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Public Debt and Economic Growth: Evidence from Sri Lanka

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Abstract

Public debt is a major factor in a country's global ranking, as it is a key indicator of macroeconomic performance. Many countries have investigated how public debt affects economic growth, but the impact of public debt varies from country to country. Therefore, it is important to conduct individual studies for each country. This research focuses on Sri Lanka and examines the relationship between public debt and economic growth using the latest available data from the past 45 years. The impact of Sri Lanka's public debt on its economic growth was examined using an econometric model and annual time series data spanning from 1977 to 2021, as the open economy started in Sri Lanka from 1977 onwards. The Jacque Bera (JB) and Augmented Dickey-Fuller (ADF) tests were employed to examine the normality and unit-roots values of macroeconomic time series. Furthermore, the study employed the Error Correction Model to analyze the short-run relationship of variables and the Engel-Ganger residual-based model (ECM) to investigate the long-run relationship of variables. The analysis demonstrates that Sri Lanka's governmental debt has increased during the study period in terms of both public domestic debt and public external debt. Economic growth is negatively and significantly correlated with public debt, including both public domestic debt, and public external debt. Due to the negative consequences on economic growth and the need for using public debt effectively for Sri Lanka, this report advises the government to set some borrowing limits.

Keywords: Economic growth, External debt, Public domestic debt

01. Introduction

The research suggests that many developing countries are struggling to find enough money to pay for their budgets. This is partly because these countries are importing more than they are exporting, which creates a deficit. As a result, many countries are relying on borrowing money from both their citizens and other countries to pay for things such as infrastructure and other projects that are intended to promote economic growth. The current study looks at how Sri Lanka's public debt has affected economic growth from the year 1977 to 2021. The data was collected for the investigation from 1977 onwards as the newly elected United National Party

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(UNP) in Sri Lanka introduced an economic reform package to open the economy to external trade and investment that year (Weerakoon & White, 1995).

This research indicates that multiple studies have been conducted to explore the relationship between public debt and economic growth. However, the results of these studies have not been consistent. Some studies have looked at both domestic and external debt, while most have focused on external debt specifically. The regressions have been estimated using a variety of techniques, including the Ordinary Least Square (OLS), Engle-Granger Co-integration test, Johansen Maximum Likelihood Co-integration test with Vector Auto Correction Model (VECM), Autoregressive Distributed Lag (ARDL) model, Standard Panel data model, and Generalized Method of Moment (GMM).

In section four, the methods used, and in section five, data analysis, in section six results and discussion are presented and in section seven the study is concluded with policy recommendations based on the research. Section eight consists of the references.

1.1. Background of the Study

This research aims to examine whether an increase in public debt has a positive or negative effect on the rate of economic growth, using both empirical and theoretical analysis. Many countries in South Asia rely on public debt as a critical strategy to fund their expenses (Chowdhury, 2001). If public debt is not used effectively, it can hinder economic growth. Public debt and economic expansion are closely connected, as debt can increase costs through interest payments and investments, which can, in turn, stimulate economic growth. However, many South Asian countries rely on borrowing to fund their economic growth with the expectation of generating returns (MOKI, 2009). It is possible to show how debt and economic growth are connected in South Asian countries. In Sri Lanka, there appears to be a clear positive relationship between debt and growth, but it is challenging to establish a long-term link between the two without conducting a detailed empirical investigation.

1.2. Research Questions

The researcher has chosen to investigate the correlation between public debt and economic growth in Sri Lanka. Therefore, the main research question of the study is "What is the relationship between public debt and economic growth?". Further, the researcher identifies sub-research questions as follows:

- What is the relationship between domestic debt and economic growth?
- What is the relationship between external debt and economic growth?

1.3. Objectives of the Research

The main objective of this research is to investigate the relationship between public debt and economic growth in Sri Lanka. Additionally, the study aims to examine the relationship between public domestic debt and economic growth in Sri Lanka and the relationship between public foreign debt and economic growth in Sri Lanka with specific objectives.

02. Research Problem

Sri Lanka borrows money by issuing securities such as treasury bills and treasury bonds. The cost of this debt and the interest rates that come with it have a big impact on the country's economic growth. A limited number of investigations are available examining how debt affects economic growth (Kumara, 2013; Siddiqui & Malik, 2001). According to previous studies, different countries have different effects of debt on economic growth. As a result, this study further examines this ambiguity empirically. This study mainly investigates whether there are any indications of a connection between debt and economic growth in Sri Lanka. For decision-makers, the connection between public debt and economic growth is crucial. This study identifies the research problem to address this research gap by achieving the following aims:

- To find the relationship between public debt and economic growth in Sri Lanka
- To find the relationship between domestic and foreign debt separately on economic growth in Sri Lanka

In other words, the research examines whether there are positive or negative effects. Economic growth is affected differently by internal and external debt. It is common knowledge that domestic debt has a detrimental effect on economic growth (Umaru et al., 2013). Therefore, it is necessary to analyze the relationship and impact that public debt has on economic growth in Sri Lanka.

03. Review of the Relevant Literature

3.1. Public Debt in Sri Lanka

In Sri Lanka, public debt significantly impacts economic performance, making it crucial to understand how public debt affects economic growth, which is a more accurate indicator of economic performance in Sri Lanka (Central Bank of Sri Lanka, 2021). Based on the data from the Central Bank of Sri Lanka, it can be stated that Sri Lanka's economic growth has been developing slowly due to both internal and foreign constraints. In 2021, the economic growth rate was recorded at 3.66 percent, which is slightly higher than the decline of 3.62 percent recorded in 2020. This figure highlights the importance of addressing the issue of public debt in Sri Lanka and its impact on economic growth.

3.2. The Assessment by the IMF

The International Monetary Fund (IMF) conducted a regular consultation in 2021 and had already released their findings before the Sri Lankan government's announcement on April 12. According to the IMF country report, Sri Lanka's debt was unsustainable, and the balance-of-payments crisis made the situation worse. The International Monetary Fund (IMF) investigated Sri Lanka's economic and monetary policies since 2019 and identified several factors that contributed to the current crisis. These included revenue losses from income and value-added tax reductions in late 2019, the impact of the COVID-19 pandemic on tourism-related profits, and increased costs for pandemic response measures. In 2021, the general government debt level was 119% of GDP due to a deficit of more than 10% of GDP in both 2020 and 2021 (IMF, 2022).

3.3. Empirical Evidence

This part of the research looks at the different studies and models that have been developed to understand how a country's public debt affects its economic growth. Both real-world data and theoretical models are reviewed in this section. The study by Umaru et al. (2013) examined the impact of external and domestic debt on Nigeria's economic growth between 1970 and 2010 using the Ordinary Least Squares method. The findings were mixed, indicating that the impact of debt on economic growth in African countries varies.

If the amount of money the government owes (public debt), compared to the total value of goods and services produced in a country (GDP), is low, it can help the economy grow. However, as the government borrows more money and the debt-to-GDP ratio gets higher, the positive impact on economic growth gets smaller. Once the debt-to-GDP ratio becomes too high, it can hurt the country's economic growth (Bilan & Ihnatov, 2021). The domestic debt-to-GDP ratio has a considerable favorable impact on economic growth (Abbas & Christensen, 2007). There have not been many studies that look at how the amount of money the Sri Lankan government owes (public debt) affects the country's economic growth. The amount of money the Sri Lankan government owes (public debt) has gone up, which means the country now must spend a lot of money paying back its debts. This has a bad effect on Sri Lanka's economic growth (Fonseka & Ranasinghe, 2008). A study (Ekanayake, 2011) looked at whether Sri Lanka's level of debt is sustainable and found that by 2015 if the economy were to experience a positive growth shock (meaning it grows more than expected), the amount of money the government owes compared to the total value of goods and services produced in the country (debt to GDP ratio) would go down by 2.4%.

04. Methods

4.1. Introduction

This study aimed to investigate the relationship between public debt and economic growth in Sri Lanka. The researchers used secondary data from central bank reports for the period of 1977 to 2021. The open economy was adopted the national to international from 1977 onwards (Weerakoon & White, 1995). The data were analysed using time series analysis and several analytical tools. First, a unit root test was conducted to ensure the variables were valid and reliable. Then, a co-integration test was used to determine if there was a long-term economic relationship between public debt and economic growth. The researchers used descriptive research, which is a scientific way to study the characteristics of a situation. It involves using statistical indicators to explain the situation and categorizing information to determine the frequency. This type of research is most appropriate for analysing the relationship between public debt and economic growth in Sri Lanka.

4.2. Conceptual Framework

Based on the literature review, public domestic debt and public external debt were used as the independent variables, and economic growth was used as a dependent variable by the study to analyze the debt issue of Sri Lanka. The conceptual framework that the study uses can be graphically represented as follows:
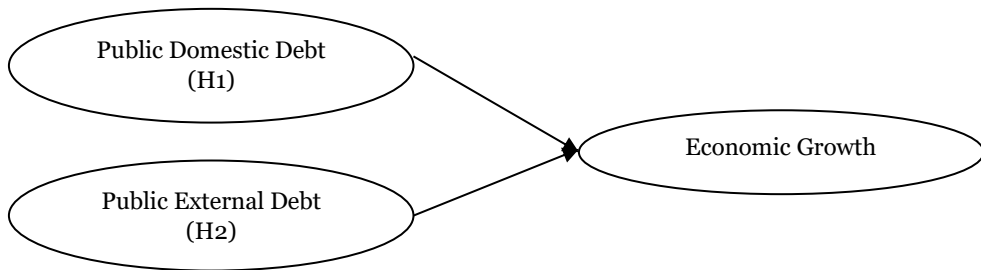
Figure 1: Conceptual Framework

H1: There is a negative relationship between domestic debt and economic growth.

Though mixed results (positive and negative associations) were found in the empirical investigations on the relationship between external debt and economic growth, the majority of the investigations resulted in a negative relationship between public domestic debt and economic growth (Curutchet, 2005; Safdari & Mehrizi, 2014; Schclarek, 2004; Yeasmin, 2015).

H2: There is a negative relationship between external debt and economic growth.

Most studies, though, concluded that there is a conflict between debt service and economic expansion. Though some investigations resulted in a positive association between domestic debt and economic growth (Sheikh & Faridi, 2017), some investigations resulted in external debt on economic growth becoming negative (Sheikh & Faridi, 2017).

4.3. Data Collection

This study used annual time series data from 1977 to 2021 which translates into 45 observations. Data for public domestic debt and public external debt were obtained from the annual reports of the Central Bank of Sri Lanka (CBSL) and the Ministry of Finance (MOF).

05. Data Analysis

5.1. Introduction

As for the research method, descriptive and Ordinary Least Square (OLS) and time-series models assume normality, linearity, homoscedasticity, multicollinearity, and stationarity have been used as tools for the analysis through the statistical package (E Views – 8 software). To improve the robustness of the results, the study tested various assumptions before proceeding to study the impact of domestic debt and external debt on economic growth in Sri Lanka.
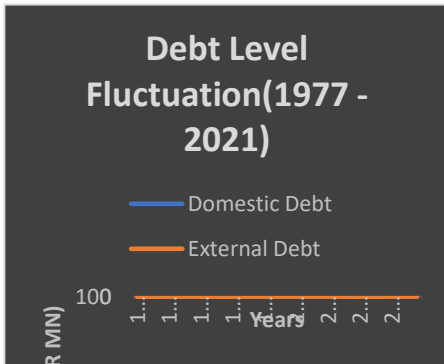
5.2. Trend Analysis
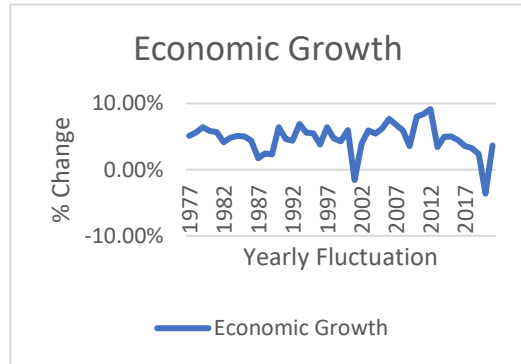

Figure 02: Debt Level Fluctuation

Figure 03: Economic Growth Fluctuation

Figure 02 shows the data fluctuation from 1977 to 2021. It shows that LKR Million fluctuation has an increasing trend than it had in 1977. Also through the trend analysis in Figure 03, it can be said that the economic growth has a more volatile trend than it had before the 2000 period according to the Central Bank Data gathered in 2022.

5.3. Descriptive Statistics

Table 1. Descriptive Statistics

Variables	Mean	Median	Std. Dev.	Jarque-Bera	Probability
Economic Growth	1.3475	1.5057	0.2996	7.9853	0.0163
Domestic Debt	2.9172	2.8542	0.1143	1.1998	0.6299
External Debt	2.8759	2.8642	0.1984	1.9847	0.3896

Table 01 demonstrates that economic growth, domestic debt, and external debt mean values are around 2.9 billion dollars; while, distribution JB probabilities, are 0, 0.009933, and 0.195694 respectively.

5.4. Augmented Dickey-Fuller Test

Table 2. At Level with intercept

Variable	ADF: T statistics	1%	5%	10%	Probability	Remarks
Economic Growth	-4.5892	-3.781	-2.9434	-2.6025	0.0006	Stationary (0)
Domestic Debt	-1.7159	-3.5885	-2.997	-2.6030	0.4162	Non-stationary (0)
External Debt	-1.6357	-3.5885	-2.9297	-2.6030	0.4067	Non-stationary (0)

Table 3. At 1ˢᵗ Deference with Intercept

Variable	ADF: T statistics	1%	5%	10%	Probability	Remarks
Economic Growth	-6.6526	-3.5924	-2.9314	-2.604	0	Stationary (1)
Domestic Debt	-5.2975	-3.5924	-2.9314	-2.604	0.0001	Stationary (1)
External Debt	-6.9186	-3.5924	-2.9314	-2.604	0	Stationary (1)

Tables 2.2 and 2.3 demonstrate that the independent variables (domestic debt and external debt) are non-stationary at I (0) but stationary at I (1), while the dependent variable (economic growth) is stationary at I (0). The regression of non-stationary variables results in a spurious regression. However, if independent variables and the dependent variable are co-integrated, spurious regression may not take place. As a result, the variables should be co-integrated.

5.5. Co - Integration Test

Table 4. Co–Integration Test

Hypothesized	Eigenvalue	Test Statistic	Critical Value	Probability
None *	0.481509	42.98838	42.91525	0.0538
At most 1	0.195716	14.35461	25.87211	0.6282
At most 2	0.109548	4.989106	12.51798	0.5979

Table 03 implies a steady long-term relationship between economic growth and public debt along with other independent variables, confirming the rejection of the premise that there is no co-integration among variables in the growth model.

5.6. Error Correction Model (ECM)

According to the results of the co-integration rank tests, Trace statistics, and Maximum Eigen Value statistics, a steady long-term relationship between economic growth and public debt along with other independent variables is implied. An Error Correction Model (ECM) is a type of multiple time series model that is most frequently applied to data where the underlying variables exhibit co-integration, a long-run common stochastic trend. A theoretical basis for assessing both the short and long-term effects of one-time series on another is the usage of the Error Correction Model. The concept of error correction refers to how a mistake, or departure from a long-run equilibrium, affects a system's short-run dynamics.

The findings show that a 1% rise in domestic debt implies a 0.98% decrease in GDP growth. The external debt and GDP growth rates are negatively correlated, and when the external debt rises by 1%, the GDP growth rate falls by 0.82%. At a confidence level of 5%, each independent variable has a negative relationship with the GDP growth at a pace of 0.005 percent (effect on other variables without explanatory variables).

Table 4: Error Correction Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.001735	0.00264	0.657418	0.5147
Domestic debt	-0.98015	0.000685	-4.5766	0.0356
External debt	-0.82734	0.000741	-2.64813	0.0115
F-statistic	20.4583		R-squared	0.605425
Prob(F-statistic)	0		Adjusted R-squared	0.575832

06. Results and Discussion

Table 04 shows that the independent variables, domestic debt, and external debt, have significant negative coefficients of -0.98015 and -0.82734, respectively. This means that as the amount of domestic debt or external debt increases, there is a negative impact on economic growth. Specifically, a 1% increase in domestic debt is associated with a 0.98% decrease in economic growth, while a 1% increase in external debt is associated with a decrease of 0.827% in economic growth. According to that, the probability value for the domestic debt variable is less than 0.05, accepting the alternative hypothesis (H1), which implies an adverse relationship between public domestic debt and economic growth. Also, the probability value for the external debt variable was 0.0115, accepting the alternative hypothesis (H2), which shows a negative relationship between public external debt and economic growth.

Overall, the findings suggest that reducing domestic and external debt levels could help to support economic growth and that policymakers may want to consider implementing policies aimed at reducing debt levels to support long-term economic growth.

07. Conclusion

This study examines the relationship between public debt and economic growth in Sri Lanka from 1977 to 2021. The GDP growth rate is used as the dependent variable in this study, and public domestic debt and public external debt are used as the explanatory variables. As a result, the study's goals, which express the negative correlation between all independent factors and economic development, were achieved.

7.1. Recommendations and Suggestions

This research comes to the conclusion that Sri Lanka's economic growth is negatively impacted by overall public debt complying with the prior investigations concluding that public debt has a detrimental impact on economic growth (Ahlborn & Schweickert, 2018; Panizza et al., 2009; Yoong et al., 2020). For Sri Lanka's development and growth, debt is important. According to this analysis, Sri Lanka's public debt does not assist economic growth in such a situation. Additionally, the cost of public debt is a significant burden for those with low incomes.

The findings of the present study can suggest a few policy implications, including effective use of public debt on development activities, support for export diversification to reduce the budget deficit, avoiding corruption, handling savings in an effective way for development activities

instead of relying on high debt, avoiding high imports of non-essential products, cutting waste or unnecessary government expenses, and encouraging entrepreneurship and innovation.

7.2. Directions for Future Research

The results presented were restricted by the small sample used in this study, which is a limitation because the analysis was conducted for 45 years between 1977-2021. Therefore, it is suggested that future research should be carried out with data from large samples.

The study mainly focuses on the relationship between public debt and economic growth. However, economic growth is not the only concept that is related to public debt. Many other concepts can help identify the relationship with public debt, such as creditworthiness, fiscal policy, government spending, interest rates, etc.

7.3. Limitations of the study

Despite the significant contribution this study has made to the body of existing literature, the following limitations need to be highlighted. The researcher has selected the sample for 45 years based on central bank reports. However, there still may be limitations concerning the generalization of the findings as it is a limited sample size. Further, the Lack of data or reliable data limits the scope of analysis. The researchers have collected data from CBSL annual report. Also, not considering the determinants of economic growth (control variables) is a major limitation of this study. Furthermore, secondary data for this research cannot be said to have 100% accuracy of the outcome.

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