Does External Debt Affect Economic Growth: Evidence from South Asian Countries

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ABSTRACT

Time series econometric methods are frequently used in studies examining how external debt affects economic growth. For the period of 1980-2020, this study creates a panel dataset of five South Asian nations and examines the link between external debt and economic growth. The findings of Cross-sectionally Augmented Panel Unit Root Test by Pesaran's (2007) confirms that all variables are integrated in order I (1). To understand the error correction mechanism that determines the short-run dynamic nature of external debt and economic growth, the study uses the Cross-Sectional Dependence Autoregressive Distributed Lag (CS-ARDL) technique. A significant negative association between external debt and economic growth is found to exist in South Asia both in the long run and in the short run. Since rising foreign debt is associated with slower economic growth, the study recommends that South Asian nations should promote domestic savings and investment to lessen their reliance on external debt.

Keywords: External Debt, Economic Growth, Panel Data Model
JEL Classifications: F34; O47; C23

1. INTRODUCTION

When a nation lacks adequate domestic savings, it often takes on external debt to supplement its domestic resources and achieve growth and other goals. External debts significantly diminish a country's capacity to repay debts if they are not invested in productive and income-boosting activities. High debt levels make it harder to maintain economic growth and fight poverty (Berensmann, 2004; Maghyereh and Hashemite, 2003). Researchers and policymakers have focused a lot of attention on the connection between external debt and economic growth in the wake of the global debt crisis of the 1980s, which was caused by the accumulated foreign debt stock and the associated sustainability problem, particularly in highly indebted poor countries (Gunter, 2002; Easterly, 2002).

According to economic theory, both developing and developed countries should be able to increase their economic growth with

a manageable amount of debt. The debt overhang theory and the liquidity constraint hypothesis have been used to understand better how debt affects economic growth (Krugman 1988; Saches 1989; and Cohen 1995). According to these views, rising government internal borrowing prevents economic growth as debt levels rise. Due to the crowding effect, when interest rates rise due to an increase in borrowing, borrowing becomes more expensive for both investment and consumption. Furthermore, due to poor management, borrowing has a detrimental effect on the financial sustainability and economic progress of developing nations. So, it is essential to finance profitable investments that will produce additional income with external financing (Kharusi and Ada, 2018).

The situation concerning South Asian nations' external debt has changed throughout time. The trend of external debt (as a percentage of GNI) of five South Asian countries for the period of 1980 to 2020 is shown in Figure 1.

It is observed that Bhutan is experiencing a rising external debt. Before 2001, Bhutan's external debt was lower than Sri Lanka and Pakistan, but after 2001, it had the highest external debt among other South Asian countries with a rising trend. Although Sri Lanka has experienced lower volatility, it has higher external debt than the other four countries before 2001, and after 2001, it still has higher external debt than Bangladesh, India, and Pakistan but lower than Bhutan. Pakistan's external debt is lower than Sri Lanka's, but it has followed the same trend as Sri Lanka. India has experienced comparatively lower debt than other South Asian countries. After 1984, India's external debt increased, which declined after 1995, and from 2012 to 2020, its external debt was slightly higher than Bangladesh's. After 1995, Bangladesh experienced a declining trend in external debt until 2012, when it remained almost flat until 2020. But after 2012, the other three countries also showed a rising trend in their external debt.

Over the period, all countries experienced frequent ups and downs in their GDP growth rate. In Figure 2, the trend of GDP growth rate (%) over the sample period is represented.

Like external debt, Bhutan's GDP growth rate fluctuated a lot, with a major upward trend starting in 1985, which reached a peak of 28.70% around 1987, then began to fall sharply to 4.96% in 1988. This situation might occur due to rapid forced migration, which started in the late 1980s and increased further between the period of 1988 and 1933, which led to violent ethnic unrest and anti-government protest. After that, the country experienced several fluctuations in its GDP growth rates until 2019, with another major fluctuation between the period of 2006 and 2008. Beyond 2019, a notable declining trend appeared, perhaps due to the start of the COVID-19 pandemic. All other countries had several up-and-down fluctuating GDP growth

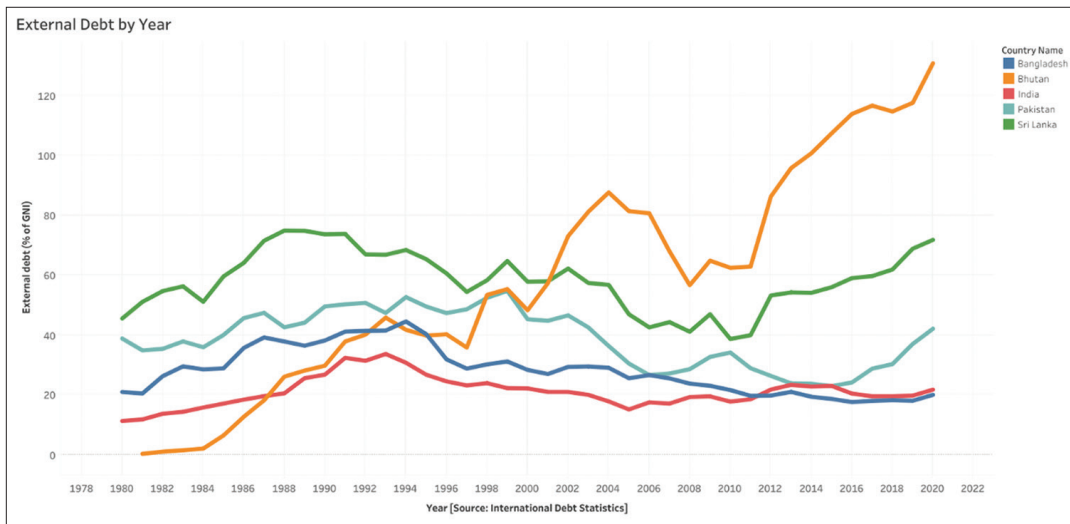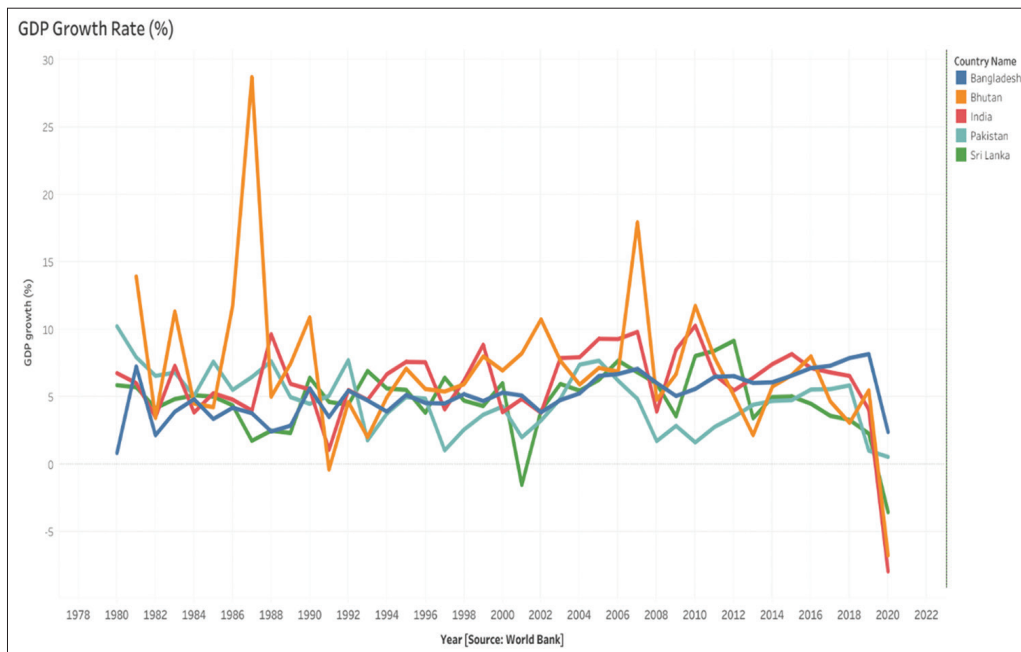**Figure 1:** External Debt (% of GNI)

Figure 2: GDP growth rate (%)

rates with a declining trend after 2019, but unlike Bhutan, no major fluctuations are notable. Sri Lanka experienced the lowest growth rate (−1.55%) during 2001 and recovered in the next year. Bangladesh had a lower growth rate than India and Pakistan for some years, but again higher than those countries for other periods. But after 2016, the GDP growth rate of Bangladesh remains higher than other countries, with a declining trend after 2019.

2. REVIEW OF LITERATURE

Considerable research has investigated the link between external debt and economic growth. Some discovered beneficial effects, while others concluded that foreign debts had detrimental effects on economic growth. Geiger (1990), for instance, examines the effect of public debt on economic growth for nine Latin American nations over 12 years (1974-1986) and discovers an inverse and statistically significant association between debt burden and economic growth.

The main factors influencing Pakistan's economic growth are identified by Iqbal and Zahid (1998). To discover the negative impact of foreign debt on economic growth, they use annual data ranging from 1959-1960 to 1996-1997 and the OLS approach.

Using data from 1980 to 1990, Fosu (1999) evaluates the effect of external debt on economic growth in 35 Sub-Saharan African nations. The study discovers that net outstanding loans have a negative impact on economic growth, holding the amounts of production inputs constant. Using data for 55 low-income countries from 1970 to 1999, Clements et al. (2003) investigate the ways in which external debt influences economic growth. They argue that larger foreign debt levels hinder economic growth by skewing resource allocation rather than by lowering private investment.

Furthermore, it has been discovered that public investment, a form of indirect external debt, influences growth. Mohamed (2005) looks into how Sudan's external debt affects economic growth and uses time series data from 1978 to 2002 for the study. To describe the impact of the export promotion plan and to account for the inflationary impact of macroeconomic policy, the study considers the growth rate of real export earnings. The findings suggest that external debt inhibits economic growth. Ali and Mustafa (2012) examine the effects of Pakistan's external debt on economic growth over the long and short terms, focusing on the years 1970 to 2010. Their findings demonstrate that debt negatively and severely short-term influences growth. This adverse effect is substantially less strong in the long run. Shabbir (2013) examines how external debt affects economic growth in 70 emerging nations. He discusses the period from 1976 to 2011. The analysis uses estimation for both fixed and random effects. External debt and economic growth are found to be negatively correlated. They also discover that debt can reduce the resources available to support private investment in these nations.

Ramzan and Ahmad (2014) use the ARDL technique to assess the effect of Pakistan's external debt on economic growth from 1970 to 2009. The results show that external debt negatively influences growth and that this negative impact can be reduced or even eliminated by using the right macroeconomic policies. Additionally, they say that the negative effects of external debt are caused by the bilateral component rather than the multilateral component.

Siddique et al. (2016) investigate how foreign debt affects economic growth in highly indebted impoverished nations (HIPCs). According to the findings, debt can boost short-term economic growth to a certain extent, which aligns with standard Keynesian prescriptions. Adamu and Rasiah (2016) discover that foreign debt slows growth over time by applying an ARDL bound test approach to Nigeria between 1970 and 2013. Moreover, in both the long and short terms, the authors' index measuring the sustainability of external debt had a favorable impact on growth.

The empirical studies, which use panel data analysis, evaluate how much economic growth depends on external debt from various angles, such as sub-Saharan Africa or deeply indebted impoverished countries. These prior studies predicted external debt elasticities have many signs and magnitudes. Furthermore, most of these publications do not consider slope and cross-sectional dependence. To create an effective foreign debt policy considering cross-sectional dependence for South Asian countries, a separate study is necessary. In this article, we analyze the impact of external debt on economic growth in South Asian countries using cross-sectional dependence (CSD) on panel data.

The following is how the paper is organized: The empirical model and data sources are presented in Section 3, the results are presented and analyzed in Section 4, and the conclusions are discussed in Section 5.

3. DATA AND MODEL FOR ESTIMATION

This study explores the relationships between population growth, foreign direct investment, gross capital formation, external debt, and economic growth. All the variables' data is used annually and spans the years 1980-2020. The readily available data determines the selection of nations for the years 1980-2020. All variables' data is taken from the World Development Indicators (WDI) report, which the World Bank releases as shown in Table 1.

The following econometric model is considered for empirical analysis,

Table 1: Description of variables and sources

Symbol	Variables	Source
RGDP	Real GDP	WDI, World Bank
ED	External debt as a percentage of gross national income	WDI, World Bank
K	Capital formation as a percentage of GDP	WDI, World Bank
FDI	Foreign direct investment as a percentage of GDP	WDI, World Bank
POP	Population growth rate	WDI, World Bank

$$EG_{it} = \beta_0 + \beta_1 ED_{it} + \beta_2 K_{it} + \beta_3 FDI_{it} + \beta_4 Pop_{it} + \varepsilon_{it} \quad (1)$$

where, EG, ED, K, FDI, and Pop denote economic growth rate as an annual percentage gross domestic product (GDP), external debt as a percentage of gross national income, capital formation as a percentage of GDP, foreign direct investment as a percentage of GDP and population growth rate, respectively. Here, i stands for countries and t stands for time. Finally, an idiosyncratic error term is presented by ε_{it}.

4. EMPIRICAL RESULTS

To determine whether cross-sectional dependence exists, Friedman (1937), Frees (1995), and Pesaran (2004) are used. Table 2's findings from the three cross-sectional dependence tests under estimations for random and fixed effects demonstrate that, in all models, the null hypothesis of no cross-sectional reliance is rejected at least at a 5% significance level. As a result, cross-sectional dependence is taken into account in this study's unit root and cointegration tests.

Using the adjusted delta tilde test proposed by Pesaran and Yamagata (2008) and Blomquist and Westerlund (2013), we study the cointegrating coefficients' slope homogeneity. Pesaran and Yamagata's (2008), and Blomquist and Westerlund's (2013) test for homogeneous slopes of the coefficients are comfortably rejected. For this reason, we consider heterogeneous panel cointegration tests to estimate the model. In Table 3, the outcomes are displayed.

We use a cross-sectionally augmented panel unit root test created by Pesaran (2007) to identify the unit root issue in the panel data. Results of the unit root test are shown in Table 4. It demonstrates that all variables—aside from external debt (ED) and capital formation (k)—are stationary at a level, except those two variables becoming stationary at the first difference. Each variable is therefore integrated in the order I (1).

In Table 5, the estimated results about the impacts of external debts on economic growth both in short run and long run for selected the five selected South Asian countries are represented.

The economic growth of selected South Asian countries is found to be significantly negatively affected by external debt. An increased share of external debt in a country's national income significantly negatively affects the economic growth of that country. This negative effect is found to persist both in the short run and in the long run across all baseline and extended models with a similar magnitude of effects.

This means that external debt is hampering the economic growth of Bangladesh, India, Pakistan, Bhutan, and Sri Lanka in both the short run and the long run. The higher the external debt in a country, the lower its economic growth will be. These findings are consistent with the theoretical predictions of classical and neoclassical views that external debt hampers economic growth in the long run by discouraging investment. The short-run findings are similar to Keynesian predictions. Considering the short-run

Table 2: Results of cross-sectional dependence (CD)

Panel Data Model	Freidman (1937)	Frees (1995)	Pesaran (2004)
Fixed effect estimation	82.911***	0.395***	5.143***
Random effect estimation	89.245***	0.489***	5.678***

***, ** and * are significant at 1%, 5% and 10% respectively

Table 3: Results of homogeneity tests

Test	Pesaran and Yamagata (2008)	Blomquist and Westerlund (2013)
Delta	1.921*	2.564***
Delta (small sample adjusted)	2.080**	2.776***

***, ** and * are significant at 1%, 5% and 10% respectively

Table 4: Results of cross-sectionally augmented panel unit root test of Pesaran (2007)

Variable	CIPS (Level)		CIPS (1st difference)	
	Without trend	With trend	Without trend	With trend
RGDP	−4.859***	−4.481***	−9.001***	−8.486***
ED	1.385	1.305	−6.056***	−5.276***
K	−0.892	−1.091	−6.361***	−5.677***
FDI	−2.569**	−3.657***	−8.305***	−7.386***
POP	−0.433	−1.512*	−2.897***	−1.818***

*** indicates 1% significance level. Optimum lag length is chosen by the Schwarz Information Criterion (SIC)

impact of external debt, Keynesian economists have focused on developing policies to reduce the adverse effects of debt. But we cannot be as neutral as the Ricardian view—that external debt is a future tax, and therefore we are neutral regarding the debt-growth relationship (Barro, 1990).

The debt overhang dilemma is a channel through which external debt accumulation hampers economic growth by hampering investment over time. A debt overhang dilemma could be a significant factor in this inverse effect of external debt on economic growth. Several studies have provided evidence regarding this, like Cordella et al. (2005), Daka et al. (2017), Matuka and Asafo (2018), Nor-Eddine and Chkiriba, 2019, etc. Disregarding the methodologies, the findings of current studies are also similar to the findings by Geiger (1990) in the case of 9 Latin American countries, by Iqbal and Zahid (1998) in the case of Pakistan, etc. But as opposed to the findings of Ali and Mustafa (2012), who stated a strong negative effect in the short run and a weaker negative in the long run for Pakistan, and Siddique et al. (2016), who found a positive effect in the short run but a negative effect in the long run for Nigeria, this study concluded the persistent of significant negative effects both in the short run and in the long run. In contrast, some studies provide evidence that external debt stimulates economic growth, including Siddiqui and Malik (2001), Talreja et al. (2016), Lau and Kon (2014), Chaudhry et al. (2017), etc.

Among other control variables, foreign direct investment affects economic growth negatively. The higher the percentage of foreign direct investment in a country's GDP, the lower the country's economic growth will be both in the short and long run. The effects

Table 5: Results of cross-sectional dependence autoregressive distributed lag model (CS-ARDL)

RGDP	CS-ARDL	CS-ARDL	CS-ARDL	CS-ARDL
Short-run Estimate				
Error Correction	−1.244***(0.00)	−1.241***(0.00)	−1.234***(0.00)	−1.268***(0.00)
ΔED	−0.011***(0.00)	−0.008**(0.02)	−0.009**(0.01)	−0.009**(0.01)
ΔK		−0.004 (0.47)	−0.003 (0.53)	−0.004 (0.44)
ΔFDI			−0.005** (0.02)	−0.005** (0.02)
ΔPOP				−0.123 (0.87)
Long-run Estimate				
ED	−0.009*** (0.00)	-0.007** (0.03)	−0.008** (0.01)	−0.008** (0.01)
K		−0.004 (0.396)	−0.004 (0.57)	−0.004 (0.39)
FDI			−0.004** (0.01)	−0.004** (0.02)
POP				0.008 (0.99)
Constant	−0.24*** (0.00)	−0.24*** (0.00)	−0.23*** (0.00)	−0.27*** (0.00)
Observations	194	194	194	194
Country	5	5	5	5

P-values are represented in the parenthesis. ***, ** and * represents that coefficient are significant at 1%, 5% and 10% respectively

of capital formation (K) and population growth rate on economic growth in South Asian countries are found to be insignificant. The results remain the same in the short run and the long run. These insignificant effects imply that population growth rate and capital formation (percentage of GDP) do not contribute to the economic growth of Bangladesh, India, Pakistan, Bhutan, and Sri Lanka during the concerned sample period.

The general view of the economic growth increasing effects of FDI could be confronted by the possibility that a part of FDI may have detrimental effects on economic growth. In the case of South Asian countries, Chaudhury et al. (2020) find that the composition of FDI is crucial to determining whether the effects of FDI are growth enhancing or not. They estimated that while overall FDI increases economic growth significantly, FDI in secondary sectors hampers economic growth. Thus, FDI should attract targeted sectors to ensure enough domestic investment.

The analysis finds no evidence of a relationship between gross capital formation and economic growth. Our results are in line with research by Yasmeen et al. (2021), who used data from Pakistan, and Hartwig (2010), who used data from OECD countries, both of which conclude that capital formation does not affect economic growth. Our results, however, differ from those of Dash (2021) and Meyer and Sanusi's (2019) investigations, which suggest that capital formation contributes positively to economic growth. According to Dash (2021), financial sector growth, financial aid, trade openness, and gross capital accumulation are necessary for South Asian countries sustained economic advancement. The study also reveals an insignificant impact of population growth on economic growth in South Asian countries. This contrasts the general belief and Malthusian theoretical predictions that population growth negatively effects per capita income and human development (Johnson, 1999; Schultz, 2003). But our results are similar to the findings of Thornton (2001), who also found an insignificant long-run relationship between population growth and economic growth for seven Latin American countries. Therefore, in line with Thornton (2001), it could be explained that due to inflationary pressure, population growth does not affect economic growth.

This study establishes a long-run relationship between economic growth, external debt, and other variables through the highly significant negative error correction coefficients. These ensure that any short-run economic shocks will be adjusted in the long run. In the baseline model, the error correction coefficient is found to be-1.244, implying that per year, economic shocks in the short run revert to the long run equilibrium by 124.4 percent. The disequilibrium adjustment rates remain almost similar in the extended models with additional control variables.

5. CONCLUSION

For a long time, the relationship between external debt and economic growth has attracted the attention of researchers and policymakers. It has become crucial, particularly after the 1980's global debt crisis. Previous studies conducted to understand the relationship have found both positive and negative effects of external debt on economic growth. Findings varied due to the use of several countries, different techniques, different periods, and applying different techniques. Most studies examined the relationship at the country level, mainly using time series data and techniques.

This study contributes to the existing literature by examining the relationship between five South Asian countries, i.e., Bangladesh, India, Pakistan, Bhutan, and Sri Lanka, from 1980-2020. The application of advanced panel econometrics techniques, namely the panel autoregressive distributed lag (ARDL) approach, reveals the effects of external debt on economic growth both in the short run and in the long run. The estimated negative error correction coefficients, which are highly significant, confirm a long-run relationship between economic growth and external debt, and other variables are established. It is found that external debt significantly negatively affects countries' economic growth in the short and long run. Among other control variables, only foreign direct investment affects economic growth significantly, but the effect is negative. Moreover, the effects of capital formation (K) and population growth rate on economic growth in South Asian countries are found to be insignificant both in the short and long run.

Hence, South Asian countries should be very conscious of the use of external debt. They should reduce the use of external debt by encouraging domestic savings and investment. While it is not possible to restrict the use of external debt, countries should look

for appropriate ways to mitigate the negative effects of external debt on economic growth; to identify possible channels to convert the deteriorating effects of external debt into a beneficial one.

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