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## **Impact of External Debt on Economic Growth Rate: An Empirical Evidence from Pakistan**

**Rabia Zafar<sup>1,\*</sup>, Muhammad Maleeq-Ul-Islam Zafar<sup>2</sup>**

<sup>1</sup>Institute of Agriculture and Resource Economics, University of Agriculture, Faisalabad, Pakistan (38000), <sup>2</sup>Institute of Business Management Science, University of Agriculture, Faisalabad, Pakistan (38000)

raabia703@gmail.com

**Abstract.** The major objective of this study is to check the effect of external debt on the GDP growth of Pakistan. For this purpose annual time series data were used for the period 1980 to 2020. Augmented Dickey Fuller test was applied to check the stationary status of the data and least square method was applied for the results estimation. For the analysis GDP growth rate was taken as a dependent variable and other variables, such as economic growth (Annual %), inflation rate (CPI %), Foreign Direct Investment net inflow (% of GDP), multi-literal debt services (% of public and publically generated debt service), Total debt service (% of GNI), Short term debt (% of total reserves) were taken as explanatory variables. Findings revealed that the total debt and multilateral debt negatively affect the GDP growth rate, whereas, FDI and short term debt positively associated with growth rate. It is suggested that to improve the economic growth Pakistan should focus on investing projects and there is need of implementation better policies for foreign debt utilization

**Keywords.** Debt, GDP, Economic growth, Time series, ADF, Economy

### **1. Introduction**

Almost every government in developing countries have to face a budget or economical deficit due to lack of financial resources, more expenditures and less revenue. To fulfil the economic needs and to remove the budget deficit government can generate revenue by printing new notes, imposing tax and by borrowing from internal and external resources. Government can borrow by using many alternative ways, as it may borrow from the central bank or the national commercial banks. Public debt is a situation, when the government choose to borrow despite introducing active taxation policies to meet the budget deficit then it makes a liability on itself (Rais & Anwar, 2012). On the other hand, the government can also borrow from external sources. It is considered that external debt is an important source to improve economic growth. Poor and less develop economies rely heavily on foreign resources as external debt, Pakistan is also one of them.

Heavy debt burden in developing countries is one of the major issues at the beginning of the 21<sup>st</sup> century. International organizations and policymakers gave less attention to domestic debt compared with external debt. Borrowing, whether external or internal, has to be done to

promote economic growth and social welfare (Akram, 2011). According to the Keynesian theory, public debt fills the fiscal deficit gap and raise economic growth to a certain level. Conversely, excess debt adversely affects the growth of the economy. Higher levels of government debt surge the interest rate in the long run, therefore, crowded out private investment that affects economic growth adversely (Jebran et al., 2016).

Inadequate macroeconomic policies, political instability and poor law and order situation in the country are the major causes of external debt growth. However, accumulated external debt hindered the investment as a result growth of the economy slows down ( Ali & Mustafa ). The ability of borrower country to pay back debt can reduce significantly if the debt is not utilize in productive and income-generating activities (Siddique et al., 2015). Public debt can sponsor economic growth when debt resources are used for the investment of public expenditure, but if the debt burden becomes very then it can affect economic growth negatively (Bilan, Ihnatov, 2015).

Keeping in view the importance of external debt for Pakistan's economy the present examination was aimed to check the impact of external debt and some other factors on the GDP growth of Pakistan, and based on findings some policy recommendations will be suggested. The rest of the paper is planned as follow: part 2 covers the review of the literature, part 3 covers the data and methodology section, part 5 covers the result and discussion of the study and last section covers the conclusion and the policy recommendations.

## **2. Review of the Literature**

Ahmed & Shakur (2011) studied debt as the obstacle in Pakistan's economic growth. They treated GDP growth per capita as a dependent variable, whereas, external debt to GDP, population growth, trade openness and investment to GDP ratio as independent variables. To check the stationarity of the data they used the ADF unit root test and the co-integration method is used to show the long-run relationship between GDP per capita growth and the external debt. They found that debt is a major economic indicator behind the low rate of economic growth. Akram et al. (2016) explore the public debt impact on the economic growth of Pakistan. They applied an augmented Solo growth Model to find the relationship and the bound test of co-integration was applied to test the model. They found that economic growth and public debt has positive and insignificant relation, whereas, private investment and human capital have a positive and significant relationship.

Arshad, 2014, examined the relative effectiveness of foreign aid, foreign debt on the economic growth of Pakistan. For the analysis purpose, they used time-series data from 1970 to 2010 and the ADF test was used to check the stationarity of the data. They found that there was a negative long-run relationship between foreign debt and GDP while a positive long-run relationship occur between foreign aid and GDP. However, there was a unidirectional causality between foreign debt and the GDP, while, foreign assistance does not cause GDP. They suggested that every upcoming government should complete the projects of the previous government as well as then start their development projects and make sure political stability.

Atique & Malik (2012) studied the impact of national and foreign debt on Pakistan's economic growth. The objective of their research was to check the impact of external debt on economic growth and internal debt on the economic steadiness of the country. To find out the impact of debt they used the OLS technique of co-integration. They observed that there was a negative relationship between economic growth and domestic debt, whereas external debt also affects economic growth negatively. They determined that the volume of foreign debt decelerates the growth rate of the economy more than internal or local debt. They suggested

that government should formulate new policies for debt and debt management, moreover, trade complications should be reduced to promote good dealings with other countries.

Bonga, Chirowa & Nyamapfeni (2015) studied the debt, growth nexus and the debt crisis in Zimbabwe. The major objective of their study was to explore the causes, nature and consequences of debt, and to give suggestions to reduce the debt amount. For this purpose, they used the OLS method to find out the consequence of debt on economic growth implying time series data. They found that in the case of Zimbabwe public debt was negatively related to economic growth. They concluded that government should not borrow without need, but when it is borrowed then use the debt amount in the investment projects, instead of consumption expenditure.

Malik et al. (2010) studied external debt and the economic growth in Pakistan. The key purpose of their study was to find out the association between economic growth and foreign debt from 1972 to 2005. They used the OLS technique to find out the result. They found that foreign debt has a negative and significant influence on economic growth and the proliferation of external debt will decline the growth of the economy. Qayyum et al. (2012), examined external debt, foreign aid and governance. In their study, they used Ramsey Cass- Koopman's model of growth in an open economy by including the government and presented a model for governance on a theoretical basis. They found that the short-run analysis and steady-state indicate that external debt and assistance did no effect the consumption's growth rate, but influence the level of consumption. However, governance and foreign assistance boost the growth of the economy, on the contrary, foreign debt cause problem to the economy. They recommended that better quality of government will work as a facilitator and help to increase consumption and output rapidly. They suggested that developing countries should have constant and fair rules and regulations to make sure the fabulous class government which accelerate the economic growth.

Rais & Anwar (2012) analyzed the public debt and the economic growth impact in Pakistan. The major aim of their study was to dig out the public debt affects on the economy of Pakistan and to explore the effect of export quantity, investment and consumption expenditure on both external and internal debt. To check the impact they used the OLS technique for regression analysis. They found that the debt at the domestic and external levels affects economic growth negatively. However, the debt at a domestic level has a positive impact on exports and consumption expenditure, while harming investment. Contrariwise, external debt has a negative influence on consumption and investment, but have a positive association with exports. They suggested that debt is required during natural disasters and the government should make better utilization of it.

Shahbaz Rehman (2010) analyzed the interconnection of growth, foreign capital inflow and the role of the internal financial sector of Pakistan. They used the error correction model and ARDL bounds test of co-integration by using yearly time-series data. They found that foreign capital inflows were positively associated with economic growth. Moreover, public investment and the expansion of the financial sector will help to stimulate economic growth. They suggested that the government of Pakistan should carry out financial reforms to make better usage of the domestic financial sector as a result economic growth of the country will be increased.

Sheikh & Faridi (2010) empirically analyzed the impact of domestic debt on the economic growth of Pakistan. They estimated that national debt stock affects economic growth positively in the case of Pakistan and resources generated through domestic borrowing partially finance the government expenditure that contributes to economic growth. Moreover, the

relationship between debt servicing and economic growth is negative because of non-development expenditure which obstructs economic growth. They concluded that the negative effect of domestic debt on growth was stronger than the positive effect of domestic debt on the economic growth of Pakistan. However, the market base domestic debt raise the macroeconomic growth and decreases the exposure to real outer shocks.

Umar (2014) studied the foreign debt impacts on the economic performance of Pakistan. The foremost aim of his study was to explore the historical impact of foreign borrowing and to find out the social and economic parameters which are essential for the growth of the economy. The purpose of his findings was to recognize the weakness and strengths of the Pakistan economy to external debt. They found that external debt does not help to expand the foreign direct investment in case of Pakistan's economy, however, private investment (the % of GDP) also decayed. He concluded that as a result of borrowing per capita income growth improves, but the growth rate is not in an adequate amount for the ascribed foreign borrowing. It was recommended that the government should design borrowing strategy in a systematic and careful way, moreover, the exchange rate patterns should also be stable.

### 3. Data and the Method

The major objective of this study was to empirically explore the impacts of foreign debt on economic growth. To fulfil the study objectives yearly time series data have been used from 1980 to 2020. Data is gathered from world development indicators and World Bank sites. Different variables are used in the analysis, such as economic growth (Annual %), inflation rate (CPI %), Foreign Direct Investment net inflow (% of GDP), Multilateral debt service (% of public and publically generated debt service), Total debt service (% of GNI), Short term debt (% of total reserves).

At the first step of data analysis, the stationary status of all the data series was checked through the unit root test. For this purpose Augmented Dickey-Fuller (ADF) test was applied and checked the stationary status of the data. It was found that some variables were non-stationary at the level form and to make them stationary first difference was taken. After checking the stationarity, the least square method has been applied to check the impact of external debt on the GDP growth rate in Pakistan. Whereas, co-integration analysis was performed to find out whether there is any long-run relationship between variable.

The general form of the model used in the study was;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + E_i \quad (1)$$

However, the GDP growth rate was taken as a dependent variable whereas, some other variables were treated as independent. By incorporating all variables equation can be written in the following form.

$$GDPg = \beta_0 + \beta_1 TDS + \beta_2 STD + \beta_3 MDS + \beta_4 FDI + \beta_5 CPI + E_i \quad (2)$$

Where,

GDPg = GDP growth rate (annual %)

TDS = Total debt service (% of GNI)

MDS = Multilateral debt services (% of publicly generated debt services)

FDI = Net inflow of foreign direct investments (% of GDP)

CPI = Consumer price index (Inflation rate %)

E<sub>i</sub> = Error term

By taking natural log of all the variables it can written in the form of equation (3), as;

$$\ln GDPg = \beta_0 + \beta_1 \ln TDS + \beta_2 \ln STD + \beta_3 \ln MDS + \beta_4 \ln FDI + \beta_5 \ln CPI + E_i$$

(3)

#### 4. Results and Discussion

To test the unit root hypothesis a standard Augmented Dickey-Fuller Test has been applied for all variables. The unit root results are shown in Table 1. Results showed that some variables were non-stationary at the level form, however, data was stationary at first difference form. It was found that GDP, TDS, STD and MDS were stationary at integrated of order one I (1), whereas, CPI and FDI were stationary at the level form and were integrated of order zero I (0).

Table 1: ADF test results with intercept

Variables	Level	1 <sup>st</sup> difference	Conclusion
GDP	-3.67	-7.88	I(1)
TDS	-1.36	-9.84	I(1)
STD	-2.38	-3.04	I(1)
CPI	-3.02	-	I(0)
MDS	-1.99	-7.09	I(1)
FDI	-2.94	-	I(0)

Source: Author's computations

Table 2: ADF results with intercept and trend

Variables	Level	1 <sup>st</sup> difference	Conclusion
<b>GDP</b>	-3.67	-7.88	I(1)
<b>TDS</b>	-1.36	-9.84	I(1)
<b>STD</b>	-2.38	-3.04	I(1)
<b>CPI</b>	-3.02	-	I(0)
<b>MDS</b>	-1.99	-7.09	I(1)
<b>FDI</b>	-2.94	-	I(0)

After examination of stationarity status of the data series, to estimate the upshots, the ordinary least square regression analysis was employed. The results of the OLS regression has been displayed in Table 3. It was found that MDS is significantly related to growth rate and it has a negative impact. Evidence indicated that an increase in multilateral debt services (% of public and publicly guaranteed debt service) leads to a decrease in growth rate. These results are in line with the findings of Malik et al. (2010) they also found that external debt is negatively related to economic growth. Whereas, STD and FDI affect the GDP growth positively but have an insignificant impact on growth rate. Results disclosed CPI inflation and GDP growth was negative and insignificant. These findings are consistent with the findings of Atique & Malik et al. (2012), as they also found a similar relation between growth rate and inflation. On the other

hand, FDI and GDP growth rate were positively related to each other. Furthermore, the R square value is less than the Durbin-Watson statistics that indicate the fitness of the model disclosed that the model is not a spurious regression model.

Table: 3 Results of regression analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CPI	-0.157	0.095	-1.652	0.107
FDI	0.093	0.513	0.182	0.856
MDS	-0.052	0.022	-2.319	0.026
STD	0.004	0.004	0.995	0.326
TDS	-0.317	0.289	-1.095	0.280
C	8.894	1.664	5.354	0.000
R-square	0.274	Akaike info criterion		4.40
Adjusted R-squared	0.223	Schwarz criterion		4.65
Sum squared resid	146.60	Hannan-Quinn criter.		4.496
Log-likelihood	-84.29	Durbin-Watson stat		1.008
F-statistic	2.02			
Prob(F-statistic)	0.09			

## 5. Conclusions

The present study was aimed to investigate the impact of foreign debt on the economic growth of Pakistan's economy for the period of 1980 to 2020. The study finds that short term debt services positively affect the GDP growth rate, whereas, multilateral debt services and debt services as % of GNI negatively influence the economic growth of Pakistan's economy. The study also explored the relationship of foreign direct investment and inflation with GDP growth rate and found that FDI affects economic growth positively, on the other side, CPI is negatively affect the GDP. It is concluded that to improve the economic growth Pakistan should more focus on investment projects and should provide more opportunities for FDI. Moreover, the utilization of debt service should be better and proper implementation of policies should be the focus.

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