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External Debt and Economic Growth: Implications for Sustainable Development in Pakistan

Mubasher Ali*[1], Mariam Zahid[2], Maria Idrees[3]

[1*]Lecturer, Department of Economics, The University of Lahore, Punjab, Pakistan.

[2]Lecturer, Department of Economics, The University of Lahore, Punjab, Pakistan.

[3]Lecturer, Department of Economics, The University of Lahore, Punjab, Pakistan

Corresponding author: mubasher.ali@econ.uol.edu.pk

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External debt role in Pakistan economic growth has been analyzed in this paper. Over the years Pakistan has been relying on external debt financing and the objective of this study is to examine if external debt has positively contributed in the economic growth or has been a hurdle in the economic growth. Data for this research is used between the time period of 44 years (1977-2021). The data for the research study is extracted for multiple Pakistan Economic Surveys, World Bank Data Bank, International Monetary Funds. ARDL model was utilized in this study to explore the short run and long run relationship. Other variables that are incorporated to this study are Exports, Imports, Inflation and External Debt Servicing. External debt posits a strong significant and contributing relation with Economic growth in Pakistan's economy in both short run and long run whereas Exports also has a positive contribution towards Economic growth both in short run as well as long run.

1. Introduction

Developing economies like Pakistan has limited resources available with them to finance the development and output creation activities in their economy, there for its has been widely observed that they rely heavily on financing to fund their development initiatives. Although External debt has a critical role in shaping economic growth trajectories, it can lead to economic growth as supported by Debt Cycle Theory that clearly indicated that if borrowed funds are invested in the development initiatives in the economy, that it can lead to economic growth as returns from these highly return funded projects helps in paying back the loans and increase output in the economy. The use of External debt is highly under debate all across the world as majority of the countries that have relied on the external debt financing to fulfill their needs ends up in debt trap where they need to borrow more to payback their old debts. Pakistan since 1951 has relied on foreign debt to fund their Investment and Savings gaps, Import and Export Gaps, Fiscal Deficit and to finance the development initiatives. Roles of debt is crucial in transforming the fate of developing economy, It can be source of financing by relying too much on it can make the developing country like Pakistan more vulnerable to economic shocks, if not utilized properly (Asma et al., 2022). The debt servicing for the external debt can add a burden to the limited financial resources available to the country and can put a country like Pakistan to witness a financial crisis. Pakistan has been facing constantly increasing high debt servicing over the years i.e., as high as over 4% average (Pakistan Economic Surverys) whereas Pakistan GDP growth rate has remained unstable and there has been fluctuations and instability in the economy making it a difficult situation for Pakistan manage its external debt servicing situation. Pakistan external debt has not been sustainable and keep on increasing over the past four decades make it vulnerable to economic crisis and turning in situation like default if not managed well.

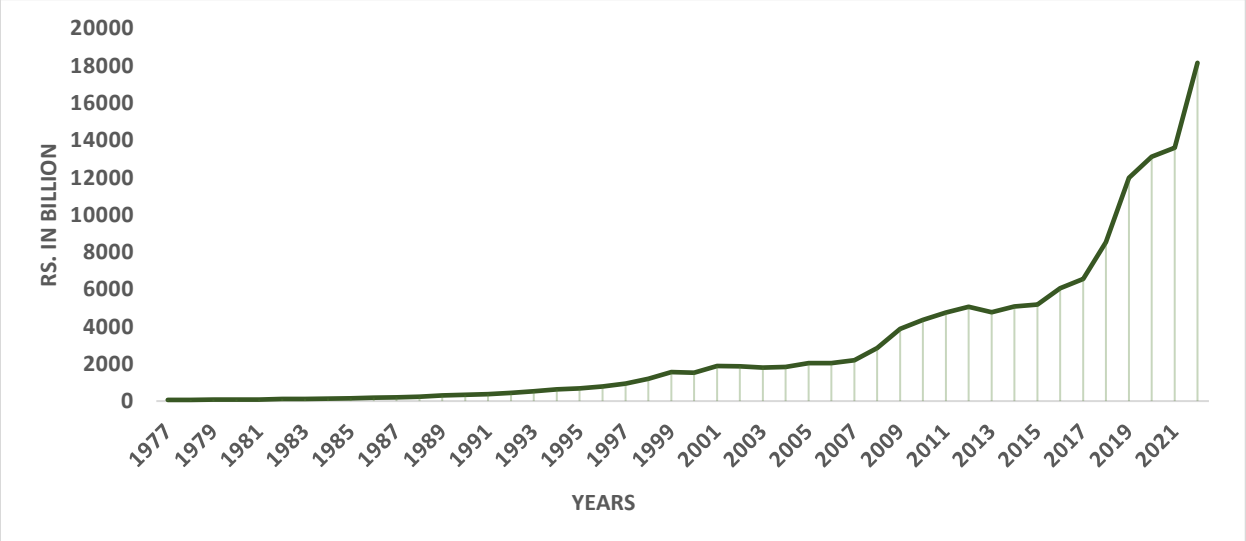
South Asian region has turned out to be one of the most indebted regions in the world (IMF Policy Paper, 2020). Majority of the South Asian countries relies heavily on debt financing. China debt has increased more than 100% in the last decade (World Economic Outlook, 2022. India has been borrowing and relying of external debt financing but some how they have been able to managed it well and they have managed to keep it below 20% of their GDP and external debt has positively contributed in their GDP growth, they external debt servicing also remained low around 1 to 1.5% of their GDP in the past decades. Sri Lanka has heavily relied on external debt financing they were not been able to manage their debt and they external debt was over 50% of their GDP taking their public debt was increased over 100% of their GDP, Their external debt servicing was as high as 8% of their GDP even higher then their GDP growth causing it to default on their debt payments in year 2022. External debt financing can help to boost the growth of an economy but eventually leads to the negative and harmful impacts on the economy as discussed under the concept of Laffer curves by (Cohen, 1992). The accumulation of external debt has been increasing at an increasing rate in terms of Pakistan economy over the past 2 decades but there has been high fluctuations in terms of GDP growth rate so the question to be investigated is about the contribution

of external debt in Pakistan economy that whether the debt is continued to be growth promoting or growth hampering in Pakistan's economy.

In Pakistan high Fiscal deficit and low level of savings that is leading to high Investment and saving gaps, and the higher Import and exports gaps as identified to be one of key major reasons for Pakistan to depend on the external debt financing so Pakistan can meets these gaps otherwise this can lead Pakistan in to major crisis. Poor Economic performance has led to slower economic growth and the debt serving has been a burden on the life of the people in the economy as they suffer due the cut of development expenditures. Developing economies like Pakistan have limited resources to fund the development initiatives and with the increasing burden of external debt servicing payments, the government are less likely to reduce the non-development expenditures as they are in-elastic in nature they fore government end ups reducing development expenditures for the people which are more elastic in nature. The reduction in these development expenditures further slow downs the economic activity and economic growth in the country.

The paper is an effort to support existing debate by adding to the literature and by analyzing current external debt trends and its roles in the Pakistan economy because Pakistan is heavily depending on it over the past 4 decades. This paper is an effort to examine the effects of external debt on the Pakistan economy as indicated by Laffer curved that it can have a both positive and also a negative impact on the economy after a certain point. The basic hypothesis developed and supported for this research study is that external debt supports and promote economic growth in Pakistan economy as per the Debt cycle theory. In order to investigate this relationship the paper has included External debt as a key variable along with other variables that can affect external debt and economic growth relationship that includes Imports, Exports, External debt servicing and inflation.

Figure No 1:Pakistan's External Debt Growth



The graph clearly highlights that Pakistan has continued to depending on external debt as a major way of financing and the following Figure 1 clearly indicated the increasing external debt accumulation trends Pakistan's economy from year 1977 to 202. The figure visually represents this increase, emphasizing the impact of external factors, such as conflict, on Pakistan's debt dynamics. The persistent large fiscal deficits, stemming from a lack of flexibility in budgetary expenditures and insufficient revenue buoyancy, have contributed to a heavy reliance on external debt as a means of financing. Over time, Pakistan's external debt has consistently risen, as illustrated in Figure 1. This escalating trend in external debt highlights the challenges faced by the country in managing its fiscal responsibilities and underscores the need for strategic measures to address the debt-related issues affecting the economy

2. Literature Review

Perasso (1992) explored that the policies made by the government are more effective to incorporate as they provide better and strong progress to remove the external debt due to more production and eventually a high level of GDP benefitting the country. For this purpose, he used data from highly indebted twenty countries with having middle income levels from the time span of 1982-1989 to study the relationship between external debt and economic growth and utilizing data from very high twenty countries of middle-income group indebted countries for the 1982-1989 period, aiming to explore the correlation of economic growth and external debt. Whereas, Cohen (1993) studied how investment and external debt cause each other. For this purpose, he took the data from the least developing countries from the year in during the 1980s. The study revealed the important insights that debt servicing is acting as a crowding effect on this investment. Nonetheless, there is a very little impact of debt on investment. In 1993, Cunningham analyzed how the burden of debt impacts the growth of an economy. To study the relationship, he employed data from the time frame between 1971 to 2007. The data was of the sixteen countries who have high levels of debt. Results provide significant findings that the debt burden causes hindrances for the economic growth of any country which effect both the employees of any country and their productivity of capital. So in order to have more economic growth, debt should be on low levels.

Chowdhury (1994) figured through his empirical research that if a country has high debt it will affect and lead to the bad or mismanagement in the rate of exchange nonetheless, it won't effect the Gross National Product rate. For this purpose, he took data of specific countries of Asia and used the time period from 1970 to 1988. Furthermore, Metwally and Tamaschke (1994) Also studied that the flow of capital inflows have an impact on the growth of an economy from the specific countries he took for empirical analysis from the period 1972 to 2002. He incorporated the techniques of Two Stage Least Square (2SLS) and Ordinary Least Square (OLS) methods to study correlation in the countries of Algeria, Morocco and Egypt. Sawada (1994) findings explain that high levels of debt negatively or severely impact the growth of the country. The reason is when they have high debts so the current present value of the future gains are even less due to large portion of external debt. To study the relationship that data was used from 1955 to 1990 of some selected countries. Similar study was held El Badawi et al. (1996) in which he stated that high debt

of past and low producing Gross Domestic Product badly effect the economic growth and it be on extremely bad conditions due to high amount of debt. To achieve the objective, almost ninety-nine countries data was used and cross-sectional series was applied.

Amoateng and Amoako-Adu (1996) found the correlation between the growth of an economy and high levels of external debt using data from almost 35 countries of Africa and used the time period between 171-1990. It was found to have a significant positive correlation od GDP and debt service of foreign when the revenue of exports was not included. Moreover, Fosu (1996) also how the debt in the Sub-Saharan Africa impacts the progress of the economies. To study the relationship, data was taken from 1970-1986. The results provided valuable insights that when there is a very large debt on these countries, it is very difficult for them to progress to have better living standards and they are not even using that production in a better way due to high prices in the economy. Deshpande (1997) provided insights on debt impacting the growth of the economies by taking data from 1971-1990 and there were these 13 countries to be studied. The reason why only these 13 countries were studies due to their high levels of debt and the negative relationship was found, but the interesting finding was also that debt servicing has not a very large effect on the growth of the economy, as it is a two-way causal relationship between the debt on any economy and their levels of investment. In the year when Karagöl (2002) studied the same relationship of growth of an economy and external debt service. It used the data from Turkey from 1956 to 1996, and found to have a negative relationship prevailing between them. And it used the multivariate or co-integration techniques. Abdelmawla and Mohamed (2005) findings were related to Sudan and they empirically investigated how the economic growth and high levels of debt cause each other. Fir this purpose, the data was used from 1978 to 2001 from this country to check its economic performance and it was shown that it has a severely negative impact when there is a very very big amount of debt on the country of Sudan. On the other hand, Chaudhary (1998) assessed that when there will be very good polices being implemented in the economy of Pakistan it will help us to lower the levels of external debt also due to the low borrowing in present and no foreign borrowing to have more debt in the future.

Ahmed (1997), Shabbir and Mahmood (1992) and Khan and Rahim (1993), Ahmed (2001) studied the relationships of very high external debt and its inverse impact on economic growth using multivarious models according to their research papers. Findings reveal that government spending pattern, the consumption metrices and the expenditures by the people or public of the economy and their perfect polices to have more production and less consumption, more focus on exports which the country and specifically Pakistan on lower levels of debt and more economic growth in the economy. Aslam (1987) and Khan, Hasan, and Malik (1992) undertook studies to find out if the FCI also impact the economic growth of the countries but it did not because it do not effect the investments of the domestic and also bridges the lapse between the savings and the investment and later research by the scholars also findings that FCI is the reason of low savings of the nation.

3. Methodology

In this study, the focus was on investigating the relationship of external debt in the economic growth of Pakistan spanning from 1976 to 2021. For this study, the data for this research is sourced from secondary sources, primarily relying on information provided by reputable entities such as the 'World Bank' and the 'World Development Indicator' and utilization of reliable and comprehensive data from these sources aimed to ensure the robustness and credibility of the research outcomes, providing a comprehensive exploration of the relationship of external debt and economic growth in the context of Pakistan over the specified timeframe. The data has been extracted from difference reliable sources that includes "International Financial Statistics, World Bank, Pakistan Economic Survey (various issues), and World Development Indicators (WDI)".

Table 1 outlines the variables incorporated in the study. The dependent variable is GDP, while debt of external, the imports and exports, also the inflation rate and external debt services are considered as independent variables. The figure further provides the symbols representing each variable, their respective units, and the means of data. The modeling approach adopted for research involves the use of regression analysis for the model estimation. Specifically, the Autoregressive Distributed Lag (ARDL) model is employed to examine the explained and explanatory variables. The ARDL approach was chosen due to its suitability for analyzing relationships between variables which are at both the levels of I (0) and I (1).

Table No 1: Variables Description

VARIABLES	PROXY	DATA SOURCE
DEPENDENT VARIABLE:		
Economic Growth	Real GDP Growth	World Bank Data Bank
EXPLANATORY VARIABLE:		
External Debt	External Debt as a Percentage of GDP	Pakistan Economic Survey's
Imports	Imports as a Percentage of GDP	WDI
Exports	Exports as a Percentage of GDP	WDI
Inflation Rate	Annual Percentage	World Bank Data Bank
External Debt Services	External Debt Services as a Percentage of GDP	Pakistan Economic Survey's

Source: Authors' variable description.

Diagnostic tests, such as the LM test and assessments for heteroskedasticity, are implemented to identify and address potential issues related to autocorrelation and

heteroskedasticity. If the variables demonstrate cointegration, the subsequent step involves applying the Error Correction Model (ECM) to determine short-run relationships in parameters.

The model given below is developed to estimate determinants of External debt

$$EG = f(ED, IM, EX, INF, EDS) \quad \ldots\ldots (1)$$

3.1 Regression Analysis Technique

ARDL estimation approach was incorporated for the estimation and to analyze significance and responsiveness and of independent parameters on the explanatory factors as defined under the developed model in case of Pakistan. The following technique was utilized and applied for the analysis.

- Stage 1: Unit Root Testing was done to estimate the factor of stationarity for variables
- Stage 2: ARDL estimation approached was incorporated as there were mixed order of integration for the variables used
- Stage 3: ECM test was conducted to check for the adjustments
- Stage 4: F-Bound Test for Long run was conducted to estimate the relationship of the long-run between the variables
- Stage 5: Serial correlation test was conducted
- Stage 6: Heteroscedasticity test was conducted

4. Results and Discussion

In this section, the focus is on the analysis of the data and the interpretation of the results. Various techniques, including Autoregressive Distributed Lag (ARDL), Error Correction Method, Augmented Dickey-Fuller (ADF), and Phillips Perron (PP) unit root tests, are employed during the data analysis process. Recognizing the potential for misleading outcomes from non- stationary data, the uniformity of variables is assessed by Augmented Dickey-Fuller (ADF) and Phillips Perron (PP) tests. The ADF and PP test results assert that all the data is consistent if the values of results for both tests are showing inverse than extreme values. The stationarity of the variables is presented in Table below 1

Table No 2: Unit Root Test

Variables	Stationary	
	I (0)	I (1)
GDP		I (1)
External Debt		I (1)
External Debt Servicing		I (1)
Imports	I (0)	
Exports	I (0)	
Inflation	I (0)	

Table 1 indicated that variables such as Imports, Exports, and Inflation are consistent or in other words uniform at a level, indicating a lack of trend whereas variables like GDP, External Debt, and External debt services are stationary at first difference, indicating them exist mixed level of integrations with three of the variables in the model are stationary on level stationary while other three are persistent on the difference of first. As per the result of the unit root, ARDL was decided to be ab appropriate model to analyze and estimate the relationship.

Table No 3: ARDL Model: Short Run Results and ECM

VARIABLES	COEFFICIENTS	T-STATISTICS	P-VALUE
D(GDP(-1))	0.322202	2.296905	0.0404
D(ED)	-0.003515	-2.547413	0.0256
D(ED(-1))	-0.003980	-2.494612	0.0282
D(INF)	225.5258	2.802209	0.0160
D(INF(-1))	118.8277	1.813099	0.0949
D(IMP)	280.2160	3.046630	0.0101
D(IMP(-1))	-286.8432	-3.084959	0.0895
D(EX)	-420.9110	-2.812247	0.0157
D(EX(-1))	-461.2992	-3.319381	0.0061
CointEq(-1)*	-0.566488	-7.092237	0.0000

Adjusted R2	0.977064
F-statistic	138.3487
Probability (F-statistic)	0.000000

Source: Authors' Estimation

To describe the ARDL model's first stage, illustrating the relationship between the variable of dependent and independent, serves a critical component to understand the long-term dynamics. The null hypothesis posits that long-term relationship is not present between the dependent and independent variables. The 1st lag of the GDP is said to be positively contributing in the Pakistan's economy where as exports, its 1st and 2nd also seems to be positively contributing towards the economic growth. External Debt and its 1st lag indicate there is strongly inverse relationship with the growth of the economy as supported by Debt cycle theory that explains that borrowed funds are used for development initiatives in the country and the investments in the highly return projects starts to pay back and leads to growth of economy in the country. Inflation also seems to be positively contributing towards GDP growth as rising prices motives that business owners to increase production and leads to rise in the output and production services in the country. The relationship also supports the Philips curve that clearly states that due to inflation in the short run there is lower unemployment and higher economic growth. Imports variable also seems to be positively contributing towards positive economic growth which clearly highlights that Pakistan is promoting and focusing on Capital Intensice imports in the economy that increase in productive and increase in output generation activities. Exports also seems to be positive in the short run which is aligned with Export-Led growth narrative in the literature which may be due to increase

in foreign exchange earnings and due to increase in FDI in the economy that further increases the output in the economy. Error Correction Term results are too aligned with economic theory as ECT coefficient is negative and moreover, has a value of -0.5664 highlighting the magnitude of adjustment in each period to the point of equilibrium.

Table No 4: ARDL Model: Long Run Results

VARIABLES	COEFFICIENTS	T-STATISTICS	P-VALUE
C	-12499.71	2.109321	0.0566
GDP(-1)*	-0.566488	-1.186758	0.2583
ED(-1)	0.004121	0.816950	0.4299
INF(-1)	59.80125	0.391739	0.7021
IMP(-1)	202.9422	0.759399	0.4623
EX(-1)	300.7084	0.845378	0.4144
EDS**	207.4493	2.589602	0.0237
D(GDP(-1))	0.322202	1.186758	0.2583
D(ED)	-0.003515	-1.359392	0.1990
D(ED(-1))	-0.003980	-1.264935	0.2299
D(INF)	225.5258	1.538925	0.1498
D(INF(-1))	118.8277	0.968866	0.3517
D(IMP)	280.2160	1.214801	0.2478
D(IMP(-1))	-286.8432	-1.535665	0.1506
D(EX)	-420.9110	-1.389970	0.1898
D(EX(-1))	-461.2992	-2.072036	0.0605

Source: Authors' Estimation

Findings suggest valuable insights that External debt servicing is positively contributing toward economic growth which indicates the stability and creditworthiness in the economy that promotes investors confidence in the economy and it also indicates that borrowed funds were used an allocated toward the development expenditures of the economy and these investments in the highly return projects have started to pay off and leading to increase in output of the economy. The 1st lag of exports also has as positive and significant impact on the Pakistan's GDP as supported by Export-Led growth in the literature which may be due to increase in foreign exchange earning and due to increase in foreign direct investment in the economy that further increases the output in the economy.

Table No 5: F-Bound Test for Long run

F-Bounds Test		**Null Hypothesis: No levels relationship**		
Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	4.790460	10%	2.08	3
k	5	5%	2.39	3.38
		2.5%	2.7	3.73
		1%	3.06	4.15

The test of F-Bound was employed to empirically analyze how the long-run relationship between dependent and independent variables exists and F-statistics values is 4.790460, larger than Upper bound value 3.38 at 1% and a very good level of threshold, that clearly indicates that there is a relationship of long-run is present between the dependent and independent parameters.

Table No 6: Serial Correlation LM Test Results

Breusch-Godfrey Serial Correlation LM Test:			
Null hypothesis: No serial correlation at up to 2 lags			
F-statistic	1.158027	Prob. F(2,10)	0.3529
Obs*R-squared	5.265446	Prob. Chi-Square(2)	0.0719

Serial correlation Test was conducted on the estimations to check if them exists an issue of serial correlation. As per the P-values of 0.0719 > 0.05 in the above table which clearly indicates that no serial correlation issue exists and it accepts the Null Hypothesis.

Table No 7: Heteroskedasticity Test Results

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
Null hypothesis: Homoskedasticity			
F-statistic	0.775876	Prob. F(15,12)	0.6832
Obs*R-squared	13.78568	Prob. Chi-Square(15)	0.5418
Scaled explained SS	6.235134	Prob. Chi-Square(15)	0.9755

This figure employs the formula of the Breusch-Pagan-Godfrey's p-value to assess heteroskedasticity for the data. The presence of heteroskedasticity is determined by examining the p-values, with a significance level of 0.05. If the p-value is small than 0.05, it is inferred that heteroskedasticity exists. Conversely, if the p-values exceed 0.05, the conclusion is drawn that heteroskedasticity is not present in the data. In this table, the p-values are observed to be more than the significance level of 0.05. This finding is that there is no point supporting the existence of heteroskedasticity in the data. The absence of heteroskedasticity reinforces the robustness of the data, providing confidence in the subsequent analyses without concerns related to varying levels of variability in the data.

5. Conclusion and Policy Recommendations

Research investigates the relationship between Pakistan's external debt and economic growth spanning from 1972 to 2021. Notably, external debt strongly influences economic growth. Our findings align with the studies conducted by Khan et al. (1993), Sulaiman and Azeez (2012),

Salman and Ali (2022), and Lau et al. (2022), confirming a positive association between the debt of external on economy and the growth. Where this negative relation is also remining with the findings of Kharusi and Ada in 2018, Mohsin et al. in 2021, and Awan and Qasim in the time frame of 2020. Inflation negatively affects Pakistan's economic growth by diminishing willingness to buy for the consumers. And as for the coefficient of inflation, at -0.1787, suggests for every one percent increase in inflation, GDP is reduced by 0.17 percent. This observation aligns with the studies conducted by Ighodalo et al. in the time period of 2020, Blake in 2015, Kharusi and Ada in 2018, Sulaiman and Azeez in 2012, and Azam et al. for 2013, posits a relationship between inflation and economic expansion. Exports have a key role and positive for Pakistan's economy which is aligned to Export-Led growth literature and hence is a source of foreign exchange earnings and a contributing cause for an increase in foreign direct investment for economy. Results are aligned with previous study of Azam et. al. in 2013. Inflation is also positively contributing towards GDP growth and this relationship is aligned with Philips curve concept that clearly states that due to inflation in the short run there is lower unemployment and higher economic growth. Imports variable positive relationship which clearly highlights that Pakistan is promoting and focusing on Capital Intensice imports. As External debt is growth promoting for Pakistan so Pakistan should continue to rely on external debt financing to fund their development initiatives and financing needs in the economy that are growth promoting and can lead to increase in economic activity of the country.

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