

The Impact of Public Debt on Economic Growth in Palestine (2005-2019)

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Abstract

This study aimed at examining the impact of public debt and domestic investment on economic growth in Palestine for the period 2005-2019. The study used multiple linear regression to examine the study hypotheses. The study found diverse and, in some cases, inconsistent evidence on the relative impact of public debt on economic growth. The results show that there is a positive long-run relationship between public debt and economic growth. The study concluded that public debt is positively correlated with domestic investment. With the stability of other factors, the increase domestic investment is positive and strongly significant. In fact, a 1% variation of physical capital leads to an increase of 0.33% of economic growth in Palestine. The effect of public debt on economic growth is also positive, may be for two reasons: either because the palestinian public-debt-to-GDP ratio did not reach a threshold beyond which public debt significantly lowers economic growth or because most of palestinian public debt is domestic debt.

Keywords: gross domestic product, economic growth, public debt, domestic investment, Palestine.

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1. Introduction

Economic growth is the best measure of overall economic performance, as rising economic growth leads to higher national income, thus increasing the welfare of society.. It represents the total value of goods and services produced from locally existing resources over a period of time, usually a year. Economic growth is one of the basic objectives that countries seek to achieve. It is one of the prerequisites for improving the standard of living of societies. It is also an important indicator of economic well-being. Economic growth is thus linked to a number of basic factors in society; these factors include the availability of high-efficiency institutions and appropriate economic, political, monetary and financial decisions.

Economic growth is of great importance to countries because it supports a large number of important sectors in the country such as education and health. It also contributes to support the balance of payments, increase the level of income and contribute effectively to solving the problem of unemployment. There are many factors that affect economic growth, including public debt and public investment.

1.1. The Relationship between Public Debt and Economic Growth

Public debt is the financial liabilities of the public (government) sector. It represents the total outstanding debt (bonds and other securities) of a country's central government. It is often expressed as a ratio of GDP. Changes in government debt over time reflect primarily borrowing to finance government deficits. A deficit occurs when a government's expenditures exceed revenues. Public debt is the total amount owed by government to internal as well as external sources to finance its deficit. It is the sum of all past deficits. Public debt is an important source of resources for a government to finance public spending and fill holes in the budget, and is used by many countries are unable to cover their expenses and repayment of all loan installments and interest. Public debt is divided into two parts: internal debt and external debt and external public debt has the largest share of the country's economic policies. If debt is owed to domestic lenders, it is included in the country's internal debt. If owed to foreign lenders, it is included in the country's external debt. The increase in the volume of public spending with the emergence of financial crises and economic recession in developing countries led to an increase in public debt. This growth of public has raised the concerns about the impact of public debt on economic growth, because of its negative effects on the process of economic and social development. Moreover, when the debt rises beyond the overall size of the economy, the sustainability of public debt becomes a serious issue..As a result of continuous borrowing, coverage of shortcomings in domestic savings by borrowing has led to a high balance of public debt (Al-Adayleh et al., 2015). On the other hand, developing countries are not utilizing foreign debt in a productive way which in turn affects their economic growth negatively. This might happen especially when external borrowing is more than 90% of the GDP (Presbitero, 2012). Most empirical studies have shown long term negative effect of public debt on economic growth. Reinhart and Rogoff (2010) studied the relationship between high public debt, growth and inflation in 44 countries using a panel framework. They found that a ratio of public debt to GDP in excess of 90 percent has a negative impact on economic growth. Despite the fact that the economic theories do not state the effect of public debt on economic growth explicitly, some theories suggest

that a reasonable level of public debt is acceptable to enhance economic growth (Pattillo, Ricci, and Porison 2002) provided that this debt is utilized in productive investments with rates of return higher than the interest rates of borrowed funds; otherwise a risk of default is more likely to take place.

1.2. The Relationship between Domestic Investment and Economic Growth

Domestic investment, or gross fixed capital formation, has in terms of theory recognized as an essential component to facilitate economic growth and employment. Keynes argued that new and additional investment increases the aggregate demand in the economy (Tobin, 1965). An increase in domestic investment occurs when existing firms make new investment or new domestic investors enter the. Theoretically, an increase in investment is expected to provide more jobs or increase the employment level. Meanwhile, higher growth rate of the economy has also been argued to stimulate domestic investments. As a result, from theoretical point of view, there exists bi-directional causality between investment and economic growth. Empirical literature has established a robust positive relationship between investment and economic growth (Levine & Renelt, 1992; Mankiw et al., 1992). In this view, increased growth is triggered by higher investment rates or higher capital formation in the form of investment in equipment. Blomstrom et al. (1996) found that economic growth Granger-cause investment, but investment does not Granger-cause economic growth. Most of the existing empirical studies have mainly focused on the nexus between foreign direct investments and economic growth.

1.3. Study Problem

The Palestinian economy is an emerging economy. Many of its components depend mainly on external support. Despite the huge external support, the Palestinian general budget has suffered from an almost permanent deficit. Therefore, the need has emerged to study the structure of the net public debt (NPD) and explain its impact on economic growth (EG), whether the debt internal or external, this study attempts to answer the following questions: 1. What is the impact of public debt on economic growth in Palestine? 2. What is the impact of domestic investment on economic growth in Palestine?

1.4. The Importance of the Study

The importance of the study is coming from the importance of economic growth, public debt and domestic investment in Palestine, in addition to trying to reach conclusions and recommendations that would benefit economic and political decision-makers in developing policies and strategies that contribute to improving economic growth.

1.5. Study Objectives

This study seeks to achieve the following goals:

1. Identifying the size of the internal and external debt and which of them did Palestine depended on during the study period.
2. Identifying the EG rates in Palestine during the study period.
3. Identifying the effect of domestic investment on EG in Palestine during the study period
4. Identifying the effect of public debt on EG in Palestine during the study period.

2. Literature Review

There is a set of empirical studies that examine the impact public debt on economic growth. These studies have investigated the relationship between public debt and economic development in developing countries, with most studies dealing with the economic effects of public debt on the economic activity of the country in. The results of these studies aimed to highlight the importance of analyzing the relationship between public debt and economic growth in each country. Empirical studies showing a correlation between public debt and economic growth are abundant. Swamy (2020) found a negative relationship between government debt and growth. According to Swamy's study, the point estimates of the range of econometric specifications suggested that a 10 percentage point increase in the debt- to- GDP ratio is associated with 23 basis point reduction in average growth. Asteriou et al. (2020) found that an increase in government debt is negatively associated with economic growth in both the short and long-run. A 1 percentage point increase in the government debt- to- GDP ratio will lower economic growth by 0.012 to 0.125 percentage points. Al-Daghmi (2019) Al-Dughme (2019) examined the impact of public debt and public investment on economic growth in Jordan for the period 1990-2017. The study concluded that public investment has a positive and statistically significant impact on economic growth, while public debt has a negative and statistically significant impact on the economic growth in Jordan.. The found that an increase in the public debt by 1% leads to a decrease in economic growth in Jordan by 11%. The study also found that public investment has a positive and statistically significant impact on economic growth in Jordan, i.e., with the stability of other factors, the increase of public investment by 1% leads to an increase in economic growth in Jordan by 0.10%. Abdrahman et al.

(2019) argued that there is no mutual consensus on the relationship between public debt and economic growth. The relationship can be positive, negative or even non-linear. Saungweme et al (2019) examined the impact of public debt on economic growth in both developing and developed economies. They concluded that theoretical models and empirical studies yield inconclusive results on the relationship between public debt and economic growth.

Lotto and Mmari (2018), using the Ordinary Least Square (OLS) regression method to estimate the effects of domestic debt on economic growth in Tanzania, found that there was an inverse but insignificant relationship between domestic debt and the economic growth in Tanzania as measured by GDP annual growth. Kim et al., (2017) of corruption. The sign of the marginal effect is negative in corrupt countries, but public debt enhances economic growth within countries that are not corrupt, i.e., highly transparent. Al-Nuwairan and BaniKhalid (2017) tested the relationship between external debt and economic growth in Jordan and examined the effect of the ratio of external indebtedness on the annual growth in the average per capita GDP for the period (1991-2015). The study concluded that there is no statistically significant effect of external indebtedness on economic growth due to the presence of an interval between capital projects funded through external financing and the achievement of positive growth rates with a negative impact represented by the increase in the cost of external financing. Nooh (2016) showed that there is a negative impact of public debt on economic growth, and that the negative impact of external public debt and domestic public debt on the economy is the same. Al-Habashneh, et al. (2015) found that the impact of public debt on economic growth was negative in the long run which was compatible with economic theory and previous studies. Zouhaier and Fatma (2014) found that the ratio of public debt to GDP is statistically significant and negatively affected growth. They concluded that an increase in the debt ratio by 10% points would cause real GDP growth to fall by 0.28 percentage points. Al-Shammari and Kazem (2015) examined the indicators of public debt and the resulting effects in Egypt. The results summarized the positive effect of the internal debt in strengthening public spending and thus the increase in the level of domestic credit, which was reflected in the increase in investment rates and the achievement of growth in the domestic product at acceptable rates, which reflected the rationality of using the internal debt. As for the impact of external debt service, it was negative for exports and was reflected in a slight decrease in the current account position. Panizza and Presbitero (2012) empirical study supported the existence of a correlation between the two variables (debt and growth) without a causal effect of debt on growth. Atique and Kamran (2012) compared the growth implications of domestic and external debt for Pakistan over the period of 1980-2010. They found that both domestic and external debt are significantly inversely related to GDP growth. Abbas and Christensen (2010) studied the Granger causality between domestic debt and GDP. Their results showed that even though moderate levels of domestic debt enhanced growth, levels exceeding 35% of GDP negatively affected it.

Muhdi and Sasaki (2009) examined the macroeconomic effects of external and domestic debt in Indonesia from 1991 to 2006: using OLS estimation they showed the positive impact of external debt on investment and economic growth, as well as a significant crowding out of domestic debt on investment, due to the reduction of capital stock and total production. Several empirical studies that examine the impact of public debt on economic growth found that this negative relationship exists only after a certain debt to-GDP ratio. Smyth and Hsing (1995) indicated that the optimal debt ratio is 38.4% when debt held by the public sector and 48.9% for total debt. Pattillo et al. (2002) concluded that the negative impact of external debt on per-capita GDP growth exists only when the net present value of debt levels are above 35%-40% of GDP. Reinhart and Rogoff (2010) showed that the relationship between government debt and real GDP growth was weak for debt/GDP ratios below a threshold of 90% of GDP. Kumar and Woo (2010) examined the impact of high public debt on long-run economic growth, based on a panel of advanced and emerging economies' data for a period of almost four decades. The empirical results suggested that on average, a 10% point increase in the initial debt to GDP ratio was associated with a slowdown in annual real per capita GDP growth of around 0.2% points per year.

3. The structure of NPD and EG in Palestine

3.1. Economy growth (EG)

Economic growth is the best measure of overall economic performance, as rising economic growth leads to higher national income, thus increasing the welfare of society. An economy that is experiencing economic growth is better able to meet people's wants and resolve socioeconomic problems. Economic growth is defined as an increase in average real per capita income over time (Al-Hammoudi, 2015). If total income growth rate exceeds the rate of population increase, then Individual's standard of living improves.

3.2. Net Public Debt (NPD)

National or public debt is essentially the total accumulation of the deficits (minus the surpluses) the government has incurred through time. The NPD is defined as the amount of money a country obtains from internal or external sources and undertakes to repay it and pay interest on it according to certain conditions.

3.3. The Evolution of Palestinian Indebtedness Size

Table 1 below summarizes the evolution of Palestinian public debt. It is notable that in 2020, public debt threshold reached a record high of almost \$3 billion, while in 2020, internal debt witnessed a historic leap of \$2,115 million. Table 1 also shows an increase in PA public debt since the PA first budget in 1998, with a growth rate of 36%. The PA's dependence on loans to finance the budget deficit continued until 2002, which witnessed a 14% decline compared to 2001. In the PA's early years extending from 1997 to 2000, the average foreign debt was at 52.9% of total public debt. However, from 1997-2011 external debt acquired the largest percentage of total public debt, almost 80% in 2002 and 72% in 2003. In 2007, public debt went up from \$1092 million dollars to \$1451.4 million dollars which is an increase of 32.9% from 2006. This was because the PA was subject to a financial blockade by Israel and donor countries in rejection to Hamas's victory in the legislative elections in 2006. The clearance revenues crisis in 2019-2020 was accompanied by an almost complete PA dependence on loans from banks to cover its financial needs; most notably to cover 50% of the employee salaries, due to its reliance on the emergency budget. According to Table (1), public debt balance increased from about 403.3 million dollars in 1997 to \$2795.2 million dollars at the end of 2019. In 2019, the balance of the NID was 1577.2 million dollars, or 56.4% of the NPD, and the balance of NED was 1218 million dinars, 43.5% of the NPD. Analysis of public debt in developing countries has traditionally focused on external debt..

Table1.EvolutionofNPD(NID&NED)sizeinPalestine(1997-2019)

Year	Netpublic debt (NPD)	Thegrowthratein Net publicdebt***	Netinternal debt (NID)	The growthrateininternaldebt***	Netexternal debt(NED)	Thegrowthratein Net externaldebt***
1997	403.3	---	254.5	---	148.8	...
1998	548.3	35.9%	324.6	27.5%	223.7	50.3%
1999	648.5	18.2%	355	9.3%	293.5	31.2%
2000	863	33%	342.8	-3.4%	520.1	77.2%
2001	872.6	1.1%	312.9	-8.7%	559.7	7.6%
2002	749.1	-14.1%	151.9	-46.9%	597.2	6.7%
2003	849.7	13.4%	238.7	57.1%	611	2.3%
2004	1002.3	17.9%	391.2	64.1%	611	0.1%
2005	1196.9	19.4%	572.6	46.3%	624.3	2.2%
2006	1092	-8.8%	462.6	-19.3%	629.4	0.08%
2007	1451.4	32.9%	417	-9.8%	1034.4	64.3%
2008	1557.4	7.3%	523.1	25.4%	1034.4	0.02%
2009	1736.1	11.5%	649.2	-10.3%	1086.9	5.0%
2010	1882.8	8.4%	839.6	29%	1043.3	-4.0%
2011	2212.9	17.5%	1098.6	30.8%	1114.3	6.8%
2012	2482.6	12.4%	1384.7	26.1%	1097.9	-1.8%
2013	2376.3	-4.3%	1267.6	-8.4%	1108.7	0.09%
2014	2216.3	-6.7%	1128	-11.1%	1088.9	-0.01%
2015	2537.3	14.5%	1466.5	30%	1070.8	-0.02%
2016	24837	-2.1%	1439.8	-18.2%	1043.9	-0.02%
2017	2543	2.4%	1501.1	4.2%	1041.9	-0.01%
2018	2369.5	-6.8%	1337.8	-10.8%	1031.7	-0.09%
2019	2795.2	18%	1577.2	17.9%	1218	18.1%
2020	2,998	7.2%	2,115	34%	1,215	-0.002%

Source:Palestinian Monetary Authority.

Table(2)below summarizes theevolution of PalestinianGDPandnetpublicdebt (both internally and externally)fortheperiod1997-2019(both in Millions dollars). Public debt is defined as the outstanding balance of unpaid financial government commitments, and it is divided into two parts:

1. External debt: This includes the financial obligations the government has to pay in repayment of the money it has borrowed from countries, agencies and international institutions.
2. Internal debt: This includes the financial obligations the government has to pay in repayment of the money it has borrowed through government bonds, or from local banks or other local financial institutions. Starting in 1995, the first year when the PA assumed its official duties, Palestinian public debt reached \$83 million, and reached \$300 million in 1996, then it increased to \$648 million in 1999.

External public debt ratio represented in borrowing from international bodies throughout 1995-1999 reached almost 50% of the total debt. From 1997-2011, most of the Paestnian public debt came from loans contracted with external parties.From 2012-2020, most of the Paestnian public debt came from loans contracted with internal parties.Table (3) below summarizes theevolutionofindebtednessvolume(both

internally and externally) as a percentage of Palestinian's GDP. The *debt-to-GDP* ratio measures the proportion of a country's national *debt* to its gross domestic product (*GDP*).

Table 3. Evolution of indebtedness size as a percentage of GDP (1997-2019)

Year	NID/GDP	NED/GDP	NPD/GDP
1997	6.5%	3.9%	10.4%
1998	8%	5.5%	13.5%
1999	8.3%	6.9%	15.2%
2000	8%	12%	20%
2001	7.8%	11.%	19.2%
2002	4.2%	16.%	21%
2003	6%	15.%	21.4%
2004	8.5%	13.%	21.8%
2005	11%	12.%	23.3%
2006	8.6%	11.%	20.4%
2007	7%	18%	25%
2008	7.2%	14.%	21.3%
2009	8%	13.%	21.4%
2010	8.6%	10.%	19.4%
2011	10%	10%	20%
2012	11.%	9%	20.3%
2013	9.4%	8.2%	17.6%
2014	8.1%	7.7%	15.8%
2015	10.%	7.6%	18%
2016	9.3%	6.8%	16.1%
2017	9.3%	6.4%	15.7%
2018	8.3%	6.3%	14.5%
2019	9.2%	7.1%	16.3%

Source: Palestinian Monetary Authority.

4. Methodology of Research

This study is based on the use of analytical descriptive method to investigate the relationship between NDP/GDP and NPD. Data analysis process is dependent on the base null hypothesis testing, and the use of a Linear Regression Equation.

4.1 Study model

This study was based on the following model in examining the study hypotheses:

$$GDP = B_0 + B_1 \ln NPD + B_2 \ln DI + \varepsilon_t$$

LnNPD (Net Public Debt): The natural logarithm of public debt.

LNPI: (public investment): - The natural logarithm of Domestic investment.

$B_1 + B_2$: - coefficients. •

ε_t : - The error term.

4.2. Study Hypotheses

This study examines the following hypotheses:

H₀₁ There is no statistically significant effect at the level of ($\alpha \leq 0.05$) of the public debt on economic growth in Palestine.

H₀₂ There is no statistically significant effect at the level ($\alpha \leq 0.05$) of Domestic investment on economic growth in Palestine.

4.3 Data Sources

data from the Palestinian Central Bureau Of Statistics is used. The correlation test was relied upon to examine the existence of a linear relationship between the variables.

Table (5) shows that descriptive statistics were extracted from 15 observations representing 15 years, as the descriptive statistics for each year differ from each others

Table 5: Descriptive statistics

	LnGDP	LnNPD	LnDI
Mean	4.0239	3.2981	3.3063
Median	4,0867	3.3457	3.3154
Maximum	4.2311	3.4500	3.6600
Minimum	3.7111	3.3044	3.0600
Std. Dev.	0,1950	,1281	0.2250
Skewness	-0.6300	-.9231	0.1066

Table (6) shows the variables included into the model. That is, which variables are acting as predictor variables or Independent Variables (IVs). In this case we have included two predictors: NPD (Net Public Debt) and Gross Investment (GCF).

Table 6: Variables Entered/Removed.

Variables Entered/Removed ^a			
Model	Variables Entered	Variables Removed	Method
1	NPD ^b		Enter
a. Dependent Variable: GDP			
b. All requested variables entered.			

Table (7) displays the information about how the variables relate to each other. The correlation coefficients (r) can be considered to be a measure of the quality of the prediction of the dependent variable. The coefficient of determination (R^2) value reveals the proportion of variation in the dependent variable that is explained by the independent variables. It is clear that there is a strong relationship between NPD, GCF and GDP, where $R = .988$, and $R^2 = .977$, with Std. Error of the Estimate = .03056, and the corrected determination coefficient (adjusted $R^2 = 0.973$), which means that the public debt and GCF were able to explain 97.3 % of the GDP growth, and the rest was attributable to other factors. A high coefficient is an indicator of a better goodness of fit for the observations

Table 7: Model Summary.

Model Summary ^b									
Model	R	R^2	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.988 ^a	0.977	0.973	.03056	.988	250.455	2	12	0.0000
a. Predictors: (Constant), Log NPD, Log NDI.									
b. Dependent Variable: GDP									

The F-Value = 250.455 is associated with very low P-value (0.0000). The F value in the ANOVA. Table (8) below tests if the overall regression model is a good fit for the data. Therefore, the regression model is a good fit of the data and statistically significantly.

Table 8: ANOVA: Variance analysis for impact of public debt on GDP.

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.468	2	.234	250.495	.000 ^b
	Residual	.011	12	.001		
	Total	.479	14			
a. Dependent Variable: GDP						
b. Predictors: (Constant), LnNPD, Ln NDI						

Table (9) shows the results of the regression. The first hypothesis, which states that there is no statistically significant effect at the level of ($\alpha \leq 0.05$) of the public debt in economic growth in Palestine, is rejected and accept the alternative hypothesis that states there is a statistically significant impact of public debt on economic growth in Palestine. The results also showed that there is a positive and significant effect of public investment on economic growth in Palestine, where the coefficient of the effect is 0.330, i.e., with the stability of other factors, the parameter refers to the tendency. The coefficient of impact is 0.330, i.e., with the stability of other factors, the increase of public investment by 1% leads to an increase in economic growth in Palestine by 0.33%. Consequently, the second sub-hypothesis, which states that there is no statistically significant effect at the level

of ($\alpha \leq 0.05$) for public investment in economic growth in Palestine is rejected and the alternative hypothesis that there is a statistically significant effect of public investment in Palestinian's economic growth. . By applying the linear regression equation, it was possible to derive the following equation: $GDP = 1.468 + 0.894 \ln NPD + 0.330 \ln NDI$.

Table 9: Results of model estimation.

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.034	.245		-.140	.891
	lnNPD	.894	.130	0.619	6.896	.000
	Ln NDI	.330	.074	0.401	4.469	.001

a. Dependent Variable: GDP

5. Conclusion

The past researches concluded positive relationship among the domestic and external debt with economic output whereas some concluded an inverse relationship. This was because this study is country specific. The effect of public debt on economic growth is positive, may be for two reasons: either because the palestinian public-debt-to-GDP ratio did not reach a threshold beyond which public debt significantly lowers economic growth or because most of palestinian public debt is domestic debt. The data analysis also showed that there is a and significant effect of public debt on economic growth in Palestine, on one hand. On the other hand, The results showed a positive and significant effect of domestic investment on economic growth in Palestine.

6. Recommendations

Based on the findings, the study recommends that:

1. The public debt has had a positive impact on economic growth in Palestibe. Therefore, the study recommends that political and economic decision-makers work to limit the expansion of public debt .
2. The results have shown that domestic investment has a positive impact on economic growth in Palestine. Therefore, the study recommends that political and economic decision-makers work to expand public investment to ensure that it has a positive impact on economic growth in Palestine.
3. The study recommends that researchers undertake further studies on the impact of public debt represented by public external debt and internal public debt on economic growth in Palestine.

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