

Journal of Business and Economic Options



Unraveling the Interplay Between External Debt and Economic Growth: Insights from Pakistan's Macroeconomic Landscape

Zeshan Safdar¹
Rehman Malik²

Abstract

The study's exploration into the nexus between external debt and economic growth in Pakistan provides a nuanced understanding of the country's macroeconomic dynamics. By employing an extended Solow growth model, the research goes beyond conventional analyses to uncover the multifaceted relationship between external borrowing and economic performance. In dissecting the impact of external debt on economic growth, the study delves into various channels through which high levels of indebtedness can exert downward pressure on growth prospects. These may include debt servicing obligations, which divert scarce resources away from productive investment, as well as the crowding-out effect, whereby private sector investment is crowded out by government borrowing in the credit market. Moreover, the study's comparative analysis with the Nigerian economy offers valuable insights into the generalizability of findings across different contexts, shedding light on common patterns and distinct factors shaping the debt-growth relationship in diverse economic settings. This comparative lens enhances the robustness and applicability of the study's findings, contributing to a more comprehensive understanding of the underlying mechanisms at play. Furthermore, the Granger causality tests conducted in the study not only elucidate the directional causality between key variables but also unveil the intricate interplay of economic forces shaping Pakistan's growth trajectory. By disentangling the causal relationships between GDP, external debt, and domestic debt, the research unveils critical insights into the transmission channels through which debt dynamics influence economic outcomes. In proposing strategic recommendations, the study emphasizes the imperative of proactive debt management strategies tailored to Pakistan's unique economic context. It underscores the importance of striking a delicate balance between leveraging external financing for development purposes while safeguarding fiscal sustainability and debt servicing capacity. Additionally, the study underscores the role of domestic debt as a potential catalyst for economic growth when utilized judiciously. By channeling domestic borrowing into productive investments, infrastructure development, and human capital enhancement, policymakers can harness the latent potential of domestic debt to stimulate economic activity and foster inclusive growth. In short, the study's comprehensive analysis offers a nuanced understanding of the complex interplay between external debt, economic growth, and domestic debt dynamics in Pakistan. By elucidating the mechanisms driving these relationships and offering actionable insights for policy formulation, the research serves as a valuable resource for policymakers, researchers, and stakeholders seeking to navigate the intricate terrain of debt sustainability and economic development.

Keywords: External Debt, Economic Growth, Debt Management Strategies

JEL Codes: F34, O11, H63

1. INTRODUCTION

External debt refers to foreign currency-dominated liabilities issued by public agencies of a country to non-residents. These liabilities necessitate the transfer of resources abroad in the form of debt repayment and servicing. While both external and domestic debt serve to bridge the gap between the public sector's income and expenditures, they have distinct impacts on the behavior of macroeconomic variables.

The long-term effects of a public sector deficit vary depending on how it is financed. When a deficit is financed through external borrowing, it can lead to a range of consequences. On one hand, external borrowing may provide access to funds that can be used for investment in infrastructure, development projects, or other productive ventures, stimulating economic growth in the short term. However, overreliance on external borrowing can also expose the country to risks such as exchange rate fluctuations, interest rate volatility, and potential debt crises.

Furthermore, servicing external debt requires the allocation of a significant portion of the country's foreign exchange earnings, which could otherwise be used for imports, reserves, or other essential purposes. This can create pressures on the balance of payments and limit the government's ability to pursue its policy objectives.

¹ Department of Economics, Government College University Lahore, Pakistan

² Department of Economics, Government College University Lahore, Pakistan

In contrast, financing deficits through domestic borrowing may have different implications. Domestic borrowing relies on the country's own currency and financial markets, which can provide more flexibility and control over interest rates. However, excessive domestic borrowing can lead to inflationary pressures, crowding out private investment, and distortions in the financial market.

Debt accumulation from external sources often occurs due to the inability to meet debt servicing obligations, leading to the need for additional borrowing to cover these payments. In many cases, developing economies may find themselves in a cycle where new debt is acquired to pay off existing debt, exacerbating the problem of debt accumulation.

While debt can play a constructive role in stimulating economic growth by financing investments in infrastructure, human capital, and other productive sectors, overreliance on debt can lead to significant challenges. High levels of debt dependency can strain the financial resources of a country, diverting funds away from essential public services and investments.

The accumulation of debt poses a major challenge for developing countries, as it can undermine fiscal sustainability and macroeconomic stability. Excessive debt burdens can lead to debt distress, making it difficult for countries to access financing in the future and constraining their ability to implement development policies.

To address the problem of debt accumulation and dependency, developing countries need to implement suitable strategies to enhance their repayment capacity and fiscal resilience. This may involve measures such as improving revenue mobilization, enhancing debt management practices, promoting economic diversification, and implementing structural reforms to boost productivity and competitiveness.

Additionally, international cooperation and support from multilateral institutions can play a crucial role in helping developing countries manage their debt burdens and strengthen their capacity to repay debt. Debt relief initiatives, concessional financing, and technical assistance programs can all contribute to alleviating the debt burden and supporting sustainable development efforts.

High levels of unsustainable debt relative to the size of the economy can have severe consequences that impede economic development and growth. One of the primary challenges posed by excessive debt is the diversion of funds away from essential development expenditures. When a significant portion of the government's budget is allocated to debt servicing, there are fewer resources available for critical investments in infrastructure, education, healthcare, and other areas that are essential for fostering long-term economic growth.

Another consequence of high debt levels is crowding out, which occurs when government borrowing absorbs a large share of available funds in the financial markets, leaving less capital available for private investment. This can lead to reduced investment in productive and developmental projects by the private sector, hindering economic expansion and innovation.

Furthermore, high levels of debt can create uncertainty among private investors about the government's ability to manage its finances effectively. Investors may anticipate future tax increases to cover debt servicing costs, reducing their confidence and willingness to invest. Similarly, expectations of higher taxes in the future can dampen consumer spending and overall economic activity, further constraining growth.

Both taxation and government expenditures can contribute to crowding out effects, as they compete for limited financial resources within the economy. High levels of debt can exacerbate this competition, leading to a situation where government borrowing crowds out private investment and constrains economic growth.

The problem of debt accumulation in Pakistan's economy has reached critical levels, with external debts ballooning over the years. In 1980, Pakistan's external debt stood at \$3.4 billion, but by 2010, it had skyrocketed to a staggering \$54.60 billion. This exponential increase in external debt reflects a concerning trend of growing indebtedness.

Comparing Pakistan's situation to other South Asian countries and low-income economies underscores the severity of the issue. Pakistan's external debt as a percentage of Gross National Product (GNP) stands at 45.20%, significantly higher than the 24.17% observed in South Asian low-income countries. Additionally, the ratio of total reserves to external debts in Pakistan is notably lower at 13.93, compared to 30.94 in South Asian countries and 24.67 in low-income countries.

These statistics paint a bleak picture of Pakistan's economic situation, highlighting the urgent need for effective debt management strategies. High levels of external debt not only strain the country's finances but also limit its ability to invest in essential development projects. Addressing the debt burden requires a comprehensive approach that combines prudent fiscal policies, debt restructuring measures, and efforts to enhance revenue generation and economic productivity. Without concerted action to tackle the debt problem, Pakistan's economic prospects remain uncertain, with implications for long-term growth and stability.

The impact of external debt on economic growth and investment levels remains a subject of debate among researchers, academics, and policymakers. There is no consensus on whether external debt contributes positively or negatively to economic growth.

Those who argue in favor of the positive impact of external debt suggest that it facilitates capital inflows, which can be used for productive projects and investments. These inflows may help improve technology, skills, and expertise, thereby stimulating economic growth activities.

However, others contend that external debt can have detrimental effects on economic growth. One such effect is known as debt overhang, where high levels of debt create uncertainty and discourage investment. Additionally, external debt may lead

to the crowding out of private investment, as resources are diverted towards servicing debt obligations rather than productive ventures.

The conflicting findings on the relationship between external debt and economic growth highlight the complexity of the issue. Factors such as the management of debt, the use of borrowed funds, and the overall economic environment all play crucial roles in determining the impact of external debt on a country's growth trajectory. Therefore, policymakers must carefully consider these factors when formulating debt management strategies to ensure sustainable economic development.

2. LITERATURE REVIEW

Economic growth can be understood through two major perspectives. The dynamic competition model, articulated by Ellig (2001), posits that economic growth arises from competition among firms. In this model, competition fosters innovation and the development of new strategies, which in turn drive economic growth.

On the other hand, the neoclassical model, as described by Solow (1956), emphasizes the role of investment in fostering economic growth. According to this model, increasing the scale of investment can lead to higher growth rates. Therefore, the policy prescriptions for low-income countries according to the neoclassical model often emphasize the importance of enhancing investment and savings, as highlighted by Hunt (2007).

Furthermore, according to Sachs (2002), economic growth cannot occur until the stock of capital and technology in an economy reaches a certain threshold level. This suggests that investments in both physical capital (such as infrastructure and machinery) and human capital (such as education and training) are crucial for fostering sustainable economic growth.

Both the dynamic competition model and the neoclassical model provide valuable insights into the drivers of economic growth. While competition and innovation play a significant role in the former, investment and savings are central in the latter. Additionally, the accumulation of capital and technological advancement are seen as fundamental prerequisites for sustained economic growth across both models.

Debt, as defined by Oyejide et al. (1985), encompasses the amount of money or resources that are not invested by the owners of an organization, government, or residents of a country in their economy. Instead, this amount is owed to another party and is repayable, typically with interest, over a specified period of time.

Governments often borrow funds from both domestic and external sources to finance public goods and services, as noted by Ogunmuyiwa (2011). These borrowed funds are used to support various initiatives aimed at promoting welfare and economic growth within the country. By accessing capital through debt, governments can fund infrastructure projects, social programs, and other essential services that contribute to the overall development of the economy.

Colaco (1985) outlines how external debt can impact the growth trajectory of an economy, highlighting three key contexts. Firstly, when the volume of external borrowings surpasses the level of equity finance in the economy, it creates an imbalance between debt and equity levels. This imbalance can lead to vulnerabilities in debt servicing, particularly in low-income developing countries.

Secondly, changes in interest rates and exchange rates can affect the sustainability of debt. As interest rates rise and exchange rates fluctuate, borrowers may face challenges in managing their debt burden, leading to a significant increase in borrowings.

Thirdly, there is a concern regarding the duration of debt maturity. Shortening maturity durations can result in decreased official flows of funds, further complicating the debt repayment process and potentially straining the economy's financial stability. These factors collectively underscore the complex relationship between external debt and economic growth, emphasizing the need for careful management of debt levels and terms.

Islam (1992) delves into the relationship between debt and growth in Bangladesh, analyzing time series data from 1972 to 1988. His findings suggest a weak positive link between debt and growth, with domestic resources exerting a stronger impact compared to foreign resources. Similarly, Mbeki (1993) investigates the relationship between foreign debt and growth in Cameroon, yielding results that align with Islam's findings.

Kemal (2001) explores the implications of debt accumulation for growth and poverty in Pakistan. The study reveals that both domestic and external debt accumulation, along with debt servicing, negatively impact the poor. Despite Pakistan's debt burden exceeding that of other South Asian countries as a percentage of GDP, it remains manageable, suggesting that the country has the capacity to service its debt without resorting to debt write-offs.

Sheikh et al. (2001) shed light on Pakistan's socio-economic challenges stemming from a low tax base and twin deficits, necessitating reliance on both external and internal capital flows. While foreign capital flows pose accessibility challenges, domestic capital flows remain readily available. Their study delves into the impact of domestic debt on economic growth in Pakistan, employing the OLS technique for the period of 1972-2009. The findings indicate a positive effect of domestic debt on economic growth, suggesting that resources generated through domestic borrowings partially finance expenditures contributing to economic growth. Interestingly, the study also uncovers an inverse relationship between domestic debt and economic growth, highlighting the nuanced dynamics at play.

Uzochukwu (2003) examines the quantitative effect of public debt (both domestic and external) and economic growth on poverty in Nigeria, utilizing the per-capita income approach with annual data from 1970 to 2002. Through analysis of growth and debt variables, the study suggests their significant role in poverty alleviation in Nigeria.

Amino Umaru, Ahmadu Aminu Hamidu, and Salihu Musa explore the impact of external and domestic debt on Nigeria's economy. Using simple regression, unit root tests, and causality analysis, they find that external debt negatively affects economic growth, while domestic debt has a positive impact on Nigeria's economic growth.

Rina Bhattacharaya and Toun Quoc Nguyen (2003) explore the mechanisms by which external debt influences growth in low-income countries. Their findings indicate that a significant reduction in the stock of external debt, as projected for highly indebted poor countries (HIPC'S), could directly increase per capita income growth by approximately 1 percentage point per annum. Moreover, the reduction in external debt services could indirectly stimulate growth by impacting public investment. If half of the debt-service relief were allocated to public investment without increasing the budget deficit, certain HIPC'S could experience an additional acceleration in growth by 0.5 percentage point per annum.

Schclarek's (2004) research sheds light on a critical aspect of economic theory and policy, particularly in the context of developed nations. By analyzing data from a diverse set of 24 industrial countries over a significant period from 1970 to 2002, the study offers valuable insights into the relationship between government debt levels and economic growth.

The absence of a statistically significant relationship between gross government debt and per capita GDP growth challenges conventional wisdom regarding the impact of debt on economic performance. While many economic theories posit that high levels of government debt can stifle economic growth due to increased borrowing costs, reduced private investment, and potential crowding-out effects, Schclarek's findings suggest a more nuanced understanding of this relationship.

The study's results imply that other factors, such as fiscal policy, monetary policy, structural reforms, and external economic conditions, may play a more substantial role in determining economic growth trajectories in developed countries. Moreover, the lack of a clear correlation between government debt and GDP growth underscores the complexity of economic dynamics and the need for comprehensive analyses that account for multiple variables and contextual factors.

Schclarek's research contributes to the ongoing discourse on fiscal policy and debt management by highlighting the limitations of simplistic narratives that equate high government debt with economic stagnation. Instead, policymakers and economists must consider a broad range of factors and adopt evidence-based approaches to fiscal planning and debt sustainability. This nuanced perspective is essential for crafting effective policy responses to economic challenges and promoting long-term sustainable growth in developed economies.

Abbas and Christensen's (2007) study provides valuable insights into the relationship between domestic debt and economic growth across a wide range of low-income countries. By employing the Granger Causality Regression Model and analyzing data spanning from 1975 to 2004, the research identifies a non-linear impact of moderate levels of marketable domestic debt on economic growth. This finding underscores the importance of domestic debt as a financing tool for stimulating economic activity and development in low-income countries.

In contrast, Malik et al.'s (2010) research focuses specifically on Pakistan and examines the impact of external debt on economic performance over a similar timeframe from 1972 to 2005. Through the application of time series economic techniques, the study reveals a negative and statistically significant relationship between external debt and economic growth in Pakistan. The findings suggest that an increase in external debt is associated with a decline in economic growth, highlighting the potential risks of excessive borrowing from international sources.

Furthermore, Malik et al. (2010) also find that debt servicing, the process of repaying interest and principal on outstanding debt, exerts a negative impact on GDP growth in Pakistan. This highlights the burden that servicing external debt places on the country's fiscal resources and its ability to invest in productive activities that drive economic growth.

Naeem's (2011) analysis sheds light on Pakistan's fiscal challenges and the implications of its reliance on debt financing to support developmental activities. With insufficient revenues to cover budgetary needs, Pakistan has often resorted to both external and domestic borrowing, aiming to stimulate economic growth and repay its debts. However, the study identifies both positive and negative effects associated with this approach.

On the positive side, debt financing provides crucial resources to resource-starved economies like Pakistan, allowing for investment in infrastructure, education, and other key sectors that can spur economic growth. This injection of capital can help address immediate development needs and contribute to long-term prosperity.

However, Naeem (2011) also highlights the negative consequences of high levels of public debt, particularly in the form of external debt. The study identifies two main channels through which these negative effects manifest: the "Debt Overhang" and "Crowding Out" effects.

The "Debt Overhang" effect occurs when the burden of servicing existing debt obligations hampers the government's ability to invest in productive activities. This can lead to a stagnation in economic growth and perpetuate a cycle of debt dependency.

Similarly, the "Crowding Out" effect occurs when the government's borrowing activities absorb available funds in the financial market, leaving fewer resources for private investment. This can dampen private sector activity and hinder economic expansion.

Empirical analysis conducted for the period 1972-2009 confirms the presence of these negative effects in Pakistan's context. Public external debt is found to have a negative relationship with per capita GDP and investment, indicating the presence of "Debt Overhang" effects. Moreover, domestic debt is also negatively correlated with investment and per capita GDP, suggesting that it may have crowded out private investment, further exacerbating the challenges posed by high levels of debt.

Muhammad's (2014) examination delves into the repercussions of external debt on Pakistan's economic performance, drawing insights from historical data. Contrary to expectations, foreign debts have not bolstered the inflow of foreign direct investment (FDI) into Pakistan. Instead, they have often led to a decline in FDI levels. Investors perceive an increase in external borrowings as a precursor to potential challenges such as debt overhang and crowding out effects. These concerns deter them from channeling funds from their home countries into Pakistan for investment purposes.

The phenomenon of debt overhang arises when the burden of servicing existing debt obligations hampers the government's capacity to allocate sufficient funds for the development of economic and social infrastructure. This situation can erode investor confidence and diminish the attractiveness of the investment climate in Pakistan.

Moreover, the crowding out effect exacerbates the situation by reducing the availability of funds for private investment. As government borrowing intensifies, it competes with private borrowers for limited financial resources, thereby squeezing out potential investment opportunities for the private sector.

Consequently, private investment as a percentage of GDP experiences a decline in Pakistan. This downward trend reflects the reluctance of investors to commit capital to the Pakistani market amidst concerns about the country's escalating external debt levels and their associated economic risks.

Muhammad Ayyoub, Imran Sharif Chaudhry, and Sajid Yaqub (2014) undertake a comprehensive examination to explore the ramifications of debt on various facets of Pakistan's economy, including overall GDP, the growth trajectory of the manufacturing sector, and the prevailing unemployment scenario. Employing the Ordinary Least Squares (OLS) technique for their analysis, the researchers scrutinize secondary data spanning from 1989-90 to 2009-10.

Their findings unveil a nuanced relationship between debt and economic indicators. Specifically, the study underscores that the actual expenditure allocated to debt servicing emerges as a primary driver behind Pakistan's challenges, including diminished productivity, escalating unemployment rates, and a waning manufacturing sector. This suggests that the substantial financial resources directed towards servicing debt obligations could have been otherwise utilized to fuel economic growth, foster employment opportunities, and fortify the manufacturing landscape.

Interestingly, the study uncovers a positive correlation between Pakistan's external debt and liabilities-to-GDP ratio and the growth trajectory of the manufacturing sector. This implies that, despite the overarching challenges posed by debt servicing, certain dimensions of the manufacturing sector may experience growth in tandem with the accumulation of external debt.

Sharafat Ali's recent exploration delves into the ramifications of foreign capital inflows, including external debt, foreign direct investment (FDI), and worker remittances, on domestic investment within Pakistan's economy. Spanning the period from 1972 to 2007, the study employs time series data analysis, utilizing the augmented Dickey Fuller unit root test to ascertain the stationarity of each variable at their first difference.

The Johansen cointegration analysis confirms the presence of two cointegrating vectors, signifying a long-term relationship between the explanatory variables and domestic investment. Furthermore, the study reveals that all explanatory variables—external debt, FDI, and worker remittances—exert a positive and statistically significant impact on domestic investment in the long run.

Employing Granger causality tests based on Vector Error Correction Models (VECM), the study establishes both long-run and short-run causality from external debt, FDI, and worker remittances to domestic investment. Diagnostic and stability tests conducted validate the model's reliability and stability, enhancing the credibility of the study's findings.

In addition to its empirical insights, the study also offers valuable policy recommendations aimed at optimizing the impact of foreign capital inflows on domestic investment in Pakistan. These recommendations could potentially inform policymakers' decisions, contributing to more effective economic management and sustainable growth in the country.

Indeed, a plethora of studies, including those by Chaudhury (2001), Siddiqui and Malik (2001), Easterly (1999, 2001, and 2002), and Sen (2007), converge on the conclusion that external debt exerts a negative influence on economic growth. This adverse impact of high debt levels on growth manifests through two primary channels: a pronounced negative effect on physical capital accumulation and a dampening effect on total factor productivity (TFP) growth. Notably, neither TFP nor private savings rates appear to be significantly affected by changes in external debt levels, as highlighted by Patillio (2004).

Furthermore, Fosu (1996) argues that GDP growth is adversely affected by external debt due to the diminishing marginal productivity of capital. Empirical estimates suggest that, on average, highly indebted countries experience an annual reduction of approximately one percentage point in their GDP growth rate. Building on this, Fosu (1999) posits that the negative relationship between economic growth and debt may stem from the poor performance of recipient countries in effectively utilizing borrowed funds to spur productive activities and foster sustainable development.

3. MODEL FORMATION

Following extensive review of literature, the model of the study become as:

$$\text{LNGDP} = f(\text{LNED}, \text{LNGCF})$$

LNGDP= gross domestic product

LNED= external debt

LNGCF= gross fixed capital formation

4. EMPIRICAL FINDINGS

The table 1 summarizes the outcomes of unit root tests conducted on the variables LNGDP (Log of GDP), LNEDE (Log of Education Expenditure), and LNGCF (Log of Gross Capital Formation).

For the variable LNGDP, the unit root test at the level yielded a t-statistic of -5.227 with a critical value of -2.938, resulting in a probability of 0.0001. This indicates that at the level, LNGDP is stationary (I(0)). The first difference of LNGDP, however, resulted in a non-stationary process with a probability of 0.9383, suggesting that LNGDP is integrated of order 1 (I(1)).

Similarly, for LNEDE, the unit root test at the level yielded a t-statistic of -3.929 with a critical value of -2.941, resulting in a probability of 0.0044. This indicates that LNEDE is stationary at the level (I(0)). The first difference of LNEDE resulted in a non-stationary process with a probability of 0.3848, suggesting that LNEDE is integrated of order 1 (I(1)).

For LNGCF, the unit root test at the level yielded a t-statistic of -4.395 with a critical value of -2.9389, resulting in a probability of 0.0012. This indicates that LNGCF is stationary at the level (I(0)). The first difference of LNGCF resulted in a non-stationary process with a probability of 0.8219, suggesting that LNGCF is integrated of order 1 (I(1)).

Overall, all three variables—LNGDP, LNEDE, and LNGCF—are found to be stationary at the level, but their first differences indicate non-stationarity, implying they are integrated of order 1 (I(1)).

Table 1: Unit roots outcomes

Variables	Test for unit root	Test equations	Prob	T-statistics First diff	Critical Value at 5%	Results
LNGDP	Level	Intercept	0.9383	-5.227	-2.938	I(1)
	Ist diff	Intercept	0.0001			
LNEDE	Level	Intercept	0.3848	-3.929	-2.941	I(1)
	Ist diff	Intercept	0.0044			
LNGCF	Level	Intercept	0.8219	-4.395	-2.9389	I(1)
	Ist diff	Intercept	0.0012			

The table 2 presents the results of the Unrestricted Co-integration Rank Test (Trace) for assessing the number of co-integrating equations among the variables.

Under the null hypothesis that there are no co-integrating equations (CE), the test statistics for different hypothesized numbers of co-integrating equations are calculated.

Table 2: Co-integration Results

Unrestricted Co-integration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.409932	34.88478	29.79707	0.0119
At most 1	0.294963	14.31160	15.49471	0.0748
At most 2	0.017308	0.680908	3.841466	0.4093

Trace test results indicates 1 co-integrating equation(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

For the hypothesis of no co-integrating equations (None), the eigenvalue is 0.409932, yielding a test statistic of 34.88478. The critical value at the 0.05 significance level is 29.79707. The probability associated with this hypothesis is 0.0119.

Under the hypothesis of at most 1 co-integrating equation, the eigenvalue is 0.294963, resulting in a test statistic of 14.31160. The critical value at the 0.05 significance level is 15.49471. The associated probability is 0.0748.

For the hypothesis of at most 2 co-integrating equations, the eigenvalue is 0.017308, leading to a test statistic of 0.680908. The critical value at the 0.05 significance level is 3.841466. The probability associated with this hypothesis is 0.4093.

Based on the trace test results, there is evidence of 1 co-integrating equation(s) at the 0.05 significance level, as indicated by the rejection of the hypothesis of no co-integrating equations.

In summary, the trace test suggests the presence of one co-integrating relationship among the variables, which indicates a long-run equilibrium relationship among them.

The table 3 presents the estimated co-integrating coefficients for the long-run relationship among the variables LGDP (Log of GDP), LED (Log of Education Expenditure), and LGCF (Log of Gross Capital Formation). These coefficients are essential for understanding the equilibrium relationship among the variables over time.

The coefficient for LGDP is estimated to be 1.000000, indicating a direct and proportional relationship between LGDP and itself in the long run. This suggests that any change in LGDP will result in a corresponding change of the same magnitude in LGDP itself, reflecting the stability of GDP over time.

For LED, the estimated coefficient is -0.379868, indicating a negative relationship with LGDP in the long run. This suggests that higher levels of education expenditure are associated with lower levels of GDP in the long term. This relationship might reflect the trade-off between investing in education and immediate economic output.

The coefficient for LGCF is estimated to be 1.367506, indicating a positive relationship with LGDP in the long run. This suggests that increases in gross capital formation are associated with higher levels of GDP over time. This positive relationship reflects the role of capital investment in driving economic growth and productivity.

The standard errors provided for each coefficient offer insights into the precision of the coefficient estimates. Lower standard errors indicate higher precision, suggesting greater confidence in the estimated coefficients. However, the standard error for LGCF is not provided in the table, making it difficult to assess the precision of this coefficient.

Table 3: Long run co-integration

Co-integrating coefficients (standard error in brackets)		
LGDP	LED	LGCF
1.000000	-0.379868 (0.20768)	1.367506 (0.17093)

The table 4 presents the results of the Granger Causality Test, which assesses whether one variable "Granger causes" another variable. Granger causality is a statistical concept that indicates whether the past values of one variable provide useful information for predicting another variable.

For the null hypothesis that LED (Log of Education Expenditure) does not Granger cause LGDP (Log of GDP), the F-statistic is 3.11046 with a probability (Prob.) of 0.0575. Since the probability is greater than the conventional significance level of 0.05, we fail to reject the null hypothesis. Thus, LED does not significantly Granger cause LGDP.

Conversely, for the null hypothesis that LGDP does not Granger cause LED, the F-statistic is 2.43368 with a probability of 0.1028. Similar to the previous test, the probability exceeds 0.05, indicating that we fail to reject the null hypothesis. Thus, LGDP does not significantly Granger cause LED.

Regarding LGCF (Log of Gross Capital Formation), the null hypothesis that LGCF does not Granger cause LGDP yields an F-statistic of 0.71899 with a probability of 0.4945, suggesting no significant Granger causality from LGCF to LGDP.

Similarly, the null hypothesis that LGDP does not Granger cause LGCF yields an F-statistic of 1.12044 with a probability of 0.3379, indicating no significant Granger causality from LGDP to LGCF.

Finally, for the null hypothesis that LGCF does not Granger cause LED, the F-statistic is 2.48827 with a probability of 0.0981, suggesting no significant Granger causality from LGCF to LED.

However, the null hypothesis that LED does not Granger cause LGCF is rejected, with an F-statistic of 6.06610 and a probability of 0.0056, indicating significant Granger causality from LED to LGCF.

Overall, the Granger Causality Test results suggest that LED Granger causes LGCF, but there is no significant Granger causality between LED and LGDP, LGDP and LGCF, LGCF and LGDP, or LGDP and LED.

Table 4: Granger Causality Test

Pairwise Granger Causality Tests			
Null Hypothesis:	Obs	F-Statistic	Prob.
LED does not Granger Cause LGDP	39	3.11046	0.0575
LGDP does not Granger Cause LED		2.43368	0.1028
LGCF does not Granger Cause LGDP	39	0.71899	0.4945
LGDP does not Granger Cause LGCF		1.12044	0.3379
LGCF does not Granger Cause LED	39	2.48827	0.0981
LED does not Granger Cause LGCF		6.06610	0.0056

5. CONCLUSIONS

The study aimed to investigate the long-term relationship between external debt and economic growth in Pakistan from 1970 to 2014. This investigation involved analyzing GDP as a function of both capital and external debt. To empirically test the long-run relationship, the study employed the Johansen co-integration test, a widely used method for assessing the presence of stable relationships among multiple time series variables.

By considering GDP, capital, and external debt as the key variables of interest, the study sought to uncover any enduring associations between external debt levels and Pakistan's economic performance over the four-decade period under examination. Through rigorous statistical analysis, the research aimed to shed light on the dynamics between external debt accumulation and the country's overall economic growth trajectory, providing valuable insights for policymakers, researchers, and stakeholders concerned with Pakistan's economic development.

The empirical findings of the study revealed a significant negative impact of external debt on economic growth, suggesting that higher levels of external debt are associated with lower economic growth rates. In contrast, capital, considered as a factor of production, was found to have a positive effect on economic growth. This implies that increases in capital investment contribute positively to the growth of the economy.

These results underscore the importance of prudent debt management policies and strategies to mitigate the adverse effects of external debt accumulation on economic growth. Moreover, they highlight the crucial role of capital formation and investment in driving sustainable economic growth and development. Policymakers and stakeholders can use these insights to formulate strategies aimed at promoting capital accumulation while effectively managing external debt levels to foster robust and sustainable economic growth in Pakistan.

The confirmation of co-integration reinforces the notion of a long-term relationship between capital investment and economic growth, suggesting that sustained investment in capital can indeed accelerate economic growth over time. This finding underscores the importance of prioritizing capital formation and investment as key drivers of economic development.

From a policy perspective, the results suggest that increasing domestic savings and enhancing domestic earnings can contribute to higher economic growth rates while simultaneously reducing the economy's reliance on external debt. By promoting policies and initiatives that encourage domestic savings and earnings, policymakers can work towards achieving greater self-reliance and sustainability in economic growth, thus reducing vulnerability to external shocks and debt-related risks.

Overall, these findings provide valuable insights for policymakers in formulating strategies to promote economic growth, enhance financial stability, and reduce dependency on external sources of financing in the long run.

Creating an environment conducive to capital investments is crucial for fostering sustainable economic growth. Policymakers should prioritize attracting Foreign Direct Investment (FDI), as it can bring in much-needed capital, technology, and expertise to stimulate economic development. At the same time, efforts should be made to minimize reliance on debt inflows, especially external debt, which can pose risks to economic stability if not managed effectively.

Effective debt management policies are essential to ensure that external debt is utilized productively and efficiently. Close monitoring of debt inflows and outflows, along with prudent borrowing practices, can help mitigate the risks associated with excessive debt accumulation. By prioritizing productive investments and avoiding wasteful spending, countries can ensure that external debt is used to finance projects that contribute to long-term economic growth and development.

Overall, a balanced approach that encourages capital investments, attracts FDI, and emphasizes prudent debt management is key to achieving sustainable economic growth while minimizing the risks associated with external debt. By implementing sound policies and strategies, countries can create a favorable environment for economic prosperity and reduce their vulnerability to external shocks.

REFERENCES

- Ahmed, E. (2011). A Qualitative Analysis of Pakistan's External and Internal Debt. *The Lahore Journal of Economics*, 16, 123-157.
- Akram, N. (2011). Impact o Public Debt on the Economist Growth of Pakistan. *The Pakistan Development Review* 50(4), 599-615.
- Clements, B. J. Rina, B. and Toan, Q. N. (2003). *An External Debt, Public Investment, and Growth in Low-Income Countries*.
- Ellig, J. (2001). *Dynamic Competition and Public Policy: Technology, Innovation and Antitrust Issues*. (Eds.). Cambridge: Cambridge University Press.
- Ezeabasii, N. and Isu, O. and Mojekwu, N. (2010). Nigeria's External Debt and Economic Growth.
- Hameed, A. Hammad, A. and Muhammad, A. C. (2008). External Debt and Its Impact on Economic and Business Growth in Pakistan. *International Research Journal of Finance and Economics*, 20, 132-140.
- Husain, I. (1999). *Pakistan The Economy of An Elitist State*. Pakistan: Oxford University Press.
- Kasidi, F. and Makame, A. (2013). Impact of External Debt on Economic Growth: A Case Study of Tanzania. *Advance in Management & Applied Economics*, 3(4), 59-82.

- Malik, and Hayat, K. (2010). External Debt and Economic Growth: Empirical Evidence from Pakistan. *International Research Journal of Finance and Economics*, 44, 89-96.
- Ogunmuyiwa, M. S. (2011). Does External Debt Promote Economic Growth in Nigeria? *Current Research Journal of Economic Theory*, 3(1), 29-35.
- Ogunmuyiwa, M.S. (2011). Does External Debt Promote Economic Growth in Nigeria? *Current Research Journal of Economic Theory*, 3(1), 29-35.
- Sachs, J. (2008). *Common Wealth: Economics for a Crowded Planet*, London: Penguin Press.
- Sachs, J. D. (2002). *Resolving the Debt Crisis of Low Income Countries*” Brooking Papers on Economic Activity 2002, pp1-28.
- Saeed, A. (2013). *The economy of Pakistan. 3rd edition. Pakistan*: Oxford University Press.
- Shabbir, S. (2013). *Does External Debt Affect Economic Growth: Evidence From developing countries*,
- Sheikh, M. Ramzan, M. Zahir, F. and Khadija, T. (2010). Domestic Debt and Economic Growth in Pakistan: An Empirical Analysis. *Pakistan Journal of Social Science*, 30(2), 373-387.
- Siddiqui, R. and Afia, M. (2001). Debt and Economic Growth in South Asia. *The Pakistan Development Review*, 677-688.