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Nexus between Macroeconomic Factors and Economic Growth in Palestine: An Autoregressive Distributed Lag Approach

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Abstract: All countries are trying their best to achieve maximum economic prosperity through employing efficient economic strategies. Countries seem to be conscious of various factors that can potentially affect economic growth. Given that, the current study examines the impact of various macroeconomic factors on the economic growth of Palestine. By employing the large range of quarterly data spanning from 2001 to 2020, the statistical outputs of the ARDL model show that government debt, donations, government expenditures, and unemployment rate adversely impact economic growth. However, other factors including credit facilities, inflation, and total investments positively impinge upon the economic growth of Palestine. Such dynamic impacts of various macroeconomic factors display both the detrimental and growth-promoting role of macroeconomic factors in determining economic prosperity. Our analysis suggests various policy implications to economic policy officials regarding the effectiveness of various factors for economic health. It is further recommended that international agencies working in aid- and donation-intensive countries should design efficient economic policies that can help such economies in coming out from economic distress.

Keywords: ARDL; economic growth; macroeconomic factors; Palestine economy

1. Introduction

It is an immense need in the current age to sustain economic growth to ensure a better living standard for residents of a country (Dauda 2017). For this purpose, policy officials make strategies and focus on other economic indicators including trade, investment, borrowing, and inflation, etc., to escalate their country's economic growth. In this regard, many studies explore different factors affecting economic growth (Mohseni and Jouzaryan 2016; Guzman et al. 2018; Awad and Karaki 2019; Jedidia and Guerbouj 2021). The empirical outputs of these studies suggest the dynamic association between different macroeconomic factors and economic growth in different economies of the world. However, the emerging literature is silent on quantifying the dynamic effect of such factors on the economic growth of Palestine. Given this, the current study seeks to discover the impact of multiple macroeconomic factors on the economic health of Palestine. This study comprehensively considers the various factors as indicated by previous studies and checks their association in relationship with economic growth of Palestine. Additionally, the current study combines the different strands of literature and presents their relationship in a single analysis.

Among the others, some key factors that adhered to economic growth and dominantly determined economic health are debt volume, government expenditures, and government investment, etc., as suggested by prior studies. From a growth perspective, the volume of debt acquired by a country has a dynamic impact on the economic growth of a country. It can influence economic growth asymmetrically. In this regard, an empirical study conducted by Spilioti and Vamvoukas (2015) has vowed the positive effect of debt volume on the economic growth of Greece, implying the growth-promising role of debt that can be used in renovation or expansion of different development projects. Some other empirical studies have also supported this notion in alternative data specifications (Bal and Rath 2014; Ndoricimpa 2020; Makhoba et al. 2021). However, some studies have posited the adverse association of debt level with economic status (Daud and Podivinsky 2014; Kharusi and Ada 2018; Asteriou et al. 2021), suggesting the hampering role of debt in determining economic growth. Similar to debt, the literature has contradictory views regarding the role of other economic factors, e.g., inflation, government expenditures, etc., in determining economic growth. Such inconclusive outcomes of the literature argue to further arrange the more empirical studies that specify the dynamic influence of macroeconomic factors on the economic growth of a country.

Due to war and political instability in Palestine, the economy of Palestine is dwindling and has a slow growth rate. In this case, it is necessary to suggest some key factors that can play their vital role in improving economic growth. Given that, the current analysis unveils the role of various economic forces suggested by other studies in determining the economic growth of Palestine. The current empirical analysis tends to find out the dynamic impact of various macroeconomic factors on the growth of real GDP of Palestine. In the current analysis, the volume of GDP is a dependent variable while government debt, total investment, government expenditures, and donations, etc., serve as explanatory variables. For regression analysis, we employ the quarterly data ranging from 2001Q1 to 2020Q4 and apply the *Autoregressive Distributed Lag* (ARDL) model to quantify the regression. The statistical findings imply that government debt, donations, government expenditures, and the unemployment rate have a negative impact whilst credit facilities, inflation, and total investment positively and significantly influence the economic growth of Palestine. Such dynamic impact of various macroeconomic factors depicts that government debt enhances the burden of interest payments and negatively impinges upon the real GDP. Similarly, the receipt of donations may hamper economic health by influencing the institutional efficiency and worsening the efficiency of policy officials due to greater dependence on donations. Government expenditures lead to a deterioration of real GDP for unmatured economies owing to the lower availability of funds to cover such expenditures and the improper management of funds due to high corruption rates. The negative influence of unemployment can be defined as high unemployment, leading to low per capita income and thus less economic activity. Concluding, the current empirical analysis highlights the asymmetric impact of various economic factors on economic growth of Palestine.

In contrast, the positive association of credit facilities with real GDP shows the favorable impact of private funds on the exploration of economic activities that further results in positive economic status. Similarly, the positive correlation of the inflation rate with economic growth suggests that the inflation rate may lead to more economic progress as it encourages the producers on voluminous production due to the price appreciation phenomenon. Lastly, the positive interaction of total investment with economic growth exemplifies the significance of government spending in expediting the attached economic activities. The findings of the study add new thoughts regarding the dynamic impact of various economic factors on the real GDP of Palestine. Our analysis provides robustness to empirical findings of existing empirical studies arranged on other economies of the world and suggests focusing on these factors to achieve the objective of better economic status in Palestine. This study achieves an important research goal regarding the role of various economic forces that can boost or slow down the economic progress of Palestine. In addition, the current analysis can be marked as innovative as it supplements the innovative

evidence by exploring the empirical impact of considered economic factors on Palestine's economy. By employing the modern econometric technique, i.e., ARDL, the current study answers an important research question: what are the possible factors that can boost the economic growth of Palestine and vice versa? The policy officials should pay more attention to such factors that appeared to hamper economic growth and should develop some policy modifications to treat such factors. They should further escalate the other factors, e.g., private credit facilities and more investment to sustain the economic growth.

The other parts of the paper are formed of the following sections: Section 2 illustrates the review of previous studies; Section 3 describes the material and methods; Section 4 presents the main empirical analysis; and Section 5 contains the explanation of these results. Lastly, Section 6 provides the conclusion and suggests some policy implications. The bibliographical detail of references used in the body of the paper is provided at the bottom of the paper.

2. Literature Review

Economic growth is a multifaceted factor that is affected by other factors including external borrowings, total investment, government spending, donations, and inflation rate, etc. In this regard, a number of studies emerged in the literature that tend to explain the impact of such factors on real GDP, commonly known as economic growth. For instance, Kharusi and Ada (2018) examined the correlation between external borrowings and the economic growth of Oman. They have found a negative relationship, implying that an increase in external debt can enhance the burden of interest payments which further hampers economic growth. Supporting this, another study conducted by Abdelaziz et al. (2019) has specified the channel through which external debt deteriorated the economic growth. They have suggested that a higher volume of external debt impedes investment due to costly financing and hence leads to negative economic growth. Similarly, Razzaque et al. (2017) have documented the association between exchange rate volatility and economic growth. The empirical analysis of their study indicated that a 10% decline in the exchange rate may lead to a 3.2% increase in real output, indicating the favorable impact of a lower rate of exchange on economic expansion. The findings of their study appeal for re-considering the exchange rate policy for Bangladesh to achieve the objective of high economic development. Similar effects were also found by another study arranged by Habib et al. (2017) on some other developing economies. An appreciation in the rate of currency exchange (depreciation in the exchange rate) significantly reduced the real GDP (enhanced the real GDP). In view of such literature suggestions, the current study rechecks the role of such factors on the economic growth of Palestine and provides robustness.

The receipt of donations is another factor that can affect the situation of economic prosperity. This effect is more obvious in poor countries or countries bearing the economic status of under-developed or aid intensive (Bayinah 2017). Donations are made in various forms including gifts, monetary help, or other consumable goods that may enhance human well beings in specific regions (Cappellari et al. 2011). In Islamic states, most donations are made in the form of *Zakat*[1]. Some studies have attempted to find its association with economic growth. For instance, Jedidia and Guerbouj (2021) have examined the effect of Zakat inflow on the economic expansion of eight Islamic states and found robust evidence of the favorable impacts of such inflow on real GDP. They have argued that the receipts of such funds can be used to fund investment and other government expenditures that can further augment economic growth. Similarly, another study arranged by Athoillah (2018) has suggested the positive influence of Zakat on economic development and its adverse effect on poverty. However, no specific study was found that explores the direct relationship between donations and economic development, particularly in Palestine.

Some other studies have apparently considered the availability of credit as an important factor to achieve economic expansion. ALZYADAT (2021) studied the impact of bank credit facilities on the non-oil economic growth of Saudi Arabia. The empirical analysis of his study reveals that credit facilities have a favorable influence on extending the economic

activities that eventually lead to positive economic growth. Such credit facilities help in capital formation and financing development projects. Duican and Pop (2015) evaluated the impact of credit facilities on the economic growth of Romania and found the positive influence of such facilities in expanding economic activities. Additionally, the inflation rate has a dynamic impact on economic development. Some studies have argued a positive effect (López-Villavicencioa and Mignon 2011; Law and Singh 2014) while others supported a negative effect of inflation rate on the economic activity levels of an economy (Bick 2010; Bittencourt et al. 2015; Khan and Hanif 2020). The proponents of the inflation rate have argued a threshold point on which inflation may boost economic growth. Beyond this threshold point, inflation mostly impedes economic activities due to the inflationary effect of prices on the demand of consumers which turn the consumption rate to the lower end.

It is necessary for each country to spend a significant amount of funds to finance its running operations. Such types of spending have a dynamic association with the economic development of this country. Given that, Hamdi and Sbia (2013) have found a vigorous relationship between government expenditures, oil revenues, and economic development in the economy of the Kingdom of Bahrain. The empirical analysis of their study suggested that oil revenues are a major source for financing the government spending that may have a negative impact if it exceeded this revenue. They have further conjectured that such spending may impede the economic expansion specifically for oil-dependent economies because such economies are more open to any economic shocks that can enhance the volatility of oil revenue. Another study, arranged by Onifade et al. (2020), has documented the negative impact of expenditures on economic development of Nigeria. Such negative effects of government spending on economic expansion can be supported by the view that spending can create financial stringency for developing countries and thus may reduce the growth of the economy (Ahuja and Pandit 2020).

Some other empirical studies further provide a quantitative assessment of the mixed influence of government investment and unemployment on economic development. For instance, Vedia-Jerez and Chasco (2016) estimated the positive effect of domestic investment on the economic growth of South American economies. They have suggested that economic growth was driven by physical investment in capital accumulation by the government. Nguyen and Trinh (2018) have also supported the similar effects for Vietnam and stated that both public and private investments have positive effects on both short-term and long-term economic growth. Irrespectively, the literature has illustrated the detrimental outcomes of unemployment for economic development. Ahuja and Pandit (2020) have confirmed the negative effect of unemployment on economic expansion in 59 economies from different areas of the globe. However, Sadiku et al. (2015) found robust evidence on the insignificant effect of unemployment on economic growth. Pasara and Garidzirai (2020) have also suggested the insignificant effect of unemployment on economic progress in the short run. Briefly, the literature argued the dynamic impact of various macroeconomic factors on economic growth for different countries of the globe. In the current analysis, we will test such literature findings for the Palestine case. Additionally, the inconclusive findings of previous studies further urge more empirical studies on this theme to be arranged.

Path Analyses

The review of empirical findings of previous studies suggests the following relationships.

Table 1 summarized the empirical findings emerged from a survey of the literature. The suggested relation of a specific variable is purely based upon the literature suggestions.

Table 1. Summary of Literature Survey.

Dependent Variable = Read GDP		
Sr No.	**Variable Name**	**Suggested Relationship**
1	Government debt	Negative
2	Exchange rate	Positive/negative
3	Donations	Not specified
4	Credit facilities	Positive
5	Inflation rate	Negative/positive
6	Government expenditures	Negative
7	Total investment	Positive
8	Unemployment	Negative

Source: literature survey.

3. Material and Methods

3.1. Data

The statistical information of under-analysis variables was collected from the *Palestinian Monetary Authority Online and the Palestinian Central Bureau of Statistics*. In this study, we have used the quarterly data ranging from the initial quarter (Q1) of 2001 to the last quarter (Q4) of 2020. The quarterly data provide more comprehensive views about economic strategies and their accumulative effects on overall economic health. To better exemplify the bond between explained and explanatory variables, the following econometric equation was developed.

$$GDP_t = \beta\circ + \alpha_1 GD_t + \alpha_2 TI_t + \alpha_3 GE_t + \gamma_1 DNS_t + \gamma_2 CPI_t + \gamma_3 EXG_t + \gamma_4 UNP_t + \gamma_5 CRF_t + \varepsilon_t \qquad (1)$$

In Equation (1), the *GDP* is for gross domestic product that shows the total value of all items generated from all resources within an economy during a specific period. The *GD* is an acronym of government debt, illustrating the total volume of internal and external debt. Similarly, *GE* indicates the government expenditures on development and non-development projects. *DNS* is for donations and shows the monetary value of all gifts, charities, and other aids that were received to enhance human development within the country. This amount further demonstrates the dependency of a country on foreign donations. The *CPI* is an abbreviation of consumer price index which shows the annual growth in the prices of daily consumable goods by retail customers. In current study, we have considered the quarterly span; thus, this shows the quarterly increment in prices of goods. *EXG* is the exchange rate which shows the conversion rate of Palestinian currency comparative to the U.S. dollar. The unemployment rate is abbreviated as *UNP*, showing the percentage of the total labor force that are unable to find a job or are out of work. Lastly, the *CRF* depicts the credit facilities to finance the business activities. The brief explanation of variables has also been supplied in Table 2. The measurement of these variables has also been specified by a stream of previous studies (Abdelaziz et al. 2019; Onifade et al. 2020; Farooq et al. 2021). The subscript t shows the nature of variables, i.e., time series, β is constant, and ε_t, a residual term.

Table 2. Variables Specifications.

Variable Name	Title Role	Calculation	Reference
Economic growth	DV	GDP growth rate	(Awad and Karaki 2019)
Government debt	IV	Total debt outstanding (external + internal)	(Kempa and Khan 2016)
Total investment	IV	Total investment is a gross capital formation by the central government	(d'Agostino et al. 2016; Subhani et al. 2022)
Government expenditures	IV	Total amount of expenditures made by federal government into development and non-development projects	(d'Agostino et al. 2016)
Donations	IV	Donations are total amount of funds received in the form of gifts and charity. It further comprises of total funds received for development of human-well beings projects.	(Jedidia and Guerbouj 2021)
Inflation	IV	Proxied by CPI	(Mohseni and Jouzaryan 2016; Subhani et al. 2021)
Exchange rate	IV	It shows the average exchange rate of local currency into dollar amount.	(Guzman et al. 2018)
Unemployment	IV	Percentage of labor force that is not working and jobless.	(Mohseni and Jouzaryan 2016)
Credit facilities	IV	It shows the volume of funds that are available to finance the existing business activities or to extend the established business entities.	(Samargandi and Kutan 2016)

Source: Previous studies. **Abbreviations:** DV = dependent variable, IV = independent variables.

3.2. Variables

Table 2 presents the variables specifications and relevant source.

3.3. Methodology Discussion

The ARDL (Autoregressive Distributed Lag) cointegration technique or bound cointegration technique was initially proposed by Pesaran et al. (2001). The implication of this technique has various advantages over other time-series economics techniques. Nkoro and Uko (2016) stated that, unlike other techniques, the ARDL cointegration technique has not required a pre-test for unit roots. Consequently, this technique is mostly preferred for the cointegrated variables having different order, I (0), I (1) or a combination of both, and robust when underlying variables have a single long-run relationship in a small sample size.

While the long-run relationship among variables has been detected by applying F-statistic (Wald test). Using this approach, the long-run relationship of series is said to occur only when the F-statistics value exceeds the critical value limit. The main advantage of this approach is to identify cointegrating vectors where there are multiple con-integrating vectors. However, this technique is inappropriate in the existence of an integrated stochastic trend of I (2). Testing for unit roots may be appropriate, though not as a necessary condition. Based on forecast and policy stance, it is necessary to determine the conditions for the ARDL cointegration technique to prevent its unfair application and estimation. If the conditions are not met, it will lead the model to inconsistent and unrealistic expectations.

So, the unit root test is applicable to check the stationarity in a time series. This test is before avoiding the presence of spurious regression, as Ouattara (2004) suggests that the bound test in the ARDL cointegration approach is based upon the assumption that the underlying variables are at the order of I(0) or I(1). So, F-statistics provided by Pesaran et al. (2001) based upon the variables at the order of I (2) provide invalid outcomes. Similarly, various other tests are employed to check serial correlation and heteroscedasticity.

The ARDL cointegration strategy will be used if the variables are discovered to be in the order of I (0) or I (1). There are three essential steps to it: The first stage is to establish

the long-run link between the variables by using an error correcting method regression to test for the significance of lagged variables. The error correction mechanism equation will then be created by adding the initial lag of each variable to the equation. An F-test on the significance of all the lagged variables is used to perform a variable addition test. The second step entails calculating the ARDL form of the equation where the optimal lag length will be determined according to standard criteria such as the Akaike Information or Schwartz Bayesian (Sekaran and Bougie 1992). The final step is to calculate the error correction equation utilizing the variables' differences and the lagged long-run solution, as well as the rate of return to equilibrium adjustment.

4. Results

4.1. Descriptive Investigation

In Table 3, we have presented the descriptive statistics of variables. Before formal analysis, we check the normality of data. The statistical value of the Histogram Normality test depicts that data are not normal in its original form. Thus, we apply the natural logarithm to make the data normally distributed. In pursuance of this, the values of variables are presented in logarithmic form. Considering the statistics of descriptive analysis, the mean value of GDP is 3.227 with a maximum value of 3.562. These values show the volume of total GDP in Palestine. As the sample comprises quarterly data for 20 years, the numbers of observations are 80. Among the other statistics, if we focus on statistical values of GDP and government debt, the value of GD is greater than the value of GDP (3.93 > 3.227) suggesting the less capacity of Palestine's economy to pay back its loans. These values further show that Palestine's economy has a high risk of default which further can cause financial panic both in the international and domestic market.

Table 3. Descriptive analysis.

	Mean	Median	Std. Dev.	Maximum	Minimum	Obs.
GDP (economic growth)	3.227	3.284	0.193	3.562	2.874	80
GD (government debt)	3.393	3.337	0.149	3.629	3.146	80
TI (Total investment)	3.441	3.514	0.165	3.615	3.095	80
GE (government exp.)	2.933	2.905	0.171	3.296	2.547	80
DNS (donations)	4.027	4.049	0.138	4.199	3.751	80
CPI (Inflation)	2.409	2.440	0.072	2.485	2.263	80
EXG (exchange rate)	1.070	1.050	0.044	1.167	1.003	80
UNP (unemployment)	1.397	1.403	0.047	1.551	1.227	80
CRF (credit facilities)	3.485	3.479	0.132	4.003	2.974	80

Source: self-estimation. **Description:** most values are in logarithmic form and show the relevant trend of specific variables.

4.2. Correlation Statistics

Table 4 depicts the correlation values among the variables of study. The correlation value of GD is 0.834, showing the high correlation trend with GDP. Similarly, the correlation values of other variables including TI, DNS, CPI, EXG, and CRF are 0.755, 0.875, 0.776, −0.869, 0.849 relatively. The higher correlation values show that most variables are highly correlated with each other due to their similar nature (macroeconomic variables). However, GE and UNP have smaller correlation values as 0.124 and −0.135.

Table 4. Correlation analysis.

	GDP	GD	TI	GE	DNS	CPI	EXG	UNP	CRF
GDP	1.000								
GD	0.834	1.000							
TI	0.755	0.755	1.000						
GE	0.124	−0.216	0.302	1.000					
DNS	0.875	0.891	0.943	0.076	1.000				
CPI	0.776	0.820	0.860	0.198	0.772	1.000			
EXG	−0.869	−0.671	−0.883	−0.280	−0.835	−0.846	1.000		
UNP	−0.135	0.134	−0.161	−0.220	−0.117	−0.112	0.191	1.000	
CRF	0.849	0.941	0.877	−0.101	0.871	0.923	−0.795	−0.026	1.000

Source: self-estimation. **Acronyms:** GDP = GDP growth rate; GD = government debt; TI = total investment; GE = government expenditures; DNS = donations; CPI = inflation; EXG = exchange rate; UNP = unemployment; CRF = credit facilities.

4.3. Regression Analysis

The results of the Augmented Dicky Fuller test have presented in Table 5, confirming that all considered variables of study are integrated at order zero or one. As a result, the ARDL Bound test is used here, with no variable integrated at order 2, which complicates F-statistics.

Table 5. ADF (Augmented Dickey Fuller (Unit Root)) Test.

Variable	Level t-Statistics Prob. *	First Difference t-Statistics Prob. *	Decision
GDP	−0.348 0.911	−3.274 0.019 *	I (1)
Government debt	−1.620 0.467	−3.184 0.024 *	I (1)
Total investments	−1.482 0.537	−5.389 0.000 **	I (1)
Govt. expenditures	−1.941 0.312	−3.580 0.008 **	I (1)
Donations	−2.128 0.234	−2.108 0.034 *	I (1)
CPI	−2.906 0.049 *	−6.192 0.000 **	I (0)
Exchange rate	−4.080 0.010 **	−6.498 0.000 **	I (0)
Unemployment rate	−4.563 0.000 **	−7.292 0.000 **	I (0)
Credit facilities	−3.403 0.048 *	−3.897 0.016 *	I (0)

Note: "The asterisks ** and * showed that the coefficient is significantly different from zero at 1% and 5% probability, respectively." **Source:** self-estimation.

The initial stage in ARDL is to establish lag length criteria, and the shortest lags are ideal for time series analysis in order to prevent losing a degree of freedom. The parameters for selecting the lag order are listed in Table 6.

Table 6. VAR lag order selection criteria (TAX and FDI).

Lag	AIC	SC
0	−31.162	−30.890
1	−54.080	−51.361
2	−56.569 *	−51.403 *

* Indicates lag order selected by the criterion, Akaike Information Criterion (AIC) and Schwarz Information Criterion (SC). **Source:** self-estimation.

Table 7 illustrates that the ARDL model's calculated value is 6.027, which is over the upper bound critical threshold. Thus, rejecting the null hypothesis shows a long-term association.

Table 7. ARDL bounds testing analysis.

Model Estimated	**Model**: GDP = f (GD, EXG, DNS, CRF, CPI, GE, TI, UNP)	
F-Statistics	6.027	
Selected Lag Length (Criteria)	2 (AIC)	
M. H. Pesaran et al. (2001)		
Critical Bound Values	**Lower Bound Value**	**Upper Bound Value**
10%	1.950	3.060
5%	2.220	3.390
2.5%	2.480	3.700
1%	2.790	4.100

Source: self-estimation.

The ARDL model coefficients are shown in the upper half of Table 8. The coefficient of the Error Correction Model, which represents the short-run impact of variables, is provided in the lower section of the table. At a 5% level of significance, the residual term is statistically significant but have a negative sign. An ECM coefficient (−0.089) from the table shows that a short-run disequilibrium can be brought to a long-run equilibrium in a year at a rate of almost 9%. Additionally, the model fulfills all of the specified diagnostic tests. As a result, analytic tests are included at the conclusion of the table to ensure that the appropriate model selection was made.

The probability values in Table 8 depict that government debt has an adverse impact on real GDP at a 1% level. This value implies that a 1% rise in government debt can diminish the economic growth by 39.8%. The coefficient value of donations is −1.262, suggesting a significant but inverse relationship with economic growth. The coefficient values of credit facilities and CPI are 0.369 and 2.714, respectively. Both values depict the significant and positive association of both factors with economic development. However, the coefficient values of government expenditures (−0.323) and unemployment rate (−0.779) suggest the negative association with economic growth. Lastly, the coefficient value of total investments is 0.616, implying the positive and significant contribution of total investments in determining the economic growth of Palestine.

Table 8. ARDL model long-run and short-run analysis.

Variables	Dependent Variable: Economic Growth (GDP)		
	Long-Run Results		
	Coefficient	**t-Statistic**	**Prob. Value**
GD	−0.398	−1.642	0.105 *
EXG	−0.488	−1.108	0.272
DNS	−1.262	−2.107	0.039 **
CRF	0.369	2.092	0.040 **
CPI	2.714	3.543	0.000 ***
GE	−0.323	−2.019	0.048 **
TI	0.616	1.795	0.077 *
UNP	−0.779	−2.136	0.036 **
	Short-run Results		
ECM	−0.089	−3.270	0.001 ***
D (GDP (−1))	0.616	5.561	0.000 ***
D(GD)	−0.035	−1.868	0.066 *
D(EXG)	−0.072	−1.252	0.215
D (EXG (−1))	0.180	3.097	0.003 ***
D(DNS)	−0.112	−2.400	0.019 **
D(CRF)	0.033	1.908	0.061 *
D(CPI)	−0.059	−0.301	0.764
D(GE)	−0.150	−4.505	0.000 ***
D (GE (−1))	0.107	3.053	0.003 ***
D(TI)	0.427	8.834	0.000 ***
D (TI (−1))	−0.304	−5.299	0.000 ***
D(UNP)	−0.009	−0.469	0.640
	Diagnostic Tests		
Test	**F-statistic value**	**Prob. value**	
J-B Normality Test	3.935	0.139	
Breusch-Godfrey Serial: Correlation LM Test	0.852	0.431	
Heteroskedasticity Test: ARCH	1.294	0.225	

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. **Source:** self-estimation. **Acronyms:** GD = government debt, EXG = exchange rate, DNS = donations, CRF = credit facilities, CPI = consumer price index, GE = government expenditures, TI = total investment, UNP = unemployment.

5. Discussion

The objective of the current study is to assess the influence of various macroeconomic factors on the economic growth of Palestine. For empirical analysis, we employ the 20-year quarterly data ranging from 2001 to 2020 and estimate the regression through the implication of the ARDL model. The statistical outputs of this model first state that the volume of government debt has an adverse effect on real GDP. This negative effect can be explained as debt heightened the burden of long-term interest payments and thus hampers growth (Bal and Rath 2014). The growing level of government debt diminishes the growth orientation of an economy as it shows that a country is unable to meet its expenditures from its revenues. Supporting this, a recent analysis arranged by Abdelaziz et al. (2019) has documented the negative relationship between the debt volume and economic development of low-income countries. In addition, government debt accounted

for 79.1% of total GDP in December 2021, which is quite high compared to other economies in the region. As per the statistics provided by the Palestinian Central Bureau of Statistics, the nominal GDP of Palestine reached USD 4.9 billion in December 2021 while the debt level accounted for almost USD 3.87 billion. The debt-to-GDP percentage of Palestine is quite high compared to other countries in the region, as Albania's percentage is 70.3%, Algeria's 36.4%, and Armenia's 63.4%, etc. This high debt-to-GDP ratio can put Palestine's economy in financial distress and can eventually lead to low economic growth. As likely to be government debt, donations have a negative influence on the economic expansion of Palestine. The reliance on donations does not fix the need for funding and can inhibit the efforts towards escaping from economic distress. More dependency on donations can hinder the efforts made by the government for self-sufficiency and thus create a cycle for low economic growth. No specific study was found which directly explains the effect of donations on economic growth. However, some studies have explained the impact of Zakat on economic growth (Bayinah 2017; Athoillah 2018; Jedidia and Guerbouj 2021) and noted the dynamic impacts of donations on the economic status of the recipient country.

Following empirical findings, credit facilities show a positive association with economic growth. The availability of more funds can treat the depressing situation of an economy as it provides the monetary fuel for many economic sectors that were less developed due to them lacking monetary sources (ALZYADAT 2021). Additionally, better credit facilities have an unconditional role in boosting the economic activities that further achieve better economic growth (Awad and Karaki 2019). In addition to this, the statistical analysis further depicts that the inflation rate measured with CPI has a favorable effect on economic growth. Unlike the common literature findings suggesting the negative effect of inflation on economic progress (Bick 2010; Aloui et al. 2018; Mandeya and Ho 2021), this positive influence somehow explains the specific role of inflation in determining economic growth. This positive effect can also be comprehended as being because high inflation may lead to the encouragement of the industrial sector through future price appreciation and thus can enhance domestic production (Farooq et al. 2021).

As the analysis shows, government expenditures have a negative influence on the real GDP of Palestine. Contrary to the Keynesian approach, in which he suggested that government expenditures may enhance the employment rate and economic growth through more demand for goods (Abouelfarag and Qutb 2021), some studies show that government expenditures may lead to a fiscal deficit (Kiran 2011; Brady and Magazzino 2019). A country having more expenditure than its revenue may suffer from negative economic growth because it urges policy officials to enhance tax rates to meet the expenditure that can further impede the growth of various sectors. Such a situation is more explicit in underdeveloped and aid-intensive countries such as Palestine that are already suffering from fiscal deficit. The statistical analysis further shows that total investment has a constructive relationship with economic development. This positive contribution of investment can be explained as it adds the new stock of capital which helps in boosting the economic activities (Pasara and Garidzirai 2020). Additionally, the investment shifts the overall production system of an economy upward. The economy of Palestine is not yet matured and is still in a progressing state. Therefore, any expenditures can put the economy into financial distress. However, total investment can enhance the economic growth as such expenditures truly support other economic operations, hastening economic growth.

Lastly, the current analysis shows that unemployment is negatively linked with economic growth. Both factors simultaneously affect each other, i.e., some studies argue the effect of economic growth on unemployment (Peretto 2011; Boubtane et al. 2013; Almutairi 2020) while others tend to measure the effect of unemployment on economic growth (Sadiku et al. 2015; Pasara and Garidzirai 2020). A higher unemployment rate in a country can lead to low per capita income and thus a lower consumption rate. The lower consumption behavior further impedes economic activities and thus finally leads to negative economic growth (Ahuja and Pandit 2020). Summarizing, our empirical analysis provides

robust evidence on the dynamic impact of various economic factors on the real GDP of Palestine.

6. Conclusions and Strategy Suggestions

This study tends to explain the liaison between economic growth and other macroeconomic factors including government debt, donations, exchange rate, inflation, credit facilities, investment, and unemployment rate. From a literature perspective, the relationship between economic development and other factors has been discussed widely since the 19th century, as each country is continuously trying its best to make itself more prosperous. Given that, the current study aims to explore the dynamic impact of various factors on the economic health of Palestine. To achieve the objective, the regression analysis was arranged on 20-years quarterly data for the years 2001 to 2020. The empirical relationship between the variables was estimated by employing the Autoregressive Distributed Lag (ARDL) model. The statistical analysis illustrates that government debt, donations, government expenditures, and unemployment rates have negative impacts while credit facilities, inflation, and total investment have positive contributions in determining the economic growth of Palestine. Such specific association of each factor with economic growth indicates both the stimulatory and the detrimental effects of specific factors on Palestine's economy. The Keynesian school of stimulating economic growth through government expenditure fails in the case of the Palestinian economy, as the results support opposite opinions.

The current empirical analysis suggests important policy recommendations to economic policy officials. Policy officials should make careful decisions on the volume of debt and donations, as both factors hamper economic growth. Additionally, it is further recommended that the government should be cautious about its expenditures, as more expenditures may harm economic growth. However, focusing on physical capital accumulation through investment and ensuring the availability of more credit facilities can uplift the Palestinian economy. The emergence of such policy recommendations is purely based on statistical results. Our analysis adds new thoughts in the extant literature of economics regarding the dynamic effect of macroeconomic factors on the economic development of Palestine. This study is limited to analyzing only one economy, i.e., Palestine. In the future, more studies can be conducted by reviewing other economies that have similar arrangements or even have diverse economic states. Such arrangements can provide comparative views about the dynamic effects of macroeconomic factors on economic health.

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Note

[1]   Zakat is a third pillar of Islam in which specific portion of total wealth is given to poor peoples or needy society.

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