

Public Debt and Economic Growth: Evidence from Nepal

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Abstract

This research aims to investigate the effects of public debt on economic growth in Nepal based on time-series information covering the period of 1985/86 to 2023/24. It uses the Autoregressive Distributed Lag (ARDL) bounds-testing to examine the long and short-run relationships between the elements of the public debt and the economic performance. The continued fiscal deficits and the resulting increase in dependence of domestic and foreign borrowing to meet development spending require a thorough insight into the dynamics of debt-growth to formulate effective policies in Nepal. The results obtained empirically indicate a high cointegration of the variables and the F-statistic value of 6.847 is above critical values at all standard levels of significance. The long-term outcomes indicate that the internal debt is positively and statistically significantly correlated with the economic growth (coefficient: 0.28), which means that domestic borrowing plays an effective role in supporting the economic development with productive investments. In contrast, external debt is associated with growth (coefficient: -0.21), which suggests the possibility of debt -overhang and ineffective use of foreign borrowing. The relationship between export performance and economic growth is positive (coefficient: 0.47) and it is important to note that trade plays a significant role in long-run economic growth. According to the error-correction model, the rate of adjustment is moderate (17 percent per year) which implies that short run disequilibria are corrected quite slowly. This study contributes to understanding public debt dynamics and provides evidence-based policy implications for sustainable debt management in the Nepalese context.

Keywords: ARDL bounds test, Cointegration, Fiscal policy, Economic growth, Public debt

Introduction

Public debt is a critical macroeconomic variable that has an overwhelming effect on the economic performance in Nepal and other developing economies. Governments are becoming more reliant on national and international funding to support infrastructure construction and other diverse government projects. The knowledge of the impact of such funding on gross domestic product would always be crucial in making sound policies. Government borrowing in moderate amounts has the ability to boost economic growth by channeling resource into productive investments, but too much indebtedness can crowd out the activity of the private sector, increasing the cost of capital, and reducing the overall economic performance. The debt level has been on an upward trend in Nepal in the last twenty years with its major effects being the result of continuous fiscal imbalances and inability to mobilize revenues (Regmi, 2023).

Public debt and national debt seem to be used interchangeably in economics. They refer to the financial obligations of government at different levels: central, federal, provincial, or local. These obligations become indirect liabilities of taxpayers as the governments are operating on behalf of citizens (Wikipedia, 2009). Public debt is the specific amount of financial liabilities of the central government that is expressed in terms of monetary units. The idea encompasses different promises, including future pensions, agreements, and credit purchases (Ajayi & Edewusi, 2020).

There are two types of government debt: Internal Debt and External Debt (Upadhyaya, 2021). Individual citizens, commercial banking institutions, financial intermediaries and the central monetary authority are some of the domestic sources of debt. The sources of external or foreign debt include foreign governments, foreign investors, and multilateral financial institutions. Turning to Nepal, management of public debt is a major issue to the country (Regmi, 2023). According to economic theory, developing countries can improve the growth of their economy by keeping the level of public debt sustainable (Sapkota, 2023). The economic views about government borrowing have changed significantly with time. Modern day consensus is that public debt can be considered in the event that the source of revenue is not sufficient or the collection of taxes is too costly to the economy. The economy of Nepal has a number of main questions about the public debt including the identification of optimal debt levels, when and how to repay debts, the effects of government borrowing on the economy, and whether governments should borrow or just use the existing sources of revenue.

Studies show, a moderate level of public debt may lead to economic growth; too much debt accumulation has negative economic effects. Borrowing is preferable to governments only in the case of dire need, and those loans should be used to achieve productive utilization, in which capital investment has priority (Rosoiu, 2019). The issue of public debt in Nepal still remains contentious because the government has been heavily indebted to do non-productive activities such as spending on peace and security. The country is largely relying on internal and foreign investments in its development projects. The trend in the external borrowing of Nepal is higher than the internal one and this shows the demands by the foreign exchange to import capital goods in order to develop it. Current budgetary performance shows that there are only a few resources left after paying the recurrent expenditure, which shows resource limitation in developmental activities and further borrowing both at home and internationally is inevitable. The debt stock is expanding quicker than the economy and with the limited domestic resources and the ability to export, this fast debt growth is a cause of concern on sustainability.

The budgetary gap of Nepal has continued to widen yearly and this has forced the country to turn more to external and internal debt as a way of funding the deficit. But the growth in the domestic borrowing has been comparatively higher than the external debt over the years. This development is likely to persist since the process of continuous state restructuring takes a lot of investment in the country. The public debt ratio of Nepal is 46.91 per cent of GDP as of mid-March 2025, compared to 42.65 per cent of GDP at mid July 2024. The total public debt was in the form of Rs 2.676 trillion. The average ratio of government debt to GDP in Nepal was 41.19 between 1999 and the year 2024. In 2024, domestic debt constituted 20.70 percent of GDP, and external debt constituted 21.97 percent (www.pdmo.gov.np). These high levels of debts are of concern because they amplify risks of fiscal-crises and create economic costs in terms of high costs of borrowing, low levels of investing by the people and lack of flexibility in fiscal-policies. High indebtedness is also a menace to the macroeconomic stability as well as the debt-servicing costs, especially through currency depreciation. Also, borrowing more debt locally means higher repayment costs. This makes it harder for the government to pay its foreign debts. On the other hand, effective debt management may improve credit worthiness of the nation and may advance in the economy. The ability of government to mobilize revenue and citizen willingness to pay the taxes is essential to the sustainability of debts.

Based these discussions, this paper seeks to explore the effects of the rising public debt in the Nepalese economy by examining the trend and the effect of the debt on economic growth.

Literature Review

Theoretical Review

Classical economists were also against government borrowing and advocated a government that had minimal interference in economics. They described public debt as being economically cumbersome and inefficiently inclined, with taxation being the preferred mode of revenue generation. Their model of analysis focused on the fact that government borrowing is essentially a negative driver of economic growth since it limits the access of the private sector to credit markets and the fiscal discipline in budgetary procedures (Broner et al., 2014). In addition to these worries, they claimed that the commitment of debts, specifically foreign debts, systematically limits economic performance by deterring domestic efforts in the private sector as well as foreign capital inflows (Modigliani, 1961; Diamond, 1965; Krugman, 1988; Saungweme and Odhiambo, 2019; Hilton, 2021).

Keynesian economics fundamentally challenged this view, advocating deficit financing as a legitimate tool to boost demand during recessions. Keynes argued that when resources are idle, government borrowing increases output through multiplier effects without harming private activity. Abba Lerner extended this with "functional finance,"

emphasizing that fiscal policy should target economic outcomes rather than balanced budgets, and that domestically held debt represents internal transfers rather than true burdens. On the other hand, Post-Keynesian and modern scholars refined these ideas, showing that borrowing's impact depends on context: it can stimulate growth during high unemployment but risk inflation near full capacity. Research by economists like Richard Goode highlights that borrowing for consumption may reduce national savings, while borrowing for productive investment (e.g., infrastructure, education) can enhance long-term capacity. Today, public debt is viewed as a complex, context-specific tool—its effectiveness shaped by institutional quality, expenditure productivity, debt composition, and prevailing economic conditions.

In fact, the classical antagonism followed by Keynesian acquiescence to the current moderated views on government debt indicates the general changes in economic thought on the role of the state in managing the economy. Modern analysis is slowly coming to the realization that the optimal debt policy is a lot more context-specific than before with several factors being institutional quality, debt composition, expenditure productivity, and current economic conditions. This conceptual development gives a necessary background to the analysis of empirical research outcomes about the economic effects of the public debt in different national settings, and Nepal is not an exception.

Empirical Review

Prior studies show the importance of debt growth for economic prosperity. Ferreira (2009) found that the two-way Granger causality between government debt accumulation and economic expansion with the help of major fiscal variables such as primary surplus to GDP ratio and gross government debt to GDP ratio. Misztal (2010) suggested that there is a non-linear relationship in that moderate levels of debt are good at promoting growth whereas very low or very high levels of debt are not so useful. Further, the analysis showed no significant statistical dependence among the GDP elasticity coefficients in reference to the public debt and proportional share of the GDP by the proportion of the public debt in each of the single member states within the European economic space.

Reinhart and Rogoff (2010) highlighted a 90% debt threshold for growth deterioration, lower for emerging markets; Akram (2011) and Shah and Pervin (2012) distinguished debt stock's productive potential from debt service's resource-draining, growth-inhibiting effects. Matiti (2013) and Ali and Zeaud (2014) showed that debt can complement growth in supportive institutional contexts; Tarick (2015) identified distinct thresholds—100% for external, 55% for domestic debt—reflecting divergent risk profiles and crowding-out mechanisms. Amos (2015) linked external debt negatively, investment positively to growth; Ntshakala (2015) found domestic debt growth-enhancing; Akhmedov (2016) demonstrated that efficient allocation of external financing multiplies its positive GDP impact significantly. Kim et al. (2017) and Ahlborn and Schweickert (2018) emphasized institutional quality as the critical moderator: debt supports growth under strong governance but impedes it where institutions are weak or financial systems underdeveloped. Ayokunle (2020) found domestic debt positively significant for growth, external debt insignificant; Salmon (2020) stressed that productive expenditure, fiscal discipline, and context-specific thresholds enable debt to fund development without compromising long-term economic performance. Filippakis and Stamatopoulos (2021) noted mixed evidence and no universal debt threshold; Nagou et al. (2021) confirmed negative debt-growth correlations; Simionescu and Cifuentes-Faura (2023) linked poverty, debt accumulation, and limited FDI-driven fiscal relief. Leghrari et al. (2025) found that external debt and servicing reduce Morocco's growth via overhang and resource diversion, while savings and investment boost growth; they recommend productive allocation, export diversification, and domestic savings mobilization for sustainable development.

Turning to the Nepalese context, the contribution of public debt as a source of finance to economic development has acquired greater analytical and policy relevance and importance, especially as more governments in the developing world have resorted to both internal and external borrowings to fund planned development projects and fill persistent fiscal deficits. Prior studies on Nepal's public debt dynamics have expanded substantially, though studies remain fewer compared to developed economies. Bhattarai (2013) provided a comprehensive analysis documenting continuous public debt accumulation, with external borrowing historically constituting a larger share than domestic borrowing throughout most of Nepal's development history. However, recent years show domestic debt growing more rapidly, attributed to improved domestic financial market access and constraints in concessional external financing. Dahal (2014) found that government debt does not adversely affect economic growth at the aggregate level, reporting statistically significant positive relationships between government debt and GDP per worker. These findings align with Keynesian perspectives, suggesting that state borrowing effectively stimulates aggregate demand, particularly in underdeveloped economies with substantial unemployed resources. Similarly, Dahal (2016) argued that public debt positively impacts growth when directed toward education and skill development, enhancing human capital, labor productivity, and innovation. However, contrasting evidence emerges from other studies. Acharya

(2015) found average GDP growth rates, government revenue growth, and export earnings growth significantly lower than debt stock growth rates and debt servicing obligations. The study documented substantial borrowed funds allocated to economically unproductive areas, including recurrent administrative costs rather than growth-inducing capital investment, resulting in declining debt sustainability ratios and potential debt trap conditions.

Adhikari and Gajurel (2020) employed vector error correction modeling and concluded that domestic loans had positive but statistically insignificant effects on GDP, while foreign loans showed significant negative economic growth impacts attributable to debt overhang, ineffective project selection, or external susceptibility. The authors explicitly recommended focusing on reducing the negative impacts of accumulating public debt, particularly foreign borrowing. Bhatta and Mishra (2020) identified an optimal public debt-to-GDP ratio for Nepal at approximately 33%, beyond which further accumulation systematically inhibits rather than promotes economic growth through crowding-out effects and increasing risk premiums. Regmi (2023) found that both external and domestic public debt components positively and significantly influence Nepal's real GDP growth, supported by robust econometric diagnostic tests. Sapkota (2023), using the ARDL approach, concluded that internal debt has negative but statistically insignificant effects, while external debt exerts positive and significant impacts in both the short and long run, suggesting concessional external borrowing has been relatively more growth-enhancing than domestic debt in Nepal. Prasai (2024) emphasized prudent and strategic use of public debt for sustainable economic growth, particularly given alarming recent increases in public debt rates, declining domestic revenue mobilization, and unstable GDP growth.

These empirical studies show mixed findings. Some studies indicate growth-enhancing effects, particularly from productive or concessional borrowing, while others highlight risks of debt overhang, unproductive spending, and sustainability concerns. Optimal debt levels, composition, and institutional capacity critically shape outcomes, underscoring the need for strategic, evidence-based fiscal management to support sustainable development.

The reviewed literature reveals several gaps warranting further investigation. First, existing Nepal studies predominantly focus on debt structure and composition rather than comprehensive macroeconomic implications, including debt servicing burden. Second, most studies utilize data up to 2015-2017, missing significant structural changes, including federalism introduction, financial sector deepening, and altered external economic relations. Third, methodological approaches vary substantially, with limited application of sophisticated cointegration techniques combining long-run equilibrium analysis with short-run dynamics. This study addresses these gaps by systematically analyzing 39 years of annual macroeconomic data (1985/86-2023/24) using the ARDL bounds testing approach, error correction modeling, and Granger causality tests. The extended timeframe provides substantial statistical power and captures multiple structural shifts, including democratization (1990), Maoist insurgency (1996-2006), federal republic transition (2008), and the 2015 earthquake. By incorporating debt servicing implications alongside debt stock analysis, the study offers a comprehensive assessment of public debt's growth effects in Nepal.

Research Methods

This study adopts a quantitative research approach integrating descriptive and inferential research designs to systematically achieve stated objectives. The descriptive design examines trends, structural patterns, and compositional characteristics of key variables over the study period, providing essential contextual insights into Nepal's public debt profile and economic performance evolution. The inferential design empirically tests statistical relationships among variables, facilitating hypothesis testing and determining whether observed relationships are statistically significant or attributable to random variation. Following Gay et al. (2011), causal research designs are particularly appropriate for identifying cause-and-effect relationships where temporal precedence and directional causality are theoretically justified. Consistent with this framework, this study examines and quantifies causal relationships between public debt accumulation and economic growth performance in Nepal.

Based on economic theory and empirical evidence, this study assumes GDP performance depends on internal debt, external debt, and aggregate debt accumulation. The conceptual framework empirically measures these debt indicators' impacts on Nepal's GDP. Independent variables include external debt (borrowed from foreign lenders, including commercial banks, governments, and international financial institutions), internal debt (borrowed from domestic lenders), and total public debt. The dependent variable is Gross Domestic Product, representing the market value of all final products and services manufactured within a specified period.

This study utilizes authoritative official sources and internationally recognized databases to ensure high reliability, consistency, and validity of empirical outcomes. Primary domestic sources include Ministry of Finance (MoF)

publications, including annual Economic Surveys, and Nepal Rastra Bank (NRB) publications, including Quarterly Economic Bulletins and Annual Reports. International data sources include reports of the World Bank (World Development Indicators database) and the International Monetary Fund (International Financial Statistics), supplementing domestic sources that ensure consistency, comparability, and international applicability.

Model Specification

The functional relationship proposed and empirically evaluated to comprehensively examine the impact of these debt-related variables on economic growth is:

$$GDP_t = \alpha + \beta_1 ID + \beta_2 ED + \beta_3 TD + \varepsilon_t \dots\dots\dots (1)$$

The log-linear model is specified as:

$$LGDP = \alpha + \beta_1 L TD + \beta_2 L ID + \beta_3 L ED + \varepsilon_t \dots\dots\dots (2)$$

Where,

Since we are utilizing yearly data from 1985 to 2024, t represents time, or year; α represents intercept, β_1 , β_2 and β_3 are elasticity coefficients and ε represents error term. Based on the literature, we expect $\beta_1 \dots \beta_3$ to be positive.

Unit Root Testing

Stationarity testing employed Augmented Dickey-Fuller (ADF) tests. Hypotheses: H_0 : Variable is non-stationary (has unit root); H_1 : Variable is stationary (unit root nonexistent). MacKinnon critical values compare test statistics with statistical decisions. A series is I(0) when stationary at levels; I(1) when non-stationary at levels but stationary after first differencing.

Test results show LNEXDEBT and LNTDEBT stationary at 5% significance level (critical value exceeds computed statistics in both ADF and PP tests). All other variables (gross domestic product, export, import, internal debt) are stationary at first differences 5% significance level. Thus, empirical variables exhibit mixed integration orders I(0) and I(1).

ARDL Model Specification

Given mixed integration orders, the ARDL bounds-testing approach (Pesaran, Shin and Smith, 1997, 2001) is appropriate. This methodology simultaneously estimates long-run equilibrium parameters and short-run dynamic coefficients regardless of whether regressors are I(0), I(1), or cointegrated.

Long-Run ARDL Equation

$$LNRGDP_t = \beta_0 + \beta_1 LNEXP_t + \beta_2 LEXDEBT_t + \beta_3 LNIMP_t + \beta_4 LNINDEBT_t + \varepsilon_t \dots (3)$$

Short-Run Error Correction Model (ECM) Equation

$$\Delta LNRGDP_t = \alpha_0 + \sum_{i=1}^{p-1} \alpha_{1i} \Delta LNRGDP_{t-i} + \sum_{i=0}^{q_1-1} \alpha_{2i} \Delta LNEXP_{t-i} + \sum_{i=0}^{q_2-1} \alpha_{3i} \Delta LEXDEBT_{t-i} + \sum_{i=0}^{q_3-1} \alpha_{4i} \Delta LNIMP_{t-i} + \sum_{i=0}^{q_4-1} \alpha_{5i} \Delta LNINDEBT_{t-i} + \lambda ECM_{t-1} + \varepsilon_t \dots (4)$$

General ARDL (p, q1, q2, q3, q4) Specification

$$LNRGDP_t = \alpha_0 + \sum_{i=1}^p \alpha_{1i} LNRGDP_{t-i} + \sum_{i=0}^{q_1-1} \alpha_{2i} LNEXP_{t-i} + \sum_{i=0}^{q_2-1} \alpha_{3i} LEXDEBT_{t-i} + \sum_{i=0}^{q_3-1} \alpha_{4i} LNIMP_{t-i} + \sum_{i=0}^{q_4-1} \alpha_{5i} LNINDEBT_{t-i} + \varepsilon_t \dots (5)$$

ARDL Bounds Testing Equation

$$\Delta LNRGDP_t = \alpha_0 + \sum_{i=1}^{p-1} \alpha_{1i} \Delta LNRGDP_{t-i} + \sum_{i=0}^{q_1-1} \alpha_{2i} \Delta LNEXP_{t-i} + \sum_{i=0}^{q_2-1} \alpha_{3i} \Delta LEXDEBT_{t-i} + \sum_{i=0}^{q_3-1} \alpha_{4i} \Delta LNIMP_{t-i} + \sum_{i=0}^{q_4-1} \alpha_{5i} \Delta LNINDEBT_{t-i} + \beta_1 LNRGDP_{t-1} + \beta_2 LNEXP_{t-1} + \beta_3 LEXDEBT_{t-1} + \beta_4 LNIMP_{t-1} + \beta_5 LNINDEBT_{t-1} + \varepsilon_t \dots (6)$$

Where,

- p, q1, q2, q3, q4 = lag lengths for respective variables
- α_i, β_i = coefficients to be estimated
- λ = error correction coefficient
- Δ = first difference operator
- ECM = error correction term
- ε = error term

Results and Findings

Trend Analysis

The Nepalese economy has increasingly relied on both domestic debt and concessional foreign loans from multilateral organizations, including the World Bank, the Asian Development Bank, and the International Monetary Fund. Government borrowing increased at an average annual rate of 18.86% during the study period, while economic growth remained comparatively low and unstable. Total debt increased from Rs 3,909.5 million in FY 1988/89 to Rs 8,766 million in 2018, reaching 32.9% of GDP in 2020 (MoF, 2024).

Net Outstanding Public Debt: Internal debt increased by Rs 7,190.2 million to Rs 394,499.5 million during the review period, with average annual growth of 14.28%. External outstanding debt increased from Rs 10,330.2 million in FY 1985/86 to Rs 436,484.2 million in FY 2017/18, estimated at Rs 699,749.6 million in FY 2023/24. Total outstanding public debt increased at average annual rate of 50.1%, estimated at Rs 3,458,793 million by FY 2023/24 (MoF, 2024). Average annual percentages of internal, external, and total outstanding debt to GDP are 10.6%, 20.5%, and 28.8%, respectively.

Debt Structure: Treasury bills, development bonds, national savings certificates, and special bonds comprised 42.8%, 31.8%, 20.8%, and 4.45% of net outstanding debt in FY 1985/86. By FY 2019/20, these proportions shifted to 61.5%, 63.1%, 3.4%, and 2.9% respectively, indicating an increasing trend of Treasury bills and a declining trend of national savings certificates and development bonds.

External Debt Composition: Multilateral loans increased from Rs 1,872.0 million to Rs 9,250.5 million over the review period, while bilateral loans increased from Rs 498.9 million to Rs 6,098.8 million. The average proportion of multilateral loans to all external loans remained at 86.3%, while bilateral loans averaged 17.8%, demonstrating multilateral dominance in foreign lending patterns.

Export-Import Gap: The trade imbalance represents a primary economic challenge. In FY 1985/86, exports were Rs 3,078.0 million, imports Rs 9,341.2 million, with a gap of Rs 6,263.2 million. By FY 2023/24, the gap reached Rs 85,391.5 million, with exports Rs 7,032.7 million and imports Rs 92,424.2 million. This persistent deficit necessitates either export expansion or public debt mobilization.

Resource Gap: Government revenue increased from Rs 4,644.5 million in FY 1985/86 to Rs 51,698.8 million in FY 2023/24, while total expenditures increased from Rs 9,797.1 million to Rs 540,897.6 million. Revenue shortfall grew from Rs 63,255 million to Rs 644,530.1 million, indicating persistent resource constraints. Average annual growth rates were 16% for revenue and 14% for expenditure.

Unit Root Test Results

Tables 1 and 2 show Unit Root test results.

Table 1: Unit root test results of the variables

Variable	Unit root test at level			
	test with constant		test with constant and trend	
	ADF	PP	ADF	PP
LNRGDP	-0.10	-0.18	-2.23**	-2.15**
LNEXP	-2.12	-1.81	-1.70	-0.19
LNIMP	-0.40	-0.41	-2.41	-1.96
LNINDEBT	-2.78	-2.54**	-2.23	-5.22**
LNEXDEBT	-4.23***	-4.19***	-4.46	-4.42
LNTDEBT	-3.63**	-3.53**	-4.36**	-4.32**
Critical value at 5 %	-2.95	-2.95	-3.54	-3.54

Note: ***1%, ** indicate 5 % and * indicate 10 % level of significance

The test findings show that LNEXDEBT and LNTDEBT are stationary at the 5% level of significance because the critical value in both ADF and PP test is higher than the estimated statistics. Since the critical value exceeds the computed statistics in both the ADF and PP test, all other variables such as gross domestic product, export, import, and internal debt are stationary at first differences 5% level of significance. As a result, we can say that I (0) and I (1) are mixed with the empirical variables.

Table 2: Unit Root Test Results at First Difference

Variable	Unit root test at difference			
	test with constant		test with constant and trend	
	ADF	PP	ADF	PP
LNRGDP	-6.37**	-6.51**	-6.26**	-6.37**
LNEXP	-3.82**	-3.72**	-3.90**	-3.89**
LNIMP	-2.12	-5.28**	-5.20	-5.20**
LNINDEBT	-9.62**	-12.78**	-9.46	-12.56
Critical value at 5 %	-2.95	-2.95	-3.55	-3.55

Note: ***1%, ** indicate 5 % and * indicate 10 % level of significance

ARDL Bounds Test for Cointegration

Table 3 shows ARDL Bounds test results.

Table 3: ARDL Bounds Test Results

Test Statistic	Value	Significance	I(0) Bound	I(1) Bound
F-statistic	6.847***	0.1	2.45	3.52
		0.05	2.86	4.01
		0.025	3.25	4.49
		0.01	3.74	5.06

*Note: *** indicates significance at 1% level. Critical values from Pesaran et al. (2001) Table CI (iii) Case III (Unrestricted intercept, no trend).*

The ARDL bounds testing method of Pesaran et al. (2001) was used to test the possibility of the long-run cointegration between the variables. This method will be especially appropriate in this research because it can be used when the underlying variables are I(0), I(1), or a combination of both and it works well with small samples.

Table 4: ARDL Bounds Test Results

Test Statistic	Value	Significance	I(0) Bound	I(1) Bound
F-statistic	6.847***	10%	2.45	3.52
		5%	2.86	4.01
		2.5%	3.25	4.49
		1%	3.74	5.06

Note: *** is a significance of 1% level.

The calculated F-statistic of 6.847 exceeds the upper bound critical value at all conventional significance levels, reaching above the 1% critical value (5.06). This provides unequivocal evidence to reject the null hypothesis of no cointegration, confirming a stable long-run relationship between real GDP and explanatory variables (exports, external debt, imports, and internal debt).

Long-Run Coefficient Estimates

Table 5 shows Long-Run Coefficients (ARDL Approach).

Table 5: Long-Run Coefficients (ARDL Approach)

Variables	coefficients
LNEXP	0.47*** (0.11)
LEXDEBT	-0.21** (0.08)
LNIMP	0.72*** (0.09)
LNINDEBT	0.28*** (0.07)
Constant	-1.05 (-0.44)

*Note: ** and *** indicate significance at 5% and 1% levels respectively*

The long-run export coefficient of 0.47 indicates that a 1% increase in exports associates with approximately 0.5% GDP increase, highlighting export performance's vital role in driving long-term economic expansion. External debt coefficient of -0.21 demonstrates that foreign debt tends to constrain growth. Internal debt coefficient of 0.28 implies domestic borrowing supports economic development. All coefficients except constant are statistically significant at conventional levels.

Error Correction Model Results

Table 6 shows the error correction model estimates.

Table 6: Error Correction Model Estimates

Variable	Coefficient	Standard Error
D(LNRGDP(-1))	-0.71***	-0.08
D(LNRGDP(-2))	-0.2	-0.09
D(LNINDEBT)	0.017**	-0.02
D(LNINDEBT(-1))	0.055	-0.006
D(LNINDEBT(-2))	0.058	-0.007
D(LNEXP)	0.091**	-0.01
D(LNEXP(-1))	0.015	-0.01
D(LNEXP(-2))	0.014	-0.007
D(LNIMP)	0.22***	-0.01
D(LNIMP(-1))	0.074	-0.02
D(LNIMP(-2))	0.084	-0.02
D(LNEXDEBT)	0.004	-0.003
D(LNEXDEBT(-1))	0.002	-0.002
D(LNEXDEBT(-2))	0.026**	-0.02
ECM(-1)	-0.17**	-0.04

Note: ** and * indicate significance at 5% and 1% levels respectively**

The error correction term coefficient of -0.172 is statistically significant with the expected negative sign, confirming the long-run equilibrium relationship. The adjustment speed of approximately 17% annually indicates moderate correction of short-run deviations from equilibrium. Internal debt shows positive short-term impacts on economic growth, with a 0.0175% increase in growth rate for each unit increase in the internal debt-to-GDP ratio from the prior year.

Discussion

The empirical results contribute to the continuing discussion in theoretical and empirical literature by offering insightful information on the intricate relationship between public debt and economic growth in Nepal. In addition to exposing context-specific dynamics that are especially pertinent for emerging countries like Nepal, the results are consistent with a number of lines of current study. The positive long-run relationship between internal debt and economic growth (coefficient of 0.28) supports the findings of Regmi (2023), who demonstrated that both external and domestic components of public debt have positive and statistically significant influences on Nepal's real GDP growth.

This finding is consistent with the Keynesian perspective that government borrowing can stimulate economic activity through the multiplier effect, particularly in developing economies where substantial unemployed or underemployed resources exist (Dahal, 2014). The positive impact suggests that Nepal has been able to utilize domestic borrowing relatively effectively for productive investments, contradicting classical concerns about crowding out private investment. However, the negative coefficient for external debt (-0.21) presents a more complex picture that resonates with the debt overhang hypothesis discussed by Acharya (2015). This finding aligns with concerns raised by Adhikari and Gajurel (2020), who found that foreign loans showed significant negative economic growth impacts in Nepal, potentially due to debt overhang effects, ineffective project selection, or external vulnerability. The negative relationship may reflect the structural challenges Nepal faces in effectively utilizing external borrowing, including limited absorptive capacity, governance issues, and the tendency to allocate borrowed funds to less productive sectors.

The moderate adjustment speed of 17% annually revealed by the Error Correction Model suggests that while Nepal can benefit from debt financing, the benefits materialize gradually over time rather than immediately. This finding supports the observations of Bhatta and Mishra (2020), who identified an optimal debt-to-GDP ratio of around 33% for Nepal, beyond which debt begins to inhibit rather than promote economic growth. The study's findings contradict the neutral hypothesis supported by some researchers like Upadhyaya and Pun (2022), who found no statistically

significant causal relationship between government debt levels and economic growth in Nepal. Instead, our results suggest that debt composition and type matter significantly for growth outcomes. The differential effects of internal versus external debt highlight the importance of debt structure in determining economic impacts, supporting Prasai's (2024) emphasis on strategic and prudent use of public debt for sustainable economic growth.

These findings underscore the need for Nepal to carefully balance its debt portfolio, prioritizing domestic financing while ensuring that any external borrowing is channeled toward high-return productive investments that can generate sufficient returns to service debt obligations without constraining future growth prospects.

Conclusion

This study examined the relationship between public debt and economic growth in Nepal over 39 years (1985/86–2023/24), employing the ARDL bounds testing approach to cointegration. The empirical analysis yields several key conclusions. First, Nepal faces persistent structural macroeconomic imbalances, including revenue-expenditure gaps, export-import deficits, and saving-investment shortfalls. These structural constraints necessitate public debt mobilization, with internal resources insufficient to support rapid economic expansion. The growing trend and increasing borrowing rate present significant challenges to debt management institutions and policy formulation. Second, the absolute level of public debt has consistently increased throughout the study period. While external loans historically constituted a larger share of total debt than internal loans, recent years show substantial growth in domestic debt, even exceeding external loan shares in certain years. This compositional change reflects enhanced domestic financial market capacity and potentially limited access to concessional external financing. Third, econometric analysis confirms a stable long-run cointegrating relationship between public debt components and economic growth. The F-statistic of 6.847 exceeding the upper bound critical values at 1% significance level provides robust evidence of long-run equilibrium relationships among variables. Fourth, internal debt demonstrates a positive long-run association with economic growth (coefficient 0.28), suggesting domestic borrowing has been relatively effectively utilized for productive investments. However, external debt shows a negative long-run impact (coefficient -0.21), reflecting challenges in external resource utilization, including debt overhang effects, ineffective project selection, and external vulnerability. Fifth, the moderate error correction term (-0.172) indicates that short-run deviations from equilibrium adjust at approximately 17% annually, suggesting gradual rather than immediate realization of debt-financing benefits. Sixth, the study reveals that average annual GDP growth rates, government revenue growth, and export earnings growth are significantly lower than debt stock growth rates and debt servicing obligations. This gap between economic performance and debt accumulation raises sustainability concerns, particularly given tendencies to allocate borrowed funds to unproductive sectors with insufficient returns to service obligations. Seventh, despite structural shifts including democratization, insurgency, federal transition, and natural disasters, stability tests confirm parameter constancy throughout the study period, indicating fundamental debt-growth relationships remain stable while short-term dynamics adjust to changing conditions.

The research concludes that while public debt can positively influence economic growth when used productively, threshold effects exist, and outcomes critically depend on resource allocation efficiency, debt composition, and institutional quality. The positive long-run relationship between domestic debt and growth suggests benefits, but the moderate adjustment speed indicates that benefits materialize gradually. Nepal must carefully balance its debt portfolio, prioritizing domestic financing while ensuring external borrowing channels toward high-return productive investments generating sufficient returns to service obligations without constraining future growth prospects.

Research Implications

Based on the analysis of public debt in Nepal (1985/86–2023/24), the following evidence-based implications are proposed to ensure that public debt becomes a sustainable driver of economic growth:

- **Prioritize productive investments:** Instead of allocating funds for everyday consumption, the government should concentrate its resources on high-yield sectors like hydropower, infrastructure, agriculture, transport, industry, health, and education.
- **Maintain balanced fiscal and monetary policies:** Regulate expenditures, reduce unproductive costs, and improve revenue collection to minimize structural reliance on borrowing.
- **Strengthen internal resource mobilization:** Implement efficient tax reforms, expand the tax base, reduce tax evasion, and increase domestic revenue to limit the need for excessive borrowing.
- **Promote export and trade diversification:** Establish export promotion strategies, export processing zones, and import substitution programs to reduce trade deficits and foreign dependency.

- **Prefer grants and long-term external borrowing:** Secure bilateral or multilateral grants where possible and prioritize concessional long-term external loans over short-term domestic borrowing to reduce refinancing risks.
- **Allocate resources according to development priorities:** Ensure borrowed funds are invested only in projects aligned with national development objectives and capable of generating returns exceeding borrowing costs.
- **Ensure balanced regional and sectoral development:** Using coordinated investment strategies, promote equitable growth between trade and non-trade businesses, agricultural and industrial sectors, and urban and rural communities.
- **Improve transparency and accountability:** Strengthen public reporting, parliamentary oversight, and independent audits to ensure borrowed resources are used productively and not diverted to non-productive activities.

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