



## External debt and economic growth: A study from the perspective of developing and emerging economies

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### Abstract

This study explores the relationship between economic growth and external debt for 24 highly indebted developing and 21 highly indebted emerging economies. This study uses data from 2010 to 2019 and a dynamic panel data model-Generalize Methods of Moments (GMM) to investigate the relationship. The study found that external debt significantly and adversely impacts economic growth for the sample of 24 developing countries indicating external debt being one of the major determinants of economic growth for developing countries whereas it is negative but insignificant in the case of 21 emerging economies showing no impact of external debt on economic growth in the case of emerging economies. This study also found a significant and positive relationship between gross capital formation (GCF) and lag of GDP growth (GDPgr) and economic growth for both developing and emerging economies. Inflation has no significant impact on economic growth in the case of developing countries whereas it has a significant and negative impact on economic growth for the sample of emerging economies. Trade openness has no significant impact on economic growth for data samples. In addition, the long-run estimates show a negative relationship between external debt and GDP growth for both groups of countries. The results imply that targeted and efficient debt management and using traditional alternatives (i.e., tax revenue mobilization and domestic borrowing) should be prioritized for both countries.

**Keywords:** Dynamic panel data, Economic growth, External debt, GMM modeling, Inflation, Trade openness.

**JEL Classification:** F34; O40; E02.

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## Contents

1. Introduction .....	84
2. Empirical Literature .....	84
3. Data and Data Collection Techniques .....	85
4. Methodology .....	86
5. Results and Discussion .....	88
6. Conclusion .....	89
7. Policy Recommendations .....	90
References .....	90

### Contribution of this paper to the literature

This study explores the relationship between external debt and economic growth for 24 developing and 21 emerging economies. Unlike previous studies, this study compares the impact of debt on economic growth between emerging and developing economies. Moreover, it also explores the long-run relationship between the two variables for both groups of countries.

## 1. Introduction

Debt-driven development has become commonplace in developing and emerging economies in recent decades (Hilton, 2021). External debt<sup>1</sup> financing is considered one of the main sources of finance for the current and developing spending of these countries. However, these countries' debt burden keeps increasing as a result of years of excessive borrowing. The increasing external debt corresponds to increase in debt servicing which further increases the debt burden on these economies (Schclarek, 2005).

Since the late 1950s, it has become the norm for developing and emerging economies to run current account deficits and borrow to finance them. This borrowing is one of the main sources of income for these countries and helps cover the investment deficits they face (Siddiqui & Malik, 2001).

There are two main reasons for the external borrowing. One of the main reasons for borrowing is to fill the investment gap in the economy (Malik, Hayat, & Hayat, 2010). The lack of adequate savings in these economies creates a gap between investment and funds available making the economy dependent on funding from external sources. According to Harrod-Domer's model and Solow's theory of growth, the savings rate is considered one of the most important determinants of capital accumulation and economic growth. The higher the savings rate, the higher the country's capacity for investment and capital accumulation (Checherita-Westphal & Rother, 2011).

Another main reason is the deficit that these countries run. A gap emerges due to an inadequate amount of revenue (taxes) and a high number of expenditures. To close this gap (deficit), countries choose alternative financings such as domestic and external borrowing.

The notion that deficits are not that bad for the economy comes from the argument that in theory increase in deficit can boost a slow-moving economy as more spending relates to a higher level of consumption and investment in the economy. This can create a positive spillover impact on economic growth. However, running long-term deficits and financing the deficits through external borrowing can result in detrimental impacts on economic growth and stability (Van & Sudhipongpracha, 2015).

Thus, external debt in one case fills the investment gap and the current account deficit. However, it is also proven to have a negative impact on economic growth and prosperity in these countries. The most recent example is Pakistan where the inability to service its external debt put the economy on a negative trajectory and pushed it into a deep recession. A similar case is taking place in other countries such as Egypt which is also facing a debt crisis and diving into a recession.

These countries have the characteristic of having significant levels of both domestic and foreign debt. The debt servicing for these countries takes a major portion of the fiscal budget. This causes debt management issues in the economy which hinder the development spending in these countries thus negatively impacting the economic growth in these countries.

## 2. Empirical Literature

This research on the effect of debt (domestic, foreign and sovereign) on economic development is substantial. Some significant research has already been done by economists and experts worldwide.

Panizza and Presbitero (2014) explored the causal relationship between debt and economic growth using an instrumental variable approach. They used the sample of Organization for Economic Co-operation and Development (OECD) countries. A highly significant and negative relationship was found between economic growth and debt in OECD countries (Misiri, Morina, & Shabani, 2021). The impact of public debt on Kosovo's economic growth from 2007-2019 uses time series vector auto-regressive analysis. They found that government debt had a positive impact on economic growth in the case of Kosovo. They argued that Kosovo's low public debt guarantees financial stability at the national level and that using that debt for large-scale capital investment led to positive economic growth (Hilton, 2021). The present research shows a causal relationship between debt and economic development using time series data from 1978 to 2018. No significant causal relationship between debt and GDP growth in the short-run was founded using Auto-Regressive Distributive Lag- (ARDL) based Granger causality for Ghana. However, a one way Granger causality leading from government debt to GDP in the long-run in the case of Ghana was found.

Hryhoriev (2020) in his study argued that dynamic balancing between long-term economic development and short-term financial stability is a problem for many countries. He explored the borrowing capacity of the national economy using the system dynamics methods. He argued that the resource curse should be overcome by increasing productivity and decreasing debt in countries that are highly dependent on external financing.

The national economic debt system and the issues of the debt trap are the main findings of the study. The method used in the research emphasises the vital role that innovation plays in helping people to pay off debt. The study emphasizes higher innovation and technological advancement which can lead towards higher production and rapid industrial development. The study further emphasizes the possibility of national economic development and business cycle stabilization that could lead to the elimination of debt due to innovation and technological advancement. The concept of policy resistance implementation allows for the capture of the important interrelationships between national economic development and external borrowings.

Krykavskiy, Mnykh, and Binda (2021) found a significant deviation in the GDP growth rates and government debts for Poland Japan and Ukraine. Moreover, target long-term economic strategy and monetary policy in the crisis conditions also play an important role particularly in the EU countries and in Ukraine. This study entails robust policy implementation and efficient debt management in countries like Japan and some of the EU countries i.e., Germany for the stability of the economy and sustainable economic growth.

Adesola (2009) focuses on Nigeria in particular when analyzing the impact of external debt service payment

<sup>1</sup>External debt is a debt that is borrowed by a country, or entity from the foreign sources such as foreign banks, lending institutions (IMF and World Bank) or foreign governments.

practices on long-term, sustainable economic growth and development. In his research, he makes several recommendations, one of which is that the government make sure that any loan arrangement with the London Club or any other creditors will stimulate the private sector and open Nigeria to increased trade and investment as the repayment of debt to these two creditors has a detrimental effect on economic growth. In addition, he makes the case that Nigeria's excessive reliance on outside funding sources may eventually be harmful to the country's ability to maintain its economy. Conversely, public debt has a positive impact on the Nigerian economy because well-executed debt financing boosts growth and increases the economy's ability to service and pay down public debt in resource-constrained economies.

Aboudi and Khanchaoui (2021) emphasize the importance of realizing that sustainable economic growth depends upon sustainable debt management. In his study, he seeks to empirically assess the effect of inflation and external debt on economic growth in Morocco. He argues that use of external finance and debt properly for investment and development projects in the economy leads to higher growth and long-term sustainability of debt repayment in the case of Morocco.

Siddiqui and Malik (2001) discovered that the relationship between debt and economic growth in South Asian nations such as Pakistan, India, and Sri Lanka was positive and statistically significant. They discovered that there is a non-linear relationship between economic growth and all other indicators of debt burden using panel data analysis techniques.

Zouhaier and Fatma (2014) examined the relationship between debt and economic expansion in nineteen developing nations. They discovered a substantial detrimental effect on economic growth using estimates from dynamic panel data, the ratio of total external debt to GDP and the ratio of total external debt to gross national income (GNI). They also looked into how debt affected the connection between investment and economic growth, and they discovered that debt had a detrimental effect on it. They also came to the conclusion that debt and economic growth interact negatively.

Similarly, Cristina Checherita-Westphal and Rother (2012) examined the impact of government debt on per capita GDP growth in 12 Eurozone countries. They concluded that debt accumulation above a certain debt threshold (about 90% of GDP) (beyond a tipping point) adversely affects long-term economic growth using data from 1970 to 2010. They also concluded that the adverse effects may have started at debt levels of 70-80% of GDP for these 12 Eurozone countries. Malik et al. (2010) investigated the effect of debt on growth using a time series analysis for Pakistani data from 1972 to 2005. He discovered that debt significantly hindered economic growth. Large debt accumulation impedes both private investment and economic growth.

Bidzo (2018) used GMM estimates to find a decelerating impact of public debt on economic growth with respect to the Gabon economy. He found a scissor effect between GDP growth and debt in the Gabon economy.

Lin and Sosin (2001) in their study on a sample of 77 countries found that external debt has a statistically significant and negative relationship with economic growth in the case of African countries whereas the relationship is negative but not significant for Latin American and developed countries. On the other hand, a non-significant but positive relationship was found for Asian and other developing countries.

A similar study was conducted by Schclarek (2005) in developing countries. According to his findings, lowering external debt would boost developing nations' economies. However, rising debt is linked to slower rates of economic expansion. He contends that the capital accumulation channel is largely to blame for these beneficial effects. A positive economic bubble is produced and economic growth is positively impacted by increased investment in capital goods and infrastructure. The author additionally estimated four distinct dependent variables: personal savings rate, growth in capital accumulation, total factor productivity (TFP), and per capita GDP. Nevertheless, the relationship between external debt and economic growth is a highly debated and researched topic. Many studies favor external debt as a major determinant for positive economic growth in developing and emerging economies. On the other hand, many argue against it. However, a more thorough study on the subject matter is needed in the current economic era and such a study can prove to be a major policy input for sustainable debt management and sustainable growth from the perspective of developing and emerging economies.

### **3. Data and Data Collection Techniques**

#### **3.1. Data Collection Methods**

This study uses secondary data sources. The data set includes information from 2009-2019. The World Bank's World Development Indicators, the International Monetary Fund's database, and nation-specific annual reports provided the data used in this study. The impact of external debt on economic growth in developing and emerging economies will be investigated using the dynamic panel data model. The independent variables used in this study are trade openness (open I) as a percentage of exports, inflation rate (INF), gross capital formation (GCF) as a percentage of GDP (a proxy for investment) and external debt as a percentage of GDP (EXGDP). The dependent variable in our model is GDP.

#### **3.2. Concept of Variables**

This section focuses on the description of variables considered in our analysis. These variables were chosen in consideration of their relative theoretical and empirical significance. The selection of variables is comparable to that of other researchers i.e., Mankiw, Romer, and Weil (1992), Nguyen, Bhattacharya, and Clements (2004) and Zouhaier and Fatma (2014).

#### **3.3. Gross Domestic Product (GDP)**

The increase in the size of a nation's economy determines its economic growth. Output is a broad indicator of the size of an economy. The Gross Domestic Product (GDP) is commonly used by economists to measure the economic output of a country. In our study, the Gross Domestic Product serves as the dependent variable. We take the annual data of GDP growth in percentage terms for this study.

#### **3.4. Gross Fixed Capital Formation (GFCF)**

Gross Fixed Capital Formation is the value of new and existing fixed assets acquired by households and governments in the context of economic activity. It is believed that fluctuations in these variables influence

future business activities and the contours of economic development. According to the Harrod-Domar model, the income growth rate will be positively correlated with the saving ratio and the accumulation of capital. The greater a country's ability is to save and invest a given portion of its total income, the higher would be its national income. GFCF is comprised of the following three primary components: GFCF in the private sector, GFCF in the public sector and GFCF in the government sector.

Private capital growth and economic growth are shown to possess positive and encouraging effects. There is widespread agreement that private investment improves economic performance because of technological change or technological advancement in recent years of capital. The question of whether public investment contributes positively or negatively to the economy is of utmost importance to economists. [Arrow and Kruz \(2011\)](#) and [Barro \(1990\)](#) argue that public investment increases the output of the private sector which in turn stimulates economic expansion. Public investment is crucial for determining long-term economic growth because it not only generates beneficial effects through offering education, basic research in science, health care, and physical assets, but it can also boost economic growth by attracting private investment in accordance with this view. Thus, it becomes crucial to add this to our model so that its effect on GDP is assessed.

This study used gross fixed capital formation (GFCF) as a percentage of GDP for the purpose of analysis and estimation of its impact on GDP.

### 3.5. Inflation

Inflation is defined as the rate of increase in the general price level at a given period of time. Inflation is considered one of the major determinants of economic growth. The relationship between economic growth and inflation has been an academic debate for a long time. Many experts and researchers believe inflation to be a negative sign for economic growth ([Jung & Marshall, 1986](#); [Özyilmaz, 2022](#)). Alternatively, many experts argue in favor of inflation being a positive indicator for higher economic growth ([Flix, 1961](#); [Sattarov, 2011](#); [Taylor, 1979](#)). The main goals of monetary policy have been low inflation, substantial and sustainable growth over the years. Thus, an optimal level of inflation is one of the major drivers of economic growth and sustainable development.

For this study, the annual rate of inflation in percentage terms is used to measure the impact of inflation on economic growth.

### 3.6. External Debt as Percentage of GDP

The most significant economic metric for evaluating the sustainability and health of a nation's finances is the ratio of external debt to GDP. This ratio shows the total amount of external debt owed by a nation relative to its GDP (gross domestic product). All of a nation's debts to foreign lenders, both public and private are categorized as external debt.

### 3.7. Openness to Trade

Trade openness or trade liberalization is considered one of the main factors of economic growth and development. According to the World Bank trade openness is defined as the ratio of imports plus exports over GDP. It measures the extent of a country involved in global trade. A higher ratio corresponds to high openness and higher liberalization of trade.

Studies have shown that trade openness is a significant factor in economic growth and development ([Keho, 2017](#); [Ozturk & Radouai, 2020](#)). These studies argue that trade liberalization gives opportunities to the economies to increase the movement of goods across the world, increasing exports and impacting economic growth positively. Lesser barriers in the world economy increase opportunities for knowledge and technology transfer resulting in higher innovation and better production.

For our study, we developed the proxy of trade openness as the ratio of imports and exports to the GDP (PPP) at constant dollar following the study by [Brueckner and Lederman \(2015\)](#). The mathematical representation is given by:

$$\text{Trade openness (TOI)} = \frac{\text{Imports (M)} + \text{Exports (X)}}{\text{GDP (PPP)}}$$

## 4. Methodology

### 4.1. Theoretical Underpinnings

This study revolves around the following two primary theories: The Solow-Swan growth model and the Dual-Gap theory.

Solow-Swan growth is an exogenous growth model putting savings and capital at the center of economic growth. It maintains that higher savings lead to higher capital investment and higher investment in turn leads to higher growth. Thus, savings and investment play a pivotal role in generating economic growth in the economy.

Similarly, according to the Dual-Gap theory (two-gap theory), a prominent theory on external debt theory argues that the dual gap between savings and investment and export revenues and imports are the constraining factors for generating economic growth in an economy. Thus, to fulfil the two gaps' economies rely on external borrowing (debt) or aid. In theory, this borrowing is essential to cover the lack of investment capital in the economy as well as generating economic growth. [Hassan, Sule, and Abu \(2015\)](#) and [Angahar, Ogwuche, and Dotun \(2015\)](#) have all conducted studies using the concept of dual-gap hypothesis. Double gap analysis presents the paradigm that growth requires investment and that domestic savings are insufficient to sustain growth ([Sulaiman & Azeez, 2012](#)).

It is necessary to resolve the monetary imbalance to achieve the desired economic growth rate. Two interim analyzes build on this framework. Suppose there is a country that enforces this.

Make prudent investments to attain your targeted savings rate and economic expansion. When domestic savings are insufficient to reach the desired growth rate, a gap between savings and investment arises. Similarly, there is a foreign exchange gap between exports and imports when more imports are needed than can be exported in order to reach the targeted rate of growth. A currency gap is the total value difference between imports and

exports (especially when imports exceed exports). Therefore, devaluation modifies the disparity between the local and foreign currencies. Conversely, the savings gap represents the discrepancy between the amount of money individuals save and the amount of money required for investment by the economy. This has a numerical expression such as:

$$Y = C + I + (X - M) \tag{1}$$

$$Y = C + S \tag{2}$$

$$S = Y - C \tag{3}$$

Hence

$$C + I + X = C + S + M \tag{4}$$

$$I - S = M - X \tag{5}$$

A savings limit occurs when the difference in savings is greater than the difference in the exchange rate. There is a currency exchange limit if the exchange rate is greater than the difference in savings. As a result, foreign borrowing and aid must be mobilized to close the savings gap through capital inflows.

#### 4.2. Model Specification

As we know that in a closed economy,

GDP(Y) = Consumption (C) + Investment (I) + Government Spending (G)

$$Y = C + I + G$$

$$Y = C + S \tag{6} \quad [I = S, G = 0]$$

Let, GDP (Y) of an open economy with exports (X) and imports (M) and government expenditure (G) equal to zero is

$$Y = (X - M) + C + I \tag{7}$$

Equating Equations 6 and 7

$$Y = C + S$$

$$Y = (X - M) + C + I$$

$$C + S = (X - M) + C + I$$

$$I = S - (X - M)$$

$$I = S + (M - X) \tag{8}$$

Equation 8 shows that the total domestic investment (I) will be equal to total domestic savings (S) and external borrowing (M-X). This equation in theory argues that in the case of insufficient domestic savings economies rely on external borrowing to finance domestic investment.

A dynamic panel data regression model will be used to capture the relationship between dependent and independent variables as proposed by Nguyen et al. (2004) and Zouhaier and Fatma (2014). Moreover, a modified version of Fosu's (1990) increased production function will be used as the statistical skeleton of this study.

The general form of Fosu's increased production can be expressed as:

$$Y_{it} = (EXD_{it}, INF_{it}, CS_{it}, INV_{it}) \tag{9}$$

Lag of GDP growth ratio will also be incorporated in the model to capture the lag effects of external debt on GDP if any.

The specified statistical model of estimation is given by

$$GDP_{it} = \alpha_{it} + \beta_1 EDGDP_{it} + \beta_2 GCF_{it} + \beta_3 INF_{it} + \beta_4 OpenI_{it} + \beta_5 GDP_{it-1} + u_{it} \tag{10}$$

Where

GDP = Gross Domestic Product.

$\alpha$  = Constant.

$\beta_{1-5}$  = Coefficients.

t = Time.

i = Country.

EDGDP = External Debt to GDP.

GCF = Gross Fixed Capital Formation.

INF = Inflation.

Open I = Proxy for Trade Openness.

#### 4.3. Data Type and Sources

This study explores the relationship between dependent and independent variables through a dynamic panel data regression model. Data from 2010 to 2019 will be used to estimate the model.

The overview of the data and the sources from which it was collected are shown in Table 1.

Table 1. Description and source of variables.

Variables	Descriptions	Measurement	Sources
GDP	Gross domestic product	Annual percentage of change (%)	WDI
EDGDP	External debt to GDP ratio	Annual percentage debt to GDP (%)	IMF, WDI and central banks
GCF	Gross fixed capital formation	Annual percentage of change (%)	WDI
INF	Inflation	Annual percentage change (%)	WDI
Open I	Openness to trade	Estimated proxy ratio (%)	IMF and WDI

#### 4.4. Model Estimation

We estimated the system GMM model using the Stata software and results for both data sets are reported in Table 2 respectively. The robust estimation technique is being used because it is effective in addressing potential issues related to model misspecification, outliers and heteroscedasticity. The data is used from 2009 to 2019, for the system GMM short data set is desirable for the estimations. Therefore, the data set is chosen from 2009 to 2019. Another reason is that before 2009 (2007-2008), the financial crisis occurred and after 2019 the COVID-19 pandemic started in 2020 and including these crises in the model was not feasible. This leads us to concise our data set after 2008 and before 2020.

**Table 2.** Estimation results.

Regressor	Developing economies		Emerging economies	
	Coefficient	Robust SE	Coefficient	Robust SE
GDPgr <sub>t-1</sub>	0.152** (0.031)	0.071	0.184* (0.100)	0.113
EDGDP	-0.478** (0.023)	0.021	-0.021 (0.146)	0.014
Inf	-0.253 (0.373)	0.283	-0.053** (0.052)	0.027
GCF	0.167** (0.034)	0.079	0.151** (0.014)	0.061
OpenI	-0.232 (0.134)	0.155	1.867 (0.496)	2.743
Constant	2.081 (0.177)	1.541	-0.361 (0.779)	1.286
AR (1) p value	0.000***	-	0.027**	-
AR (2) p value	0.833	-	0.336	-
Hansen p value	0.862	-	0.123	-
Sargan p value	0.216	-	0.92	-
Num of obs.	261	-	189	-

Note: \*\*\* represents significance at the 1% level, \*\* at the 5% level, and \* at the 10% level respectively. (p-values are shown in the brackets)

The Hansen test and Sargan test show the validity of our model and the validity of our instruments used for the estimation.

Tables 3 and 4 show the estimates for the non-linear combination of external to the GDP.

**Table 3.** Non-linear combination of parameters for emerging economies.

Combinations	Coefficient	Std. err	p-value
$\_b[\text{EDGDP}]/(1-\_b[\text{GDPgr}])$	-0.013	0.005	0.015**

Note: \*\* at the 5% level.

**Table 4.** Non-linear combination of parameters developing economies.

Combinations	Coefficient	Std. err	p-value
$\_b[\text{EDGDP}]/(1-\_b[\text{GDPgr}])$	-0.056	0.015	0.000***

Note: \*\*\* represents significance at the 1% level.

## 5. Results and Discussion

The results show that external debt has a significant and negative impact on the economic growth of developing economies. The coefficient of -0.478666 shows that the external debt is highly impactful in the case of developing countries and shows an adverse impact on economic growth potentially after a certain threshold of debt to GDP ratios which is a question for further study. The potential negative impact of external debt on economic growth in developing countries can be attributed to several interrelated factors. First, high levels of external debt often lead to higher debt service obligations which divert a significant portion of a country's income into interest payments rather than into productive investment (Aboudi & Khanchaoui, 2021). Secondly, this creates a debt surplus and limits fiscal space for essential government spending, including infrastructure development and social programs (Cristina Checherita-Westphal & Rother, 2012; Hassan et al., 2015). Reliance on foreign debt can increase economic vulnerability by exposing a country to external shocks such as interest rate fluctuations or changes in global economic conditions (Adesola, 2009; Siddiqui & Malik, 2001; Zouhaier & Fatma, 2014). Besides, if external debt is not used effectively to finance productive projects but is instead mismanaged or used for unproductive purposes, it can lead to a debt trap where the return on investment does not match the cost of servicing the debt. In addition, high external debt can increase a country's susceptibility to financial crises, undermine investor confidence and lead to capital outflows. Collectively, these factors likely impact the economic growth of developing countries with excessive external debt negatively (Burns, 2010; Kasidi & Said, 2013). The presence of a negative coefficient indicates that there is a debt overhang or that there has been an increased accumulation of debt that has negatively impacted economic growth (Abdullahi, Bakar, & Hassan, 2016). Thus, for developing countries reducing external borrowing could prove to be positive for the economic growth and development of these economies (Schclarek, 2005).

Our study is consistent with the previous studies of Malik et al. (2010), Panizza and Presbitero (2014), Zouhaier and Fatma (2014), Cristina Checherita-Westphal and Rother (2012), Bidzo (2018), Lin and Sosin (2001) and Schclarek (2005).

The lag of GDP growth is also significant for the sample of developing countries with a positive coefficient of 0.1522694 at 5% level. This shows the dynamic impact of GDP growth. When a country has experienced robust GDP growth in the past, it tends to trigger several reinforcing factors that contribute to a sustainable economic life. Investor confidence is strengthened leading to increased capital inflows and business investment (Hilton, 2021). Sustained economic growth stimulates economic activity, generating higher profits and increasing consumer confidence. During periods of economic growth, governments are supported by higher tax revenues allowing them to invest in major infrastructure projects, extending the virtuous cycle towards infrastructure development (Arrow & Kruz, 2011; Bidzo, 2018). In addition, job creation and unemployment reduction will further contribute to a positive economic environment as they provide opportunities to participate in the economy through increased spending (Bidzo, 2018; Hilton, 2021).

The significant and positive impact of gross fixed capital formation shows investment being one of the primary factors impacting economic growth. Sustained economic growth coupled with political stability increases investors' confidence in the economy leading to higher inflows of capital into the economy and impacting economic growth and economic development positively (Anderson, 1990). Moreover, public and private capital investment increases the overall capital investment in the economy through the circulation of money in the economy. This creates a

better employment opportunity and stimulates economic activity in the economy, positively impact the economic growth and development of the economy (Abdullahi et al., 2016; Anderson, 1990).

Inflation and trade openness are not significant in the sample of developing countries indicating no impact on economic growth for these countries. Although an insignificant but negative coefficient of trade openness for developing countries suggests that trade openness has potential negative effects on the economic growth of developing countries. Trade openness could have a positive impact on the economy if the country is producing and export competitive goods and services in the world market. Most of these developing countries are characterized by little to no production of final goods and services which makes their involvement in world trade insignificant thus not contributing to the economic growth of these nations (Ozturk & Radouai, 2020).

The results for the sample of emerging economies show external debt being insignificant but negative. The insignificance indicates that external debt has no impact on the economic growth of our sample of emerging economies. However, the negative coefficient shows the potential negative impact of external debt on the economic growth of emerging economies. This may indicate a "debt overhang" scenario where high external debt leads to significant debt service obligations and diverts resources from productive investment. Furthermore, negative rates can indicate problems such as the misallocation of debt, weaknesses in economic policy or governance or the impact of broader global economic conditions on economic growth in emerging economies (Burns, 2010; Misiri et al., 2021; Van & Sudhipongpracha, 2015). A further analysis with a larger data set and different methodology would be ideal to analyze the relationship between the variables more efficiently.

The positive and significant coefficient for lag of GDP growth and gross fixed capital formation shows that these variables have a positive relationship with GDP growth in the case of emerging economies. GCF plays an important role in stimulating the economy. Higher GCF results in higher capital accumulation which leads to higher levels of economic activity and growth in the emerging economies (Nguyen et al., 2004; Solow & Swan, 1956). The strong coefficient of GCF also indicates that investment in the economy is highly productive and generates a considerable amount of economic activity in the economy. The positive coefficient of GCF reflects investments in these countries in critical assets including machinery, infrastructure and technology that contribute to higher performance and productivity. The process of capital formation leads to job creation, reduction of unemployment and stimulation of consumer spending which is crucial for sustainable economic growth. GCF also stimulates technological progress and innovation, improves efficiency and promotes long-term economic growth (Arrow & Kruz, 2011; Hunt, 2007; Nguyen et al., 2004).

The positive and significant coefficient of lag of GDP growth indicates the impact of GDP growth. This shows that higher and sustained economic growth in the past is likely to impact future growth favorably in the case of emerging economies. Emerging economies are mostly characterized by high market chest, stable politics and other incentives in the form of tax cuts and subsidies that ensure sustained economic growth in these economies which increases the security and credibility of the economy and impacts long-term economic growth positively (Bidzo, 2018; Zouhaier & Fatma, 2014).

The negative and significant coefficient of inflation shows that inflation is detrimental for economic growth in the case of emerging economies. Reduced purchasing power due to rising prices reduces consumer spending, a key driver of economic growth. The uncertainty associated with high inflation will make planning and investment decisions difficult for businesses and may hinder expansion (Aboudi & Khanchaoui, 2021; Özyilmaz, 2022). On the other hand, central banks can raise interest rates in response to inflation, raising borrowing costs and reducing investment. Distorted price signals can distort resource allocation and hinder market efficiency. Declining real incomes of people on fixed incomes, common in developing countries add to the social and political pressures. This impacts the economic growth adversely in the long-run (Özyilmaz, 2022).

The non-significance of trade openness shows that openness in trade does not impact economic growth in emerging economies. A positive coefficient shows that for emerging economies trade openness can play an important factor in achieving higher economic growth. Higher trade openness leads to higher mobility of goods. This provides an opportunity for these emerging economies to compete with their goods and services in the world market. As a result, exports increase and impact economic growth positively and paving the way for long-term sustainable economic growth in these emerging economies (Keho, 2017; Ozturk & Radouai, 2020).

### 5.1. Long-Run Estimates

Tables 2 and 3 show the long-run relationship between external debt and GDP growth for emerging and developing economies respectively. The results for emerging economies indicate that the relationship between external debt and economic growth is statistically significant. However, the small coefficient of -010137477 indicates that this relationship is weak in contrast to the non-significant short-run estimates for developing countries. This shows that for emerging economies, external debt has a potential negative impact on economic growth in the long-run implying external debt as a probable negative long-run determinant of economic growth in the case of emerging economies, a more in-depth study is recommended to get a more robust result.

On the other hand, for developing countries, the long-run relationship is also highly statistically significant with a comparatively high negative coefficient implying a potential negative long-run relationship between external debt and economic growth for developing countries. This shows that external debt is a long-run determinant of economic growth and potentially impacts GDP growth adversely in the long-run for developing countries. This is consistent with short-run estimates done previously indicating external debt being a major determinant of economic growth in developing countries both in the short- and long-run. However, a threshold analysis might result in a better analysis of the relationship, for more robust results a more in-depth study is advisable.

## 6. Conclusion

In this research, the effects of external debt on economic growth were examined for 24 developing and 21 emerging economies. It used the dynamic panel data GMM model to analyze the data from 2010 to 2019 across various cross-sections. The results suggest that foreign debt may be adverse to economic growth in developing countries and that larger levels of external debt are likely to have a long-term negative impact on economic growth in these conditions. There is a negligible relationship between external debt and economic growth in emerging economies as evidenced by the negative but insignificant effect that debt has on growth. Nonetheless, long-term

estimates indicate a likely negative long-run relationship between debt and economic growth, with a weak but significant and negative relationship found between external debt and growth.

External debt can have a positive or negative impact on economic development depending on how countries and governments manage it to develop productive infrastructure and prevent the wastage of human capital. The complexity of the developing and emerging economies' development problems, the severity of their potential and the extent of their need to finance development make it impossible for domestic resources to cover these countries' budget deficits. It is appropriate to use additional sources of financing for the economies in addition to budgetary resources and national reserves. Most developing countries worldwide rely on external debt to finance their development but this debt remains the biggest obstacle to economic growth and development today.

The growing reliance on external borrowing not only hinders economic growth by increasing the burden on the economy through enormous debt obligations and debt servicing to foreign lender but also deteriorates the long-term prospects of economic growth by shrinking available resources for future investment and development in the economy. This puts external debt as one of the negative factors that creates a negative externality in the economy and impedes the development of the economy. Thus, robust policy making and better debt management is the need of the time. The following policy recommendations can prove to be pivotal in better debt management and the long-term economic growth associated with it based on the current standings and our analysis.

## 7. Policy Recommendations

### 7.1. Developing Economies

- For a better management of debt, developing countries must follow a balance between domestic borrowing, as external debt has a highly significant and negative impact on the economic growth of developing countries; thus, a greater reliance on domestic debt and less reliance on external debt would be a major factor in steady long-term economic growth in these economies (Burns, 2010).
- Structural reforms are vital for developing countries to sustain long-term economic growth. Most of these economies suffer from a large portion of the underground economy which excludes a large section of the economy from the tax net. A targeted policy would help increase the tax revenue in the economy and thus lessen the overreliance on external or domestic borrowings.
- A better fiscal management is necessary. Developing countries must develop a mechanism to curb the overburden of external debt on the economy. Spending tax money on profitable investment rather than debt servicing would ensure sustainable growth in the economy.
- Investor confidence both for domestic investors and foreign investors should be ensured by credible and stable policies coupled with political stability in the economy. Developing countries suffer from low political stability, high insecurity and low credibility. Thus, investor confidence can be boosted which in turn will be beneficial for steady economic growth by ensuring stable regimes and policies.

### 7.2. Emerging Economies

- For emerging economies, the first and foremost policy should be based on incentives to domestic as well as foreign investors through subsidies, tax cuts, and less official procedures. This would bolster investor confidence and incentivize them to invest in the economy which will be beneficial for sustainable long-run economic growth.
- Targeted fiscal policies on inflation are necessary for emerging economies. As inflation has potential negative impacts on economic growth, targeted fiscal and monetary policies would ensure inflation remains low and sustainable.
- Although insignificant, the external debt has a potential negative effect on economic growth and a weak but negative impact in the long-run. Thus, debt management policies are advised for emerging economies and the used of other alternatives such as domestic borrowing and increasing tax revenue is recommended.

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