), recommended the impact of the spread of the new COVID-19 on the performance of stock markets in the Gulf Cooperation Council countries during the period from March 1, 2020, AD, to April 30, 2020, AD. The study used the prevalence rate of COVID-19 through the relative increases in the number of cumulative cases in each of the following countries: Saudi Arabia, the Emirates, Qatar, Bahrain, and Oman). The study also took into account the effect of relative changes in oil prices on the performance of stock markets for the same period. The study concluded that there is a negative and significant impact of the spread of COVID-19 on the performance of stock markets in the GCC countries. Whenever the rate of spread of the virus increased by 1%, the stock markets were affected in the opposite direction by 0.6%.

On the other hand, there is a positive and significant impact from changes in oil prices and the performance of stock markets in the GCC countries. Whenever oil prices changed by 1%, the stock markets were affected in the same direction by 4.24% in the case of (the FMOLS) methodology and 9.5% in the case of (the DOLS) methodology. And to investigate the impact of the COVID-19 pandemic on the stock market in Saudi Arabia only. The study (Alzyadat & Asfoura, 2021) relied on the data of the daily closing price index of the stock market and the number of daily cases infected with the COVID-19 virus during the period from March 15, 2020, to August 10, 2020. The results show that the returns of the stock market responded negatively to the growth in cases infected with COVID-19 during the pandemic. The results also confirmed that the negative market reaction was strong during the early days of the COVID pandemic. The study concluded that the stock market in Saudi Arabia responded quickly to the COVID-19 pandemic; it varied over time, depending on the stage of the pandemic. However, the Saudi government's response time and the stimulus package's size played an important role in mitigating the effects of the COVID-19 pandemic on the Saudi stock market.

Regarding the economic indicators of countries in general, a study (Lamri *et al*., 2021) aimed to analyze the effects of the Corona pandemic on the most important indicators of the performance of the global economy by reading the reality of this pandemic on the most important indicators of the performance of the global economy and anticipating the most important consequences of it in the short and medium term. In this regard, we relied on some reports of non-existent international organizations and bodies to get the latest statistics. The study concluded that the Corona (Covid-19) pandemic caused a health crisis that resulted in a global

economic crisis that had a severe impact on all countries' economies through the impact of all major economic sectors, leaving a massive global shock that led to recession in many countries in the short term. As for the medium term, all expectations and forecasts, whether optimistic or pessimistic, portend the continuity of the effects of the pandemic on the most important indicators of the performance of the global economy. The study (Shohini and Das, 2020) showed that the COVID-19 pandemic event caused a widespread global shock that caused a sharp economic slowdown. There has been a slowdown in all economic sectors around the world, and more than a third of the world's population is under lockdown. The study (Barua & Barua, 2021) also confirmed that the COVID-19 pandemic affected economies around the world, including markets and institutions, in all possible dimensions. For banks, in particular, the pandemic is generating multifaceted crises, mostly through increased default rates.

This is likely to be worse in developing economies with poorly structured financial markets. The study (Karama *et al.*, 2020) aimed to clarify the repercussions of COVID-19 on the global economy in general and the seriousness of this virus, which brought the world into an economic, financial, and social crisis, the dire consequences of which worsened in a very short time, starting with the real economic sector and then moving to the financial and social sector after This led to a slowdown in economic growth rates and plunged many countries into a global recession with its impact on the movement of trade, supply chains, asset prices, and primary commodities, as well as the future decisions of investors amid the scarcity of information and the outlook on the evolution of the spread of this epidemic. The researchers used the historical descriptive approach and the analytical approach in this study. The study concluded that COVID-19 constituted a global health crisis and affected economic and social conditions at the global level. The study recommended looking towards reducing globalization and adopting a less open approach to travel and immigration.

Arab economies, the study (Sayed Omar and Bin Abdel-Fattah, 2020) examined the economic impact of COVID-19 on Arab countries. It also deals with the efforts of national authorities in Arab countries and the role of central banks to face the economic repercussions of the virus and prevent its spread. This study reached a set of results, the most important of which is that in addition to the heavy human losses in the form of the increasing increase in the number of injuries and deaths, The wide and rapid spread of the virus had many negative effects on the global economy, as international organizations confirmed in their estimates the decline in global economic growth rates, which negatively affected Arab economies, especially in light of their dependence on the tourism and oil export sectors.

As for the economic indicators for individual countries, a study (2020, Sengupta & Dev) indicated that the outbreak of the COVID-19 epidemic was an unprecedented shock to the Indian economy. The economy was already in a precarious state before the infection with COVID-19. And with the prolonged lockdown throughout the country, the global economic downturn, and the associated disruption in the supply and demand chains, the Indian economy is likely to face a prolonged period of slowdown. The magnitude of the impact will depend on the duration and severity of the health crisis, the duration of the lockdown, and the way the situation unfolds once the lockdown is lifted, as well as the impact of COVID-19. On economic growth in Nigeria, the results of a study (Inegbedion, 2021) showed that the lockdown caused by COVID-19 has significantly limited economic activities and the circular flow of income.

The marked decline in the circular flow of income in the aftermath of the COVID-19 lockdown also negatively impacted economic growth. The study suggested the need for policymakers to take radical measures to limit the epidemic and thwart the recession that may result from it. The study (Afanah, 2020) showed that the net profits of Saudi banks decreased and the provision for credit losses increased due to COVID-19. The study recommended the need to provide logistical support and training. The technical staff of Saudi banks on remote work techniques, as well as the extent of the impact of the spread of COVID-19 on unemployment rates in Egypt, and then help the policymaker to contain the crisis and limit the negative effects of this pandemic on macroeconomic variables, especially the level of employment.

Through previous studies, we noted that there is some consensus among researchers about the relationship of financial and economic indicators to COVID-19 for countries without combining indicators in one study, so this study came to shed light on the repercussions of COVID-19 on financial and economic indicators together in an emerging and developing environment that has financial and economic privacy, such as the Palestinian environment. This will be expressed in the following hypotheses:

H01: There is no statistically significant relationship between financial indicators in Palestine and their dimensions (market value of stocks, trading volume, change in Al-Quds Index, stock prices) and COVID-19.

H02: There is no statistically significant relationship between economic indicators in Palestine and their dimensions (public debt, internal public revenues, public expenditures, gross domestic product, unemployment, government investment) and COVID-19.

III. STUDY METHODOLOGY

A. Study Population and Sample

The study population consisted of all data related to COVID-19 and financial and economic indicators in Palestine. It included data for each of the variables (number of infection cases, market value of shares, trading volume, change in the Jerusalem Index, stock prices, internal public debt of the Palestinian Authority, and revenues of the Palestinian Authority). Palestinian Authority expenditures, GDP, unemployment, and Palestinian Authority investments). The study sample consisted of data on the study variables during the period from March 3, 2020, to November 11, 2021, which represented 21 months with 231 observations of the complete variables.

B. Methods of Measuring Study Variables

The analytical quantitative approach is the most suitable for the nature of the subject of the study and its variables, as the data used for statistical analysis will be collected from the Palestinian Ministry of Health, the Palestinian Statistics

Center, the Palestinian Monetary Authority and the Palestine Stock Exchange, to analyze the relationship between the independent variables of the study represented by financial indicators with their dimensions (value stock market, trading volume, change in Al-Quds Index, stock prices) and economic indicators in their dimensions (external public debt, public revenues, public expenditures, gross domestic product, unemployment, government investment). The dependent variable is the number of cases of COVID-19. Table I shows the method of measuring the variables.

C. Descriptive Statistics of the Study Data

Table II shows the statistical description of the study data, where the table shows the arithmetic mean, standard deviation, and each of the highest and lowest values of the independent study variable and the collected dependent variables.

As for the indicators of skewness and kurtosis, they were all suitable for the study, and Table III shows these indicators.

TABLE I: MEASURING THE STUDY VARIABLES

Variables	Measurement methods
	Dependent Variable
COVID-19	The monthly numbers of people infected with COVID-19 were relied upon during the period from (3rd of 2020 to 11th of 2021), with reference to the Palestinian Ministry of Health publications. (Ali and Sayed, 2020), study (Alzyadat & Asfoura, 2021)
	Independent Variables
	Financial Indicators
Market value	It is represented in the number of subscribed shares multiplied by the closing price of the company's shares at the end of the period" (Awwad, 2023). The market value of the listed companies will be taken monthly (Palestine Stock Exchange, 2021)
Trading volume	The number of trades or deals (buying and selling) that took place on shares traded on the stock exchange (Khalil, 2018), The number of monthly trading or deals will be taken (Palestine Stock Exchange, 2021)
Change in Al-Quds Index	It is the main index of the stock exchange, as it represents a sample of 15 listed companies from all business sectors on the stock exchange (Awwad & Razia, 2021). The monthly change of the index (Palestine Stock Exchange, 2021) will be calculated
Stock prices	It is defined as the closing price published on the stock exchange during a month or in a quarterly or yearly manner. The monthly average of the traded shares closing price will be taken (Awwad & Razia, 2021)
	Economic Indicators
Domestic public debt	is the money that the government borrows from individuals and institutions to face emergency conditions and to achieve various goals, when public revenues are not sufficient to cover the public expenditures that it requires regarding emergency situations. Public debt data will be taken on a monthly basis (Bahaa & Jafar, 2021).
Public Revenues	Economic resources obtained by the state in the form of cash flows in order to cover the state's general expenditures with the aim of satisfying public needs. Revenue data will be taken monthly (Masrawah & Al-Muflah, 2015), (Bahaa & Jafar, 2021)
Public expenditures	are a tool of fiscal policy, whereby the state spends to achieve its economic and social goals and includes development expenditures and current expenditures (Bahaa & Jafar, 2021). Expenditure data will be taken monthly (Palestinian Monetary Authority, 2021)
Gross Domestic Product	which is the total monetary or market value of all final goods and services produced within the borders of the country in a specific period of time (Bahaa & Jafar, 2021), GDP data will be taken monthly (Palestinian Monetary Authority, 2021)
Unemployment	is the inability of individuals who are able to work over the age of 15 to obtain a job." The monthly unemployment rate was calculated based on the data of the Palestinian Central Bureau of Statistics. (Palestinian Central Bureau of Statistics, 2019) same- PCBS, 2020)
Government investment	is capital spending on new projects in the public utilities and infrastructure sectors, in addition to projects related to economic activity for the production of goods and services in the productive and service sectors such as industry, agriculture, housing, health, education, and tourism. Government investment data will be taken monthly (Palestinian Monetary Authority, 2021)

TABLE II: RESULTS OF THE DESCRIPTIVE ANALYSIS OF THE STUDY VARIABLES

Variables	Arithmetic mean	Standard Deviation	Highest Value	Lowest Value
Dependent Variable				
The number of cases of covid-19	142,024.12	136,856.84	347,578	0
Independent Variables				
Financial Indicators				
The market value of the share	2,343,182,763.95	1,882,980,590.46	4,229,700,007	2,250,524,698
Trading Volume	13.3	10.11	23	0
Change in Al-Quds Index	0.014	0.034	0.1122	-0.0381
Stock Prices	1.342	1.045	2.505	0
Economic Indicators				
domestic public debt	30,686,600	15,439,183.4	44,024,365	12,592,121
General Revenue	576,029,268	56,950,040	878,911,243	425,852,775
General Expenses	607,356,731	69,547,860	904,885,961	470.982,749
Gross Domestic Product	267,250,351	29,074,712	444,745,267	313,497,762
Unemployment	26.28	1.8594	28.5	23.4
Government Investment	17,417,683	7,646.760	19,934,514	0

TABLE III: INDICATORS OF SKEWNESS AND KURTOSIS OF THE STUDY VARIABLES

Variables	Skewness	Kurtosis
The number of cases of Covid 19	0.706	-1.178
The market values of the shares	-0.354	0.3373
Trading Volume	-0.8988	0.34125
Change in Al-Quds Index	0.7086	-0.3451
Stock Prices	-0.4825	-0.4813
Domestic Public Debt	-1.1385	1.4126
General Revenue	0.37945	0.01387
General Expenses	2.09739	4.46526
Gross Domestic Product	0.19852	-1.15059
Unemployment	-0.544550424	-0.32036
Government Investment	-0.942522121	-1.872026

D. Statistical Methods Used in the Study

To conduct the appropriate analysis and answer the hypotheses of the study, panel data was used. The importance of using panel data is highlighted in that it takes into account what is described as heterogeneity or difference between the sample items, whether cross-sectional or temporal, as neglecting them leads to biased and inconsistent estimates such as the local economic situation, language, culture, geographic location, and other characteristics that set the variables apart from each other. as well as factors that change over time, such as technological and institutional development, change in economic and trade policies, etc., but these effects are fixed in the short term or at least during the study period, and these time effects are treated as fixed effects using the fixed effects model (fixed effects) or random effects using the random effects model.

Through the information covered by the study, which included the financial and economic data of the Palestinian environment and the number of infections with the Coronavirus during (21) months, cross-sectional views were used for the periods called (Balanced panel data), and testing will be done between three data models, which are: Regression model using the method of least squares (Ordinary least squares model), fixed effect model, and random effect model. To reach an appropriate model for the study data that gives correct and accurate results, the Hausman test is applied.

E. Statistical Methods Used in the Study

To study the relationship between the dependent variable represented by the number of cases of COVID-19) and the independent variables represented by (financial and economic indicators in Palestine) and to know the nature of this relationship and the strength of the correlation between the variables, a mathematical model was built whose function is formulated as follows:

$$Y = X1A1 + X2A2 + X3A3 + X4A4 + X5A5 + X6A6 + X7A7 + X8A8 + X9A9 + X10A10$$

where
X1 - X 10: The level of impact of COVID-19 on financial and economic indicators.
A1 - A10: (market value of stocks, trading volume, change in Al-Quds Index, stock prices, internal public debt, government revenues, government expenditures, gross domestic product, unemployment, government investment).

IV. DATA ANALYSIS AND HYPOTHESIS TESTING

A. Regression Model Testing (Static Panel Data)

By relying on the study model, which included the independent variable represented by the number of cases of COVID-19 and the dependent variables represented by (financial and economic indicators), the regression model was tested using the method of least squares (ordinary least squares), the fixed effects model (fixed effect model), and the random effect model, and the results are shown as follows:

TABLE IV: RESULTS OF ESTIMATING THE REGRESSION MODEL USING THE ORDINARY LEAST SQUARES METHOD

Variables	Coefficient	Std. Error	t- statistic	Prob.
A1	-0.165	0.084	4.027	0.02
A2	-0.185	0.135	0.862	0.31
A3	-0.142	0.186	0.712	0.12
A4	-0.167	0.147	0.638	0.22
A5	0.35	0365	3.894	0.03
A6	-0.452	0.256	0.963	0.41
A7	0.065	0.136	0.625	0.52
A8	-0.124	0.186	0.584	0.62
A9	0.56	0.135	0.236	0.45
A10	0.23	0.065	4.652	0.02

R-Square= 0.86, adjusted R-Square= 0.28, DW = 1.92.
F-statistics= 3.98, P-value (F)= 0.00, S.E of regression= 3.46.
VIF=2.28 Average.
(Jarque-Bera) =2.28 P-value= 0.352.
* Statistically significant at the level of significance ($\alpha = 0.05$).

TABLE V: RESULTS OF ESTIMATING THE FIXED EFFECT MODEL

Variables	Coefficient	Std. Error	t- statistic	Prob.
A1	-0.264	0.225	3.636	0.001
A2	-0.198	0.831	5.225	0.000
A3	-0.165	0.154	5.632	0.000
A4	-0.271	0.096	4.327	0.001
A5	0.125	0.139	3.556	0.001
A6	-0.235	0.186	5.942	0.003
A7	0.154	0.164	.745	0.077
A8	-0.065	0.063	3.156	0.00
A9	0.075	0.084	3.246	0.00
A10	0.069	0.075	3.274	0.00

R-Square= 0.52, adjusted R-Square= 0.47, DW = 1.21.
F-statistics= 5.68, P-value (F)= 0.00, S.E of regression= 3.84.
* Statistically significant at the level of significance ($\alpha = 0.05$).

TABLE VI: RESULTS OF THE RANDOM EFFECT MODEL ESTIMATION

Variables	Coefficient	Std. Error	t- statistic	Prob.
A1	-0.265	0.208	3.854	0.011
A2	-0.347	0.235	2.653	0.023
A3	-0.051	0.037	.256	0.063
A4	-0.034	0.035	.098	0.058
A5	0.301	0.167	3.965	0.021
A6	-0.116	0.135	.124	0.066
A7	0.142	0.139	.021	0.061
A8	-0.062	0.112	.035	0.055
A9	0.045	0.052	.521	0.071
A10	0.034	0.048	.229	0.063

R-Square= 0.21, adjusted R-Square= 0.31, DW = 1.86.
F-statistics= 3.04, P-value (F)= 0.00, S.E of regression= 2.13.
* Statistically significant at the level of significance ($\alpha = 0.05$).

Through the previous results, it is clear to us from Table V (fixed effect model) that there is a statistically significant relationship between all the independent variables (financial and economic indicators) except for A7 (public expenditures) and the dependent variable (COVID-19), where the level of significance was less than (0.05). The P-value (F) is 0.00,

unlike the (ordinal least squares) table, where the relationship was statistically significant only for A5, A1, and A10, which are (market value, internal public debt, and government investment), with the general significance of the model. As for Table 6 (random effect model), we note that there is a statistically significant relationship only for A5, A2, and A1, which are (market value, trading volume, and internal public debt), with the general significance of the model.

To select the optimal method, the Hausman test was used to compare the fixed effects model and the random effects model. The results were as follows:

TABLE VII: Hausman Test Results for the Better Model than the Estimated Models

The Test	Test Value	P-Value
Restricted F Test	6.611	0.000
Hausman's test	60.265	0.000

The result in the previous table indicates that the significance of the test amounted to (0.000). This value is less than (0.005), which indicates the significance of the test. This indicates that the fixed effects model is better than the random model, and therefore the fixed effects model will be adopted to study the relationship between the study variables. Hence, an estimation equation for the model can be built and represented by the following equation:

$$Y = a - 0.264\,A1 + -0.198\,A2 + -0.165\,A3 + -0.271\,A4 + 0.125\,A5 + -0.235\,A6 + -0.65\,A8 + 0.75\,A9 + 0.69\,A10 + e$$

whereas:
Y: COVID-19
X1 – X10: The level of impact of COVID-19 on financial and economic indicators
A1 - A10: (market value of stocks, trading volume, change in Al-Quds Index, stock prices, internal public debt, government revenues, government expenditures, gross domestic product, unemployment, government investment)

B. Check the Terms of the Form

Building a multiple linear regression model requires examining several assumptions (conditions) to ensure the ability to generalise the results, including determining the independence of the occurrence of the error or the absence of the model from the autocorrelation problem using the (Dw) test, noting that the value of the Drapon-Watson test (Dw) ranges between 0 and 4, and whenever it approaches zero there is a positive autocorrelation, while if it approaches four there is a negative autocorrelation, and when it approaches the value 2 there is no autocorrelation. And based on the results of Table IV, the value of the Dw test was (1.92), a value close to the value 2, which supports the acceptance of the hypothesis indicating that there is no autocorrelation problem, as all autocorrelation and partial autocorrelation coefficients are not statistically significant, which confirms the absence of autocorrelation between the variables of the study covered by the form. Also, the condition of independence of the independent variables from each other means that there is no high correlation between the independent variables themselves, and the disruption of this condition causes the problem of linear double. This condition was verified using the Variance Inflation Factor (VIF) test, as

the average variance inflation coefficient was (2.28), which is less than five. In general, the variance inflation coefficients for the independent variables did not exceed the value of 5, and this indicates that there is no linear double problem. In the model, thus supporting the quality of the proposed model. The condition of the normal distribution of the study variables was verified using the Jarqure-Bera test, and the results indicated that the test value is equal to (2.28) with a probability (P-value = 0.352), which is greater than 0.05, which indicates the acceptance of the null hypothesis that states that the study variables are normally distributed.

C. Hypothesis Testing

To examine the answers to the study's questions and test its hypotheses, the Pearson Correlation Coefficient was used. Table VIII shows:

TABLE VIII: Results of the Matrix of Correlation Coefficients for the Study Variables

1	Pearson Correlation	y
	Sig. (2-tailed)	
-0.741	Pearson Correlation	A1
0.047*	Sig. (2-tailed)	
-0.635	Pearson Correlation	A2
0.028*	Sig. (2-tailed)	
-0.631	Pearson Correlation	A3
0.031*	Sig. (2-tailed)	
-0.268	Pearson Correlation	A4
0.024*	Sig. (2-tailed)	
0.843	Pearson Correlation	A5
0.042*	Sig. (2-tailed)	
-0.744	Pearson Correlation	A6
0.039*	Sig. (2-tailed)	
0.041	Pearson Correlation	A7
0.985	Sig. (2-tailed)	
-0.786	Pearson Correlation	A8
0.021*	Sig. (2-tailed)	
0.635	Pearson Correlation	A9
0.026*	Sig. (2-tailed)	
0.478	Pearson Correlation	A10

* Statistically significant at the level of significance ($\alpha = 0.05$)

Based on the results of Table VIII, it is clear to us that there is a statistically significant relationship between COVID-19 and financial and economic indicators, except government spending.

V. Conclusions and Recommendations:

The study aimed to understand the nature of the relationship between financial and economic indicators in light of the repercussions of the COVID-19 crisis during the period (3 March–4 November 2020–11 November 2021). The study concluded that there is a statistically significant negative relationship between financial indicators in the Palestinian environment represented by (b) the market value of shares, trading volume, change in Al-Quds Index, and stock prices) and the number of cases of COVID-19, which means that the increase in cases of COVID-19 has negatively affected the performance of the Palestine Stock Exchange. Individual and institutional investors in light of the crisis and its preventive measures and risks. The resulting additional investment decreased their confidence in investing in the stock market and the tendency to increase savings and ration consumption to face potential developments.

The results also showed that there is a significant positive

relationship between some economic indicators in the Palestinian environment (public, internal debt, unemployment, government investment) and the number of cases of COVID-19, and this indicates that the increase in internal public debt from financial institutions came to fill the needs.

The emergency crisis and government investment support were due to the increase in cases of infection and the increase in unemployment rates, as 30% of employees in internal and temporary employment lost their jobs permanently. While it was found that there is a significant negative relationship between (public revenues and gross domestic product, with the exacerbation of the crisis and its repercussions, government revenue decreased due to the general slowdown in the economy, and this was reflected in the gross domestic product. while There was no statistically significant relationship between public expenditures and the number of cases of COVID-19, as government spending was almost constant during the period.

Based on the results, the study recommends, in light of the health crises, increasing government spending for healthcare systems to meet the requirements of containment and taking all precautionary measures to curb the spread of diseases to reduce the period for the return of economic life to its previous normal. Continuing to support the Palestinian financial market by providing the necessary liquidity for companies listed on the Palestine Stock Exchange to meet their credit needs in order to counteract the negative economic impacts and linking the sustainability of private projects to obtaining government privileges by preserving and not laying off workers. A specific sector or segment is more efficient, accurate, and correct.

As a complement to this study, it is necessary to conduct future studies on the effects of health crises on the Palestinian banking sector and focus on the impact of health crises in the social and political aspects, while studying possible scenarios for crises and dealing with them.

CONFLICT OF INTEREST

The authors declare that they do not have any conflict of interest.

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