Available Online
Journal of Economic Impact
ISSN: 2664-9764 (Online), 2664-9756 (Print)
https://www.scienceimpactpub.com/jei

EXTERNAL DEBT AND ECONOMIC GROWTH: A CASE STUDY OF PAKISTAN (1972-2021)

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ARTICLE INFO

Article history
Received: July 09, 2023
Revised: October 09, 2023
Accepted: October 17, 2023

Keywords
External debt
Economic growth
Autoregressive distributed lag model

ABSTRACT

Investment is crucial for maintaining the rate of economic growth in a nation. Many developing countries face economic problems due to low savings and investment. Pakistan, being a developing country, has been facing a budget deficit since its independence. Pakistan borrows loans from international institutions and other countries for smooth functions of its economy. Studies reveal that a significant portion of foreign reserves is utilized to pay external debt and interest on debt. Therefore, the main goal of this research is to examine how Pakistan's external debt affects economic growth from 1972 to 2021. Secondary data were collected from the World Bank. Unit root tests were applied to determine the stationarity of variables. Economic growth (GDP), external debt (ED) and debt services (DS) were stationary at first difference while imports trade (M), inflation (INF) and exports trade (X) were stationary at level. The Autoregressive Distributed Lag (ARDL) model is used to look at how dependent and independent variables are related over short and long time periods. The results show that foreign loans, exports and imports are positively related to economic growth, while an external debt service is inversely correlated. Inflation and economic growth are inversely connected. It is best for Pakistan to focus on exports, and external debt must be spent on developmental projects rather than non-developmental projects.

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https://doi.org/10.52223/econimpact.2023.5303

INTRODUCTION

The growth of any economy depends critically on its access to finance. For the financing of development projects and programs, underdeveloped countries need sufficient financial resources. Therefore, the government requires foreign resources to perform efficiently. External debt or foreign borrowing is one of the major forms of foreign aid, which motivates especially developing countries that have insufficient internal financial resources and such countries require foreign aid (Sulaiman and Azeez, 2012).

The government's borrowing from other nations or international organizations, such as the World Bank and the International Monetary Fund, constitutes a portion of its total debt, or external debt. In the future, the full amount of debt must be repaid with interest. External debt can be acquired for a variety of reasons, including financing infrastructure projects, to support economic development, or to finance budget deficits. Basically, there are two types of external debt. Concessional external debt is given by foreign countries or international institutions at a below-market interest rate, while non-concessional external debt is given by foreigners at the market interest rate. Concessional and non-concessional external debts serve different purposes and have different implications for borrowing countries (Nwakoby and Ezeaku, 2021).

There are two schools of thought regarding external debt, whether it leads to boost economic growth or not in debtor countries. Neoclassical and Endogenous growth model promoted the idea that external debt and economic growth are positively correlated (Salman and Ali, 2022; Nwakoby and Ezeaku, 2021; Ijirshar et al., 2016; Lau et al., 2022; Megersa, 2015; Adegbite et al., 2008). They emphasized that debt is one way to finance capital formation, and if doing so has a beneficial influence on investment, it might lead to economic development. While other scholars, Krugman rejects these views and explains that external debt is one of the major issues for economic growth. Kalonji explained that external debt leads to increased poverty in debtor countries (Sahar and Haleim, 2023; Suryandaru, 2023; Majeed, 2022).

The total external debt of developing countries is $11.4 trillion, a significant increase from the $10.3 reported in 2022. The COVID-19 pandemic has further increased the debt situation, as many countries had to borrow heavily to finance their response to the crisis. High external debt levels can lead to significant economic challenges, such as currency devaluation, inflation, and financial instability. In addition, servicing large amounts of debt can put a significant strain on a country's budget, as interest payments and principal repayments can consume a large portion of the government revenue (Ghauri et al., 2022).

The economic condition of Pakistan remained unsatisfactory from its independence. Pakistan was struggling to provide fundamental needs of life at that time. Pakistan is currently one of the region's highly indebted nations. Pakistan first borrowed $121 million from outside in 1951 (Asghar and Amjad, 2022). In 1969, Bangladesh was a part of Pakistan; at that time, the total foreign debt of Pakistan was approximately $2.7 billion (Iqbal and Iqbal, 1972). During 1970-77, the reasons for the decline in economic growth were budget deficit, increasing international oil prices,

which increased inflation, and unemployment in the country (Qadri and Khan, 2017; Smith, 1996). The Structural Adjustments Program was started by the International Monetary Fund, and Zia-ul-Haq took the first installment under the SAP and then decided not to take further installments under the SAP (Naeem and Sherbaz, 2016).

In 1990, unproductive expenditures of Pakistan were increased, and 80 percent of foreign debt was just spent on defense. During 1990-92, the SAP was restarted by Nawaz Shareef and Benazir Bhutto, which increased foreign loans as compared to Zia's tenure. The government imposed massive taxes on several commodities after taking the first installment. Foreign debt was increased from $23.363 billion to $30.094 billion (Bilquees, 2003). Pakistan received $400 million due to a flood occurred in Pakistan during 2010-11. Federal Flood Commission showed that the government started flood relief camps, but reports indicated that Pakistan had little progress regarding flood relief due to mismanagement (Epstein and Kronstadt, 2011). Pakistan received approximately $126 billion from 1947 to 2022 optimal fiscal policy.

In order to draw a conclusion, the purpose of this study is to examine the effect of Pakistan's external debt on economic growth. In this study, we will identify how external debt influences the economic growth of Pakistan. Our studies will analyze data from approximately 1972 to 2021, which will make it different from previous studies. For the purpose of maximizing economic growth, this research will be helpful to policymakers in formulating optimal fiscal policy.

METHODOLOGY

This study explored the role of external debt in the economic growth of Pakistan during the period of 1972 to 2021. Data are gathered from secondary sources, including the World Bank and World Development Indicator.

Table 1 indicates the variables of the study. GDP is taken as a dependent variable, while external debt, imports, exports, inflation rate and external debt services are taken as independent variables. Table 1 also shows symbols, units of variables and data sources.

Before starting, the modeling policy is as follows.

For all types of model estimation, E-view is used. ARDL model is used for investigating the links between explained and explanatory variables. The ARDL approach is used to investigate the relationship between variables when they are integrated at both I(0) and I(1). Diagnostic tests like the LM test and heteroskedasticity are used for determining the problems of autocorrelation and heteroskedasticity. If variables show co-integration, then the next step is to apply the Error Correction Model (ECM) for determining short-run links among variables. Appropriate policies are provided after assessing the results.

Model Specification

The econometric model is given below

GDP= f (ED, DS, INF, M, X)

$$GDP_t = \beta_0 + \beta_1(ED_t) + \beta_2(DS_t) + \beta_3(INF_t) + \beta_4(X_t) + \beta_5(M_t) + \mu_t \quad (1)$$

Where

GDP = Economic growth in billion dollars

ED = External debt in billion dollars

DS = Debt services in billion dollars

INF = Annual percentage of inflation

M = products and services imported in billion dollars

X= products and services exported in billion dollars

μ= Stochastic Error Term

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ are the respective parameters of model.

We convert above equation into Log form as

$$LNGDP = \beta_0 + \beta_1(LNED) + \beta_2(LNDS) + \beta_3(LNINF) + \beta_4(LNM) + \beta_5(LNX) + \mu \quad (2)$$

Table 1. Variables used in the econometric model, symbols and sources.

Variables	Symbols	Measurement	Data Sources
Explained Variable			
Economic growth	GDP	Billions USD	WDI
Independent Variables			
External debt	ED	Billions USD	WB
Imports	M	Billions USD	WB
Exports	X	Billions USD	WB
Inflation rate	INF	Annual percentage	WB
External debt services	DS	Billions USD	WB

RESULTS AND DISCUSSION

Analyzing the data and interpreting the results are covered in this section. During the data analysis process, various techniques are used, including ARDL, Error Correction Method, Augmented Dickey-Fuller (ADF) and Phillips Perron (PP) unit root tests.

The outcomes obtained from non-stationary may be misleading. Therefore, the stationarity of variables is determined through ADF and PP tests. ADF and PP test conclusions state that data are stationary if the values of test statistics for both tests are more negative than the critical values. The sequence of integration and stationarity of the variables are displayed in Table 2.

Table 2 indicates that LNM, LNINF, and LNX are stationary at a level, whereas the remaining variables, such as LNGDP, LNED, and LNDS, are stationary at first difference.

Table 2. Result of ADF and PP tests.

Variables	ADF	PP	Remarks
LNGDP	I(1)	I(1)	Stationary
LNED	I(1)	I(1)	Stationary
LNDS	I(1)	I(1)	Stationary
LNM	I(0)	I(0)	Stationary
LNINF	I(0)	I(0)	Stationary
LNX	I(0)	I(0)	Stationary

Table 3 presents the results of the LM test. LM test is used to check whether autocorrelation in data exists or not. The null hypothesis is rejected, and it is determined that there is autocorrelation if the p-values are less than the crucial values of 0.05. If the p-values are higher than 0.05, we cannot rule out the null hypothesis and conclude that autocorrelation does not exist. In Table 3, the probability value is more than the critical value of 0.05, which indicates that there is no autocorrelation in the data.

Breusch-Pagan-Godfrey's p-value formula in Table 4 is used to calculate heteroskedasticity. Heteroskedasticity issues are identified by the p-values. Heteroskedasticity exists if p-values are less than the level of significance of 0.05. If the p-values are higher than the level of significance 0.05, we concluded that heteroskedasticity does not exist in the data. There is no heteroskedasticity in Table 4 because the p-values are more than the level of significance 0.05.

In Table 5, the bound test, which establishes the long-term relationship between the dependent and independent variables, is a depiction of the ARDL model's first stage. According to the null hypothesis, the dependent and independent variables have no long-term relationship. The ARDL model's confidence interval is shown by the lower and upper values. If the F-statistics value is less than the lower value, then the dependent and independent variables have no long-term relationship. If the projected F-statistics value is in between the two values, the results cannot be declared conclusive. The dependent and independent variables have a long-term association if the F-statistics value is greater than the upper bound. The F-statistic of the study is 7.3252, exceeding both the lower and upper threshold levels. Because of this, there is a long-term link between endogenous and exogenous variables.

Table 3. Serial correlation LM test.

F-statistic	2.2620	Prob. F(2,35)	0.68
Obs*R-squared	5.4943	Prob. Chi-square (2)	0.0641

Table 4. Heteroskedasticity test.

F-statistic	1.1432	Prob. F(10,37)	0.3584
Obs*R-squared	11.3306	Prob. Chi-square (10)	0.3323
Scaled explained SS	9.4244	Prob. Chi-square (10)	0.4923

Table 5. Result of ADRL bound test approach.

F-Bounds Test		
Test Statistics F-Statistics		Value 7.3252
	K	5
Significance	I(0)	I(1)
10%	2.08	3
5%	2.39	3.38
2.50%	2.7	3.73
1%	3.06	4.15

Table 6. ARDL long run coefficients.

Variables	Coefficients	Std. Error	T- Statistics	Prob.
LNED	0.6941	0.1479	4.6904	0.0000
LNDS	-0.4329	0.1144	-3.7831	0.0005
LNM	0.3753	0.1051	3.5679	0.0010
LNINF	-0.1787	0.0400	-4.4612	0.0001
LNX	0.3989	0.1251	3.1880	0.0029
C	0.8553	0.2631	3.2503	0.0025

The long-run ARDL model coefficients are shown in Table 6. The coefficients of external debt, imports and exports are positive, which means that these variables positively affect economic growth. The coefficient value of external debt is 0.6941, which means that a one percent rise in external debt results in a 0.69 percent increase in economic growth. The coefficient value of external debt services is -0.4329, which shows that a one percent increase in debt services leads to reduced economic growth by 0.43 percent. The coefficient value of imports indicates that a one percent increase in imports leads to an increase in economic growth by 0.37 percent. Previous researchers explored the positive impact of imports on GDP. The theory of Adam Smith based on absolute advantages also explained that a country could gain by importing and exporting commodities. According to the coefficient of inflation, which is -0.1787, a one percent increase in inflation results in a 0.17 percent reduction in economic growth. The coefficient of export trade is 0.3989, indicating that a one percent increase in exports boosts economic growth by 0.39 percent.

Table 7 illustrates the short-run results, showing that external debt, exports, and imports all contribute to economic development, but inflation and debt servicing do not, and each variable is statistically significant. R-square is 0.74, which shows that 74 percent variation exists in the dependent variable due to independent variables. ECM coefficient is -0.43, and T- ratio is -7.7195. The ECM coefficient reveals the rate of adjustments and the long-term relationship between foreign debt and economic growth. According to the coefficient of ECM, every year, long-

term changes would occur at a rate of 43 percent. As per the rule of thumb, the DW value should be 2; here, the Watson value is 2.07, which indicates that the model does not include any autocorrelation.

Table 7. Results of error correction model.

Variables	Coefficient	Std. Error	T-statistics	Prob.
D(LNED)	0.3003	0.0784	3.8295	0.0005
D(LNDS)	-0.0985	0.0440	-2.2370	0.0314
D(LNINF	-0.0448	0.0257	-1.7378	0.0906
D(LNM)	0.3651	0.0789	4.6230	0.0000
D(LNX)	0.1726	0.0502	3.4378	0.0015
CointEq(-1)**	-0.4326	0.0560	-7.7195	0.0000
R^2 = 0.74	Adj R^2 = 0.72			
DW = 2.07	AIC = -3.2153			

CONCLUSIONS AND RECOMMENDATIONS

This study examines the Pakistan's external debt and economic growth nexus from 1972 to 2021. Economic growth is significantly impacted by external debt. Khan et al. (1993), Sulaiman and Azeez (2012), and Salman and Ali (2022), Lau et al. (2022) supported our finding by confirming a favorable relationship between external debt and economic growth. No doubt, Pakistan's external debt services have a substantial impact on the financial system and the country's financial progress. The results show that external debt services negatively relate to economic growth. Kharusi and Ada (2018), Mohsin et al. (2021), and Awan and Qasim (2020) agreed with our findings by confirming a negative relation between external debt services and economic growth. Inflation has a negative effect on the economic growth of Pakistan because it lowers the purchasing power of consumers. The coefficient of inflation is -0.1787, it means that the GDP is reduced by 0.17 percent for every one percent increase in inflation. Similarly, Ighodalo et al. (2020), Blake (2015), Kharusi and Ada (2018), Sulaiman and Azeez (2012), and Azam et al. (2013) agreed with our finding by confirming a negative relation between inflation and economic expansion. Pakistan's development is significantly influenced by exports. Selling goods and services to overseas markets generates income for a nation through exports. The export coefficient is 0.3989, which indicates that a one percent increase in exports causes a 0.39 percent increase in GDP. Azam et al. (2013) and Ijirshar et al. (2016) also agreed with our findings by confirming a positive relationship between exports and economic growth. The prosperity of the country also depends on imports because they give access to resources and technology that may not be available domestically or may only be available at a greater price. The import coefficient is 0.3753, which indicates that imports positively affect Pakistan's economic growth. Senhadji (1998), Connolly (1998), Solomon (2000), Saunders (2008), and Mishra (2012) agreed with our findings by confirming a favorable relationship between imports and economic expansion.

External debt helps to boost economic growth. Pakistan requires a comprehensive economic system that must be free from political interventions. Pakistan must use its external debt on developmental projects like infrastructure, education etc., rather than non-developmental expenditures. Pakistan borrows external debt mostly from the IMF, WB and foreign countries like China, Saudi Arabia, UAE etc. Pakistan must borrow its external debt on flexible terms. Pakistan must encourage accountability in the management of its external debt to help avoid over-borrowing and money laundering. Pakistan should build export-oriented industries according to the requirements of international markets, which would lead to an increase in government revenues.

Acknowledgment

Touseef Anwer has corresponded for this paper and conducted a complete write-up of this paper. I am grateful to Dr. Tahira Sadaf for her assistance in formulating the methodology and carrying out the analysis. I am thankful to Dr. Amjed Iqbal for sharing the essential data needed for analysis. I am also thankful to Ayesha Rouf and Ifza Younas for contributing to the proofreading of the document.

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