

Impact of External Debt on Economic Growth of Pakistan: An Empirical Evidence

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Abstract

Pakistan has yet to be able to raise enough money to finance its budget over the years. As a result, the issue of twin deficits surfaced, and the government is now forced to rely on domestic and foreign debt to fund its developmental initiatives. The benefits of public debt stem from the fact that, in economies with limited resources, debt financing, when done correctly, boosts growth and increases the ability to service and repay public debt. This study aims to examine the effect of external debt on Pakistan's economic growth using data from 1985 to 2019. To estimate the model, an Augmented Dickey-Fuller (ADF) test was used to determine the unit root of the data. The ADF test results indicate that the empirical model's variables become stationary at the level. Based on the ADF results, the data is subjected to Johansen's cointegration test to ascertain the long-run relationship between the variables. Similarly, an Error Correction Model (ECM) approach was used to examine the short-run relationship between the variables. An ARDL bound test was used to check long and short-run relationships between independent and dependent variables. The study's primary conclusion is that external debt detrimentally affects Pakistan's economic growth. Additionally, other control variables, such as life expectancy, exports, and foreign direct investment inflows, remained statistically significant in the positive direction. The model's control variable results indicate that strategies promoting exports, foreign direct investment, and increasing health expenditures can all contribute significantly to Pakistan's economic growth. Policymakers should execute appropriate policies to reduce external debt, enhance export volume, and attract more foreign investment, which would help the country thrive economically. The study further suggested that to improve economic growth, Pakistan should focus on investment projects, and there is a need to implement better policies for foreign debt utilization.

Keywords: External Debt, Economic Growth, ADF, ARDL, Exports, Pakistan.

Introduction

External debt load is a fiscal feature that is common in underdeveloped countries. External loans stabilize the economy when domestic savings are low, which is why economies borrow money. Apart from Pakistan's high debt burden, the World Bank has classified Pakistan as a highly indebted country. Ali and Mustafa (2012) state that Pakistan's current and forecast debt levels need to be revised. Gross foreign debt, invoiced to nonresidents of the economy and not contingent debt, is the most prominent measure of current obligations at any particular time (World Bank, 2015). Following the World Bank's definition from 2015, external debt is "debt owed to a nonresident repayable in foreign currency, goods, or services; external debt may be long-term (public and publicly guaranteed debt, as well as private non-guaranteed debt) or short-term (commercial debts and International Monetary Fund (IMF) loans)." Economic advancement and economic development are sometimes different. However, in most cases, economic growth leads to a rise in the per capita income or the wealth of the nation's families. Economics is raising a country's

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standard of living (Irum et al., 2018). Understanding public debt and economic growth is critical. In either case, public debt is used to finance government deficits or to achieve the government's economic and social goals, most notably to close the gap between savings and investments.

All countries must pass through successive stages of economic growth, according to Rostow's stages of growth model (1960). The model is divided into five stages: traditional society, prerequisites for take-off, take-off, drive to maturity, and the age of high mass consumption. We need to find out whether government debt promotes growth. Regarding speculation and development, there is no rational conflict between economists who believe climate financing the state's costs through external debt is reasonable, shocking, or equitable. Classical economists contended that public debt-burdened the community and ultimately reduced investment. According to the neoclassical school of thought, public debt is detrimental to economic growth, whereas the Ricardian school views government debt as equivalent to future taxes (Barro, 1974). According to Todaro (1988), countries had almost no external debt from the 1930s to the 1970s, owing mainly to foreign governments and international financial institutions lending to developing countries. The study titled 'Economic development in a cross-section of countries' establishes a link between human capital and personal income growth rate per person.

Countries with a high level of human capital will invest more in their GDP. Economic development was inversely proportional to government consumption and positively proportional to public investment. Positive correlations were found between growth rate and political stability, while negative correlations were found between growth rate and market distortions (Barro, 1991). Most economic theories emphasize the negative impacts of government debt on economic development, although a few ideas also call for effective growth improvement (Boboye & Ojo, 2012). They determined that the loan may be used to finance a profitable project with a higher return than the borrowed debt's interest rate. The enormous external debt of some emerging nations is a severe barrier to those making financial decisions. Public debt is an essential cause of instability for the fiscal imbalance and lack of resources. Keynesian theory states that an amount of foreign debt utilized to reduce the fiscal deficit will aid the economy's growth. Economic growth will be hampered if there is a debt surplus (Jebran et al., 2016). Governments in emerging nations use public debt to fund their citizens' consumption. Economics teaches us that prudent and efficient resource management is the most reliable way to stimulate economic growth. However, inefficient use of public debt, on the other hand, would restrict national economic growth and put the economy to a standstill (Lotto & Mmari, 2018). Domestic debt, on the other hand, has a lower influence since just the hands are changed. However, the debt remains within the limits. Remittances, international aid, and governmental debt are significant sources of income for Pakistan and other low-income nations. In 2016, Pakistan's GDP was 282.9 billion dollars; in 2017, the country owed 228.92 billion dollars. At the end of February 2018, the stock of external debt and liabilities (EDL) was USD91 billion, of which USD69.3 billion was foreign public debt (Pakistani Government, 2018).

Problem Statement

To address Pakistan's economic growth challenges and reduce its public debt, this initiative will assist in resolving the debt load and its economic consequences. The findings and recommendations will assist policymakers in taking some feasible actions in the proper usage of resources and debts in order to achieve better results.

Objectives of the Study

- To examine the effect of external debt on the economic growth of Pakistan.
- To investigate the causal relationship between external debt and economic growth.

Literature Review

Several studies have been undertaken to categorize and validate the link between external debt and a nation's growth, utilizing different econometric models and statistical methods. A few research show a substantial negative link, while others may not be able to show any outcomes at all. Numerous studies have established varying relationships between economic growth and external debt. For example, Sajjad et al. (2018) conducted a study to determine the impact of foreign debt on Pakistan's economic growth. The study covered the years 1980 to 2016. Economic growth was used as the dependent variable in the empirical model, as measured by the GDP growth rate (annual). The independent variables were human capital, exports, and foreign direct investment (FDI). The study concluded that foreign debt has a sizable impact on economic growth.

Similarly, human capital, exports, and foreign direct investment positively affected economic growth. The empirical evidence suggests a policy measure. Pakistan's sustainable development requires a reduction in adverse external debt shocks through the implementation of active management policies.

Kasidi and Said (2013) conducted a study to ascertain the effect of external debt on Tanzania's economic growth from 1990 to 2010. Economic growth was used as the dependent variable in the empirical model. External debt and debt service were independent variables. The study demonstrates that external debt and debt service had a sizable impact on GDP growth. The total external debt stock has a beneficial effect of approximately 0.36939, while debt service payments have a detrimental effect of approximately 28.517. The cointegration test demonstrates no long-run relationship between external debt and GDP. The study's policy recommendation was that the government pay closer attention to its debt management profile, particularly its expenditure items. The study sought further evidence on the effect of external debt on economic growth in Nigeria. Time series data on external debt stock, actual gross domestic product, trade openness, gross fixed capital formation as a percentage of GDP, and data on inflation and exchange rates were obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin and World Bank indicators. The study set out to test for both the long-run and short-run relationship and present further evidence on the relationship between external debt and economic growth. The Autoregressive Distributed Lag (ARDL) Model was employed as a technique of estimation in the study, and the results led to a finding that the external debt contributed negatively to growth in Nigeria based on data from 1981 through 2016, which was in line with Ayadi and Ayadi (2008). The study recommended, amongst others, the need for accountability in governance, a sound macroeconomic policy environment, proper acquisition and use of debt solely for productive reasons, and the enhanced exportation of domestic products.

Al-Tamimi and Jaradat (2019) have influenced a study on the impact of external debt on Jordan's economic growth. The study took place between 2010 and 2017. Economic growth was the dependent variable, as measured by the GDP rate. GDP and GDP growth rate were used as independent variables. The study confirms previous research by predicting that foreign debt negatively and significantly affects economic growth. The policy has shifted to relying on alternative sources of financing, such as foreign direct investment.

Awan and Qasim (2020) examined the impact of external debt on Pakistan's economic growth. The study covered the years 1980–2017. GDP was used as the dependent variable. External debt,

imports, exports, annual population growth rate, debt service, and gross capital formation were all independent variables. The finding of the study External debt, debt servicing, import volume, and population growth rate all have a negative effect on GDP.

Mohamed (2018) researched the effect of external debt on Sudan's economic growth from 1969 to 2015. The result of the study showed that the external debt to exports ratio contributed positively to Sudan's GDP growth. At the same time, the exchange rate and foreign direct investment had a negative effect. Exchange rates should be stabilized, and the perceived effect of foreign direct investment on economic growth should be re-examined in conjunction with the development of human capital and institutions.

Ada et al. (2016) presented a study examining the impact of external debt on Nigeria's economic growth. The study covered the years 1970–2013. External debt has a negative effect on output. The study recommended that the government avoid unnecessary borrowing and promote export-oriented growth.

Table 1 Information regarding previous studies

Author/s	Time period	Dependent variables	Independent variables	Result
Sajjad, Bilal and Khan (2018)	1980-2016	Economic Growth	Human capital, Exports and Foreign direct investment (FDI)	Similar to how human capital, exports, and FDI had a beneficial impact on economic growth, foreign debt has a major impact.
Kasidi and Said (2013)	1990-2010	Economic Growth	External debt and Debt service	Debt service payment has a negative effect of around 28.517, whereas total external debt stock has a positive influence of about 0.36939.
Emmanuel and Olufemi (2019)	1981-2016	GDP growth rate	Real gross domestic product, trade openness, and gross fixed capital formation as a percentage of GDP	External debt effects negatively to growth in Nigeria.
Ayadi and Ayadi (2008)	1994-2007	Economic Growth	External sector, Debt indicators, and some Macroeconomic variable	The negative impact of debt (and associated payment requirements) on growth has been demonstrated in Nigeria and South Africa. In contrast, South Africa is doing far better than Nigeria in terms of obtaining foreign financing to promote growth.
Al-Tamimi and Jaradat (2019)	2010-2017	Economic Growth	GDP and GDP growth rate	External debt has an adverse and enormous impact over economic growth.

Awan and Qasim (2020)	1980-2017	GDP	External debt, Imports, Exports, Population growth rate per annum, Debt services and Gross capital formation.	External debt, debt servicing, import volume, and population growth rate all have a negative impact on GDP. On the other side, exports, gross capital formation, and the employed labor force had a positive impact.
Mohamed (2018)	1969-2015	GDP	Exports, Exchange rate, and Foreign direct investment.	External debt to exports ratio had contributed positively while exchange rate and foreign direct investment had an adverse effect on GDP growth of Sudan.
Ada,Chigozie and Godwin (2016)	1970-2013	Economic Growth	Other variables	External debt effects negatively significant on output.

Data and Methodology

In this research paper, Time series data are used from 1985 to 2019. The dependent variable is GDP growth rate, while independent variables are FDI, export, Human capital proxy of life expectancy, total debt service, Gross capital formation, and external debt servicing.

Model Description

The role of foreign debt on economic growth was investigated using a multivariate regression model in combination with other macroeconomic variables such as export, capital creation, foreign direct investments, and life expectancy as a control variable. The estimating equation for this study is also used in Ali and Mustafa (2012), Lotto and Mmari (2018), Khan et al. (2015), Khan et al. (2016), Bahattab et al.(2016), Azam and Khan (2018), and Rehman et al. (2018), can be written as below.

$$ECG = b_0 + b_1EDT + b_2MOS + b_3GEX + b_4EXR + b_5FDI + \mu \quad 1$$

Results and Discussion

This chapter presents the results and discussion. The details are given as under.

Table 2 Descriptive Statistics Results

	ECG	FDI	EXR	EDT	GEX	MOS
Mean	4.406329	0.985135	61.13873	24.18237	1.14E+12	5.63E+12
Median	4.674708	0.772219	58.25786	24.13854	4.03E+11	1.99E+12
Maximum	7.705898	3.668323	150.0363	25.14446	4.46E+12	2.24E+13
Minimum	0.988829	0.331453	15.92839	23.09347	5.71E+10	1.92E+11
Std.Dev.	1.910962	0.808668	35.19191	0.537332	1.32E+12	6.61E+12
Skewness	-0.036977	2.284235	0.543560	-0.209844	1.182090	1.166258
Kurtosis	2.258781	7.337793	2.489375	2.330383	3.087564	3.118064
Jarque-Bera	0.762953	54.57013	1.983534	0.858721	7.695897	7.500032
Probability	0.682853	0.000000	0.370921	0.650925	0.021323	0.023517
Sum	145.4089	32.50947	2017.578	798.0182	3.77E+13	1.86E+14
Sum Sq.						
Dev.	116.8568	20.92621	39631.06	9.239221	5.54E+25	1.40E+27
Observations	33	33	33	33	33	33

In table 2 the mean value of GDPG is 4.40, Standard deviation of GDPG is 1.91, skewness of GDPG is -0.03 and Kurtosis of GDPG is 2.25. The mean value of FDI is 0.98, Standard deviation of FDI is 0.80, Skewness of FDI is 2.28 and Kurtosis of FDI is 7.33. The mean value of EXR is 61.13, Standard deviation of EXR is 35.19, Skewness of EXR is 0.54 and Kurtosis of EXR is 2.48. The mean value of LDBT is 24.18, Standard deviation of LDBT is 0.53, Skewness of LDBT is -0.20 and Kurtosis of LDBT is 2.33. The mean value of GEX is 1.14E+12, Standard deviation of GEX is 1.32E+12, Skewness of GEX is 1.18 and Kurtosis of GEX is 3.08. The mean value of MS is 5.63E+12, Standard deviation of MS is 6.61E+12, Skewness of MS is 1.16 and Kurtosis of MS is 3.11. The mean value of EXR is greater 61.13.

Table 3 Correlation Results

Variables	GDPG	FDI	EXR	LDBT	GEX	MS
GDPG	1.000000					
FDI	0.150661	1.000000				
EXR	-0.316307	0.061429	1.000000			
LDBT	-0.378478	0.203106	0.953956	1.000000		
GEX	0.150745	0.041338	0.938919	0.858089	1.000000	
MS	0.150309	0.007385	0.942310	0.865138	0.998860	1.000000

Table 3 shows the correlation results. The results showed that FDI and GDPG is showing a positive correlation. The degree of correlation between the two variables is 0.15 depicting by the correlation coefficient. EXR and GDPG is showing negative correlation. The degree of correlation between the two variables is 0.06 depicting by correlation coefficient. LDBT and GDPG is showing negative correlation. The degree of correlation between the two variables is 0.95 depicting by correlation coefficient. GEX and GDPG is showing positive correlation. The degree of correlation between the two variables is 0.85 depicting by correlation coefficient. MS and GDPG is showing

positive correlation. The degree of correlation between the two variables is 0.99 depicting by correlation coefficient.

Table 4 ADF Test Results

Variables	Results at level		Result	Results at 1 st difference			Decision
	T-Statistics	P-Value		T-Statistics	P-value	Result	
GEX	-2.631	0.27	Non-Stationary	-5.695	.0003	Stationary	Stationary at first difference
GDPG	-2.924368	0.1709	Non-Stationary	-6.519931	0.000	Stationary	Stationary at first difference
FDI	-3.175570	0.1078	Non-Stationary	-4.107140	0.0155	Stationary	Stationary at first difference
MS	-	-		-4.531068	0.0055	Stationary	Stationary at first difference
LDBT	-3.8904	0.0256	Stationary	-	-	-	Stationary at level
EXR	-2.5643	0.0010	Stationary	-	-	-	Stationary at level

Regression Diagnostic Tests

Stationarity of Data

A unit root test was used to check data is stationary or not, this is because when data is non-stationary it may lead to inefficient and biased results which would not be accurate for policy making. For this reason, Augment Dickey Fuller (ADF) test was run on each variable to check whether it is stationary or not. The decision will be based on P-values if significant then null hypothesis rejected and if insignificant then there is non-stationarity problem. The unit root results are given in table 4 showed that GEX turned non-stationary at level, whereas, it turned stationary at first difference. The GDPG also turned non-stationary at level, whereas, it turned stationary at first difference. The FDI also turned non-stationary at level, whereas, it turned stationary at first difference. The MS turned stationary at first difference and LDBT turned stationary at level. Because the results showed a mixed order of integration that's why the appropriate technique for the analysis will be the Auto Regressive Distributive Lag (ARDL).

Table 5 ARDL bound test results

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-Statistic	4.652760	5
Critical value bounds		
Significance	I0 Bound	I1 Bound
10 %	2.26	3.35
5%	2.62	3.79
1%	3.41	4.68

The F-Statistics value is 4.65 is greater than the upper bound value which is 3.79 at 5% level of significance. This rejected the null hypothesis and showing that the long run relationship is present between the variables.

Table 6 ARDL Long Run Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
IGEX	-0.000000	0.000000	-2.546858	0.0192
LDBT	-0.661934	2.345848	-0.282172	0.7807
IMS	0.000000	0.000000	2.847012	0.0100
FDI	-0.773648	0.608758	-1.270863	0.2184
EXR	-0.107077	0.053451	-2.003279	0.0589
C	26.335043	53.993985	0.487740	0.6310

R-squared: 0.61

Adjusted R-squared: 0.56

Short and long run results of ARDL bond test shows that data interlink between variables.

Table shows that in short run growth rate and exchange rate are insignificant, LDBT are negative in coefficient and significant in 0.02 value. Exchange rate (EXR) is highly significant in short run. Data show (IGEX) and MS are significant in long run while LDBT, FDI and exchange rate are insignificant. Further data show the R-Square value is 0.61 which means model are strong goodness of fit. Further results indicate value of Durbin Watson Statistic value is 1.9 which is closer to 2, showing that there is no serial correlation issue in the data.

Table 7 ARDL Short Run Results

Dependent Variable: GDPG

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(IGEX)	-0.000000	0.000000	-0.805554	0.4300
D(LDBT)	-20.368293	8.554158	-2.381099	0.0273
D(IMS)	0.000000	0.000000	0.741821	0.4668
D(FDI)	0.133635	0.830291	0.160949	0.8737
D(EXR)	-0.255318	0.068167	-3.745477	0.0013
CointEq (-1)	-1.120936	0.243612	-4.601322	0.0002

Cointeq = GDPG - (-0.0000*GEX -0.6619*LDBT + 0.0000*MS -0.7736*FDI -0.1071*EXR + 26.3350)

Conclusion and Policy Recommendations

Due to a lack of funding, many nations, like Pakistan, rely on loans from other nations and international organizations. Nevertheless, financial resources are unquestionably necessary for developing a country's economy. Thus, the impact of external debt on the GDP growth rate is examined in this study. Time series data from 1985 to 2019 are used for empirical analysis. The Johansen Co-integration test was used to verify the correlation between economic growth and external debt.

Furthermore, life expectancy, capital formation, and net foreign direct investment inflows are employed as additional explanatory factors. Our hypothesis is supported by the data, which are shown to be statistically significant and contain expected signals. External debt, total, and debt servicing have a negative impact and are statistically significant, as was expected. Other variables, namely human capital measured by life expectancy, exports, and incoming FDI, have a statistically progressive influence on the aggregate output by GDP growth rate. The primary conclusions of this research are that exports boosted the economy during the study period, but external debt decreased aggregate output. These findings corroborate numerous other research that found that improper use and management of foreign debt would cause a significant economic burden. It is valid for Pakistan and the rest of the world.

Empirical results suggest some policy measures. It is recommended that Pakistan undertake active management measures to mitigate adverse external debt shocks in order to promote sustainable growth. The government should employ home rather than foreign debts as the best action for this goal. Other strategies include taking out long-term, fixed-rate loans and using external debt for profitable projects so that the government can repay the lenders for the money they receive from the projects. In Pakistan's case, the external debt's primary objective is to boost development activities. It could also be possible by increasing export earnings through export-led growth policies. Different guidelines and monitoring systems should be adapted to control external debt sustainably. To encourage the confidence of both foreign and domestic investors, many policies, such as monetary and fiscal policy, as well as macro variables, such as inflation, exchange rate policy, pricing policy, and interest rate policy, should be strengthened. Pakistan is confronted with numerous issues as a result of terrorism and political unrest, chief among them being the loss of confidence among investors. It is time to win back investors' trust so they can continue investing in Pakistan, enabling the country to reduce its dependency on foreign debt. Pakistan can resolve this issue by enacting the appropriate legislation, although some assistance in debt relief programs would be required.

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