

**Government Expenditure and Economic Growth Nexus in Nepal:
An Empirical Analysis from 1975 to 2023**

A Research Report

**Submitted To
Center for Research and Development
Research and Consulting Service Department
Nepal Administrative Staff College
Jawalakhel, Lalitpur**

**Submitted by
Anil Kumar Gupta**

June 2025

Copyright © Nepal Administrative Staff College, 2025

Declaration:

This study was conducted with financial support from the Nepal Administrative Staff College. Any views expressed in this report are of the authors and do not interpret as representing the views of the Nepal Administrative Staff College.

Detailed Information is Available from:

Centre for Research and Development

Research and Consulting Services Department

Nepal Administrative Staff College

URL: www.nasc.org.np

Phone: +977-1-5522160, 5523517, 552002, Fax: +977-1-5524906

Email: rcsd@nasc.org.np

Recommended Citation:

Gupta, A. K. (2025). Government Expenditure and Economic Growth Nexus in Nepal: An Empirical Analysis from 1975 to 2023. Lalitpur: Nepal Administrative Staff College.

Acknowledgements

I am deeply grateful to all those who have supported and contributed their invaluable time and expertise towards the successful completion of this report, entitled “Government Expenditure and Economic Growth Nexus in Nepal: An Empirical Analysis from 1975 to 2023.” This work would not have been possible without the collective efforts, encouragement, and guidance of numerous individuals and institutions.

First and foremost, I extend my heartfelt gratitude to Dr. Rajan Khanal, Executive Director, and Mr. Bishnu Prasad Lamsal, Deputy Executive Director, for their unwavering support, motivation, and insightful advice throughout the research process. Their mentorship and vision were instrumental in navigating the complexities of this study and ensuring its academic rigor.

I am profoundly indebted to the Research and Consulting Services Department and the Research Committee for their continuous guidance, constructive feedback, and thought-provoking suggestions. Their meticulous attention to detail and commitment to excellence significantly shaped the quality and depth of this report.

Special thanks are due to the World Bank for granting access to their official websites and comprehensive datasets. The availability of such reliable and extensive resources was pivotal in conducting a robust empirical analysis and enriching the findings of this research.

Finally, I would like to express my sincere appreciation to my friends and seniors, whose encouragement, enthusiasm, and moral support kept me motivated during challenging times. Their belief in my abilities and constant cheerfulness provided an invaluable source of strength throughout this journey.

To everyone who has contributed directly or indirectly to this endeavor, I offer my deepest thanks. Your support has been invaluable, and I am truly grateful for your role in making this report a reality.

Thank you all.

Abstract

The study aimed to examine the long and short run effects of government expenditure on economic growth in Nepal from 1975 to 2023, using the autoregressive distributive lag (ARDL) bounds testing approach and the error correction model (ECM). The results of the bounds test and ECM indicate the presence of co-integration among the variables included in the model. The findings show that government expenditure and capital investment have a significant positive impact on economic growth in Nepal in the long run, although their short-run impacts are insignificant. However, trade has a significant positive impact on economic growth in the short run but does not contribute significantly in the long run. Inflation has a weak positive effect on long-term growth but does not influence short-term growth. This study provides evidence of the long and short run dynamics of the relationship between government expenditure and economic growth in Nepal, informing policy decisions to enhance public spending efficiency, trade policies, and investment strategies for sustainable economic development.

JEL: E62, C32, O53, F43

Keywords: Government expenditure, economic growth, capital investment, trade, inflation, Nepal, ARDL

List of Contents

Acknowledgements.....	iii
Abstract	iv
List of Contents.....	v
List of Tables	vii
List of Figures	viii
Abbreviation	ix
Chapter 1: Introduction	1
1.1 Development Insights at NASC	1
1.2 Introduction	1
1.3 Purpose and Research Questions.....	3
1.4 Research Hypotheses.....	3
1.5 Rationale/Relevance of the Study	4
1.6 Scope of the Study.....	4
1.7 Organization of the Proposal.....	5
Chapter-2: Literature Review	6
2.1 Economic Growth in Nepal.....	6
2.2 Government Expenditure in Nepal.....	7
2.3 Capital Investment in Nepal.....	9
2.4 Trade in Nepal	10
2.5 Inflation in Nepal	12
2.6 Theoretical Debate: Government Expenditure and Economic Growth	14
2.7 Empirical Literature Review	16
2.7.1 International Context	16
2.7.2 Nepali Context.....	18
2.8 Research Gap.....	20
2.9 Conceptual Framework	21
Chapter-3: Study Methodology.....	24
3. Methodology	24
3.1 Data and Variables.....	24

3.2 Model Specification	25
3.3 Estimation Technique.....	26
3.3.1 Stationarity Test.....	26
3.3.2 ARDL Model.....	27
3.3.3 ARDL Bounds Testing Approach	29
3.3.4 Short-Run and Long-Run Estimates.....	29
3.3.5 Diagnostic Test.....	30
3.3.7 Stability Test.....	30
Chapter-4: Results and Discussion	32
4.1 Unit Root Test.....	32
4.2 Lag Length Selection	33
4.3 Bounds Test of Cointegration	34
4.4 Long-run and Short-run Coefficients	34
4.5 Error Correction Model.....	35
4.7 Diagnostic Test Results.....	37
4.8 Stability Analysis	38
4.9 Discussion	39
Chapter-5: Conclusion and implications.....	42
5.1 Conclusion.....	42
5.2 Practical Implications.....	42
References.....	44

List of Tables

Table 4.1: PP Unit Root Test	32
Table 4.2: ADF Unit Root Test.....	33
Table 4.3: he Optimal Lag Length.....	34
Table 4.4: F-Statistic of Cointegration Relationship	34
Table 4.5: Estimated Long Run Coefficient	35
Table 4.6: ARDL Short-run and ECM Results.....	37
Table 4.7: Diagnostic Test of ARDL Model	38

List of Figures

Figure 1: GDP growth (annual %) in Nepal	7
Figure 2: General Government Final Consumption Expenditure (% of GDP) in Nepal	9
Figure 3: Gross Fixed Capital Formation ((% of GDP) in Nepal	10
Figure 4: Trade (% of GDP) in Nepal.....	12
Figure 5: Inflation (annual %) in Nepal	14
Figure 6: Conceptual Framework of Study.....	21
Figure 7: CUSUM plots	38
Figure 8: CUSUM of squares plots.....	38

Abbreviation

ACMD	Advanced Course on Management and Development
ADF	Augmented Dickeye Fuller
ARDL	Autoregressive Distributed Lag
CI	Capital Investment
CUSUM	Cumulative Sum of Recursive Residuals
CUSUMSQ	Cumulative Sum of Squares of Recursive Residuals
ECM	Error Correction Model
GDPG	Economic Growth
GEXP	Government Expenditure
GFCF	Gross Fixed Capital Formation
INF	Inflation
NASC	Nepal Administrative Staff College
PCMD	Professional Course on management and Development
PP	Phillipse Perron
WDI	World Development Indicator

Chapter 1

Introduction

1.1 Development Insights at NASC

The research on government expenditure and economic growth in Nepal is highly relevant to my role at the Nepal Administrative Staff College (NASC) for several compelling reasons. As a faculty of Development Studies, I am actively involved in shaping the knowledge and skills of public administrators who play a vital role in the country's governance and development. This research directly supports my work by providing critical insights into how government expenditure impacts economic growth in Nepal.

This research aligns closely with my responsibilities at NASC, where I focus on equipping public administrators with the knowledge and tools needed for effective governance and economic development. Understanding the relationship between government expenditure and economic growth is essential for developing and implementing sound economic policies. Integrating the findings of this research into the training programs I lead, I can ensure that participants gain a deep understanding of how government spending influences Nepal's economic growth.

The insights from this research will enhance the content of the training programs I facilitate, particularly the Advanced Course on Management and Development (ACMD) and the Professional Course on Management and Development (PCMD). These courses, which include sessions on developmental perspectives, will benefit greatly from empirical evidence on the connection between government spending and economic growth. This evidence allows me to present participants with real-world data and engage them in discussions about the current economic challenges facing Nepal. By helping them understand how government expenditure affects economic growth, I can better prepare them to make informed decisions in their roles.

1.2 Introduction

The relationship between government expenditure and economic growth has long been a focal point of economic research and policy discussions, both globally and in Nepal. This topic remains important because of its significant impact on economic planning and development (Ibrahim, 2019). Over the years, scholars have intensely debated whether government spending

fosters or hinders economic growth, yet no consensus has been reached. On one hand, studies by Gurdal et al. (2021), Shkodra et al. (2022), and Kirikkaleli and Ozbeser (2022) argue that increased government expenditure positively impacts economic growth by stimulating demand, creating jobs, and investing in critical infrastructure. On the other hand, research by Phiri (2019), Onifade et al. (2020), and Hlongwane et al. (2021) suggests that excessive government spending can lead to inefficiencies, crowd out private investment, and ultimately hamper economic progress.

Despite these differing perspectives, there is widespread agreement among economists that public sector expenditure plays a vital role in shaping the economic landscape (Adu et al., 2013). Government expenditure, which encompasses revenues generated from taxes and other sources, is instrumental in maintaining economic stability and promoting growth (Mallick et al., 2016). Such expenditures are directed towards various sectors including infrastructure development, capital investments, social welfare programs, and public services, all of which are essential for a nation's economic and social well-being (Antwi et al., 2013). The role of government expenditure is critical in addressing key economic challenges such as unemployment, inflation, exchange rate fluctuations, and income inequality. Effective public expenditure policies can drive economic growth by improving living standards, expanding access to essential services, and fostering human capital development.

In the context of Nepal, the relationship between government expenditure and economic growth presents a complex and nuanced picture. Studies by Shah (2020) and Rana (2021) have identified a significant long-run relationship between government expenditure and economic growth, supporting the Keynesian view. However, these studies also highlight that the growth rate of GDP has not corresponded proportionately to the rising public expenditure, indicating inefficiencies in fund allocation and utilization. Research by Dhungel (2022) and Paudel (2023) underscores the importance of strategic allocation across sectors like education, health, and agriculture for sustainable economic development. Giri (2021) adds further complexity by showing positive impacts of agriculture expenditure on GDP growth, but unexpectedly negative associations with education expenditure. Political instability and governance issues are frequently cited as significant obstacles to the effective impact of public expenditure on economic growth (Shah, 2020; Rana, 2021; Giri, 2021). The need for coordinated expenditure policies is emphasized by Rasaily and Paudel (2019) to ensure that public spending effectively

stimulates economic growth. Interestingly, some studies challenge the validity of the Keynesian hypothesis in Nepal. Gaire (2014) finds no causality between government expenditure and economic growth, and Regmi (2007) reports the negative effects of fiscal policy variables on economic growth.

In light of this, this study examined the intricate relationship between government expenditure and economic growth in Nepal from 1975 to 2023, utilizing the Autoregressive Distributed Lag (ARDL) model. With control variables like capital investment, trade, and inflation, the analysis offers a comprehensive understanding of how public spending influences the Nepalese economy.

1.3 Purpose and Research Questions

The purpose of this study was to examine the long- and short-run effects of government expenditure on economic growth in Nepal, utilizing time series data from 1975 to 2023. It also aimed to explore the intricate dynamics between government expenditure and economic growth, considering capital investment, trade, and inflation as control variables. Specifically, the research sought to answer the following questions:

- What is the historical trend of government expenditure and economic growth in Nepal from 1975 to 2023?
- To what extent does government expenditure influence economic growth in Nepal, both in the short and long run?
- How do capital investment, trade, and inflation interact with government expenditure to impact economic growth in Nepal?

1.4 Research Hypotheses

This section presents the research hypotheses formulated to examine the effects of government expenditure on economic growth in Nepal, drawing upon insights from previous studies (see literature review section).

- H₁: Government expenditure is positively associated with economic growth in Nepal, both in the long and short run.
- H₂: Capital investment is positively associated with economic growth in Nepal, both in the long and short run.

- H₃: Trade (exports and imports) is positively associated with economic growth in Nepal, both in the long and short run.
- H₄: Inflation is negatively associated with economic growth in Nepal, both in the long and short run.

1.5 Rationale/Relevance of the Study

Government expenditure and economic growth are crucial aspects of a nation's development and prosperity. Understanding the relationship between these variables is vital for effective policymaking in Nepal. Like many developing nations, Nepal faces challenges in balancing government spending with the need for economic growth. The period from 1975 to 2023 encompasses significant political, social, and economic changes, making it a rich timeframe for examining how government policies and expenditures have impacted the country's economic development. By employing the ARDL model, this study provides a nuanced understanding of both the short-run and long-run dynamics between government expenditure and economic growth. The empirical evidence generated from this study will be valuable for policymakers, economists, and development planners in Nepal. It will assist in guiding evidence-based decisions and optimizing government expenditure to foster sustainable economic growth. Moreover, the study contributes to academic discussions by filling existing knowledge gaps, stimulating policy debates, and offering insights relevant not only to Nepal but also to other countries with similar economic contexts.

The findings will be directly applicable to the training sessions on development perspectives, which are central topics of the ACMD and the PCMD conducted at the NASC.

1.6 Scope of the Study

This study examined the relationship between government expenditure and economic growth in Nepal, covering the period from 1975 to 2023. The primary focus was on how government expenditure influenced economic growth, with particular emphasis on its short-run and long-run effects. To provide a comprehensive analysis, the study incorporated capital investment, trade, and inflation as control variables.

1.7 Organization of the Proposal

The proposal is organized into five main chapters. The first chapter, Introduction, sets the stage for the research by presenting its relevance to NASC, along with the background, purpose, and research questions. It also outlines the research hypotheses, discusses the rationale and significance of the study, and defines its scope. The chapter concludes with an overview of the study's organization. The second chapter, Literature Review, provides a comprehensive review of existing research on government expenditure and economic growth, with a particular focus on studies conducted in developing countries like Nepal. It also identifies the research gap, examines relevant theories, and presents the conceptual framework guiding this study. The third chapter, Methodology, describes the data, study variables, model specification, and study plan. The fourth chapter, Results and Discussion, presents the findings of the study and interprets their implications. Finally, the fifth chapter, Conclusion and Practical Implications summarizes the key findings and discusses their relevance for policy and practice.

Chapter-2

Literature Review

2.1 Economic Growth in Nepal

Figure 1 shows Nepal's GDP growth from 1975 to 2023, which reveals a pattern of significant fluctuations. This reflects the country's vulnerability to both domestic and international factors. From 1975 to 1989, the economy experienced major ups and downs, with growth rates ranging from modest increases to sharp declines. The late 1970s and early 1980s were particularly unstable, with a contraction of -2.32% in 1980. However, the 1980s also saw some of the highest growth rates, including 8.34% in 1981 and 9.68% in 1984. These dramatic shifts suggest that the economy was influenced by a mix of internal factors, such as political instability, and external economic conditions.

From 1990 to 2000, the economy experienced more stable but still fluctuating growth rates. The early 1990s saw a moderate upward trend, with growth peaking at 8.22% in 1994. However, the latter half of the decade did not maintain this momentum, though growth remained positive, averaging around 5%. This period reflects Nepal's efforts to stabilize its economy amidst ongoing political changes and regional developments.

The early 21st century, from 2001 to 2010, saw slower growth, especially in the early 2000s, with the lowest point in 2002 at just 0.12%. This slowdown was due to the impact of the Maoist insurgency and global economic uncertainties. However, by the late 2000s, the economy began to recover, reaching a growth rate of 6.10% in 2008, showing resilience during recovery efforts.

From 2011 to 2023, the GDP growth data shows both recovery and new challenges. Between 2011 and 2015, the growth rate was steady at around 4-5%, but the devastating earthquake in 2015 led to a significant drop in growth to 0.43% in 2016. The economy rebounded strongly in 2017 with a growth rate of 8.98%, but this recovery was short-lived as the COVID-19 pandemic caused a contraction of -2.37% in 2020. The post-pandemic years of 2021 and 2022 saw modest recovery, but growth slowed again in 2023 to 1.95%, indicating ongoing economic challenges (World Bank, 2023).

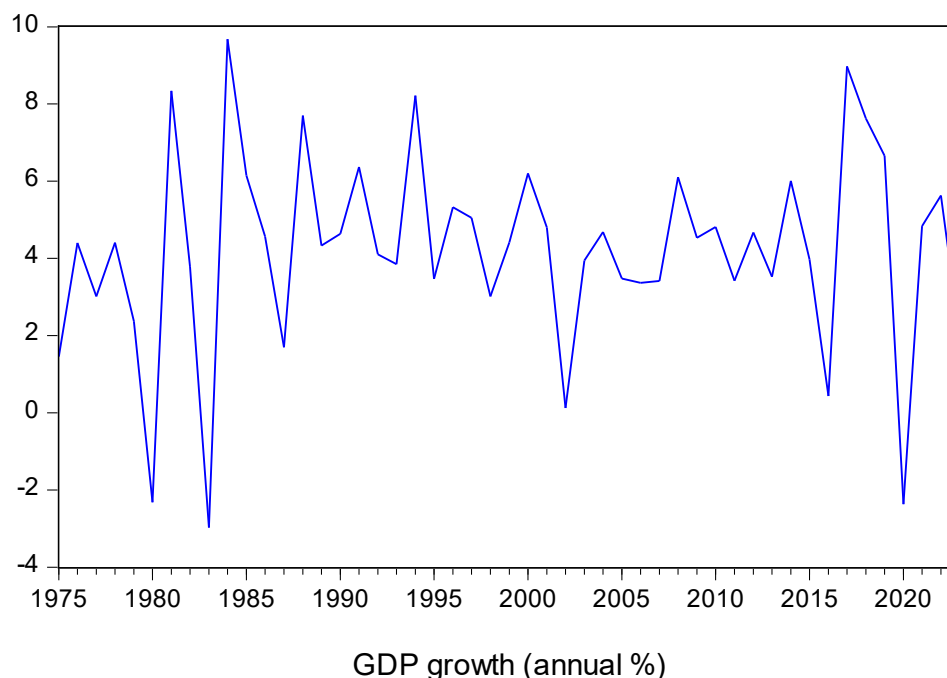


Figure 1: GDP growth (annual %) in Nepal
Source: World Development Indicator, 2023

2.2 Government Expenditure in Nepal

Figure 2 shows Nepal's government expenditure as a percentage of GDP from 1975 to 2023. This data provides a clear view of public sector spending trends over nearly five decades. It shows periods of both increased governments spending relative to GDP and phases of restraint, indicating changes in fiscal policy influenced by economic conditions, political shifts, and broader development goals.

From 1975 to 1980, government expenditure as a percentage of GDP remained relatively stable, fluctuating around 7.5%, with a notable increase to 8.50% in 1979. This period likely reflects cautious fiscal management, with the government maintaining steady spending levels amidst the economic conditions of the time. However, in 1980, there was a sharp decrease to 6.70%, possibly due to economic constraints or efforts to reduce public spending in response to fiscal pressures.

The early to mid-1980s saw a significant increase in government expenditure, peaking at 10.12% of GDP in 1983. This rise may be linked to increased public investment in infrastructure, social services, or efforts to boost economic growth. However, spending gradually decreased to 8.97%

by 1988, possibly reflecting fiscal consolidation or adjustments due to changing economic priorities.

From the late 1980s to the early 1990s, expenditure levels fluctuated, with a peak of 10.02% in 1989, followed by a drop to 8.66% in 1990. These fluctuations suggest that government spending was responsive to immediate economic or political needs, such as addressing economic downturns or increasing public services during election years. Throughout the 1990s, government expenditure remained fairly stable, around 8-9% of GDP, reflecting a period of relative fiscal stability and consistent public sector investment.

In the early 2000s, this stability continued, with expenditure levels generally around 8-9%. However, from 2008 onwards, there was a notable upward trend, with spending reaching 10.78% of GDP in 2009. This increase aligns with the global financial crisis, suggesting that the government adopted expansionary fiscal policies to counteract the economic slowdown and support domestic demand through increased public spending.

After peaking in 2009, government expenditure as a percentage of GDP gradually decreased, stabilizing around 8-9% in the following years. This trend reflects a period of fiscal adjustment and consolidation, possibly as the government aimed to reduce deficits and manage public debt. However, in 2020, there was another increase to 9.07%, likely in response to the COVID-19 pandemic, as governments worldwide increased spending to mitigate the economic impact of the crisis.

In the most recent years, from 2021 to 2023, government expenditure was scaled back, with a sharp decline to 6.65% of GDP in 2023 (World Bank, 2023). This significant reduction might indicate post-pandemic fiscal tightening, where the government seeks to restore fiscal balance after a period of heightened spending. It could also reflect efforts to reduce public sector involvement in the economy to encourage private sector growth or due to revenue constraints.

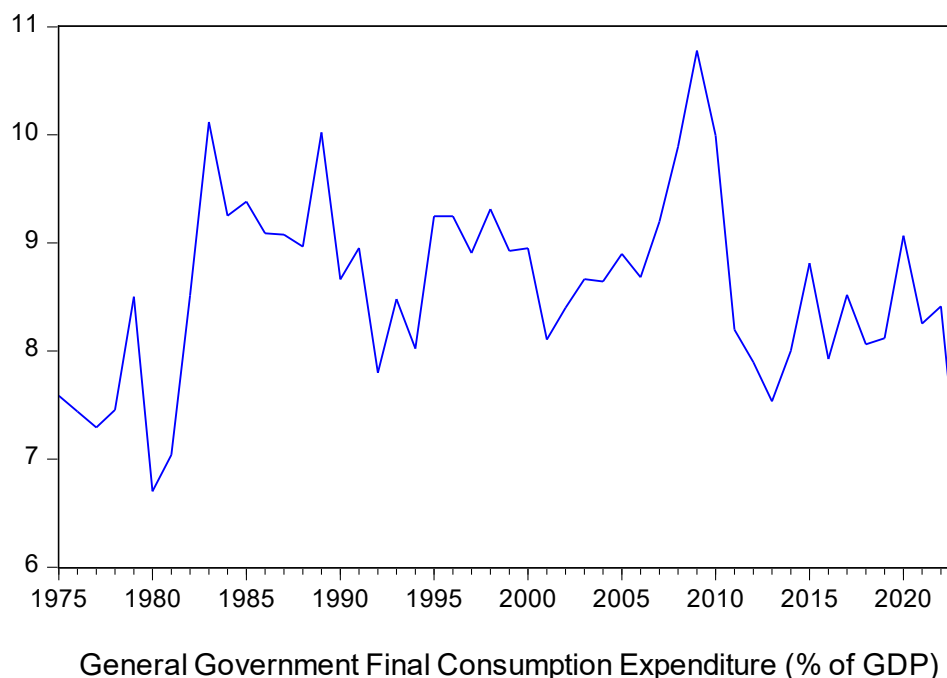


Figure 2: General Government Final Consumption Expenditure (% of GDP) in Nepal
Source: World Development Indicator, 2023

2.3 Capital Investment in Nepal

Figure 3 shows Nepal's capital investment, measured by Gross Fixed Capital Formation (GFCF) as a percentage of GDP, from 1975 to 2023. The data reveals significant trends and fluctuations in investment during this period. In the early years (1975-1984), GFCF gradually increased from 13.42% in 1975 to a peak of 20.84% in 1985, reflecting a phase of growing investment likely driven by the early stages of industrialization and infrastructure development in Nepal.

However, from 1985 to 1990, GFCF fluctuated, declining to 16.12% in 1990. This decline could be due to economic and political instability, which often impacts investor confidence and slows down capital formation. The early 1990s marked a recovery phase, with GFCF steadily rising to over 21% by 1995. The period from 1990 to 1997 was relatively stable in terms of investment, reflecting economic adjustment and possible political stabilization.

The late 1990s and early 2000s, however, showed some volatility, with GFCF hovering around 19-22% of GDP. This period coincides with the intensification of the Maoist insurgency in Nepal, which likely disrupted economic activities and deterred investment. After 2006, when the peace process began, GFCF resumed its upward trend, reflecting renewed investor confidence

and efforts to rebuild the economy. By 2011, GFCF had reached nearly 24% and continued to rise, hitting 27.55% in 2015.

From 2015 to 2019, Nepal saw a significant surge in investment, with GFCF peaking at 33.82% in 2019. This period corresponds to major reconstruction activities after the 2015 earthquake, along with increased public and private investment in infrastructure and development projects. However, post-2019 data shows a decline in GFCF, dropping to 30.47% in 2020, 28.98% in 2022, and 25.08% in 2023 (World Bank, 2023). The sharp decline in 2020 can be linked to the global impact of the COVID-19 pandemic, which disrupted economic activities worldwide, including in Nepal.

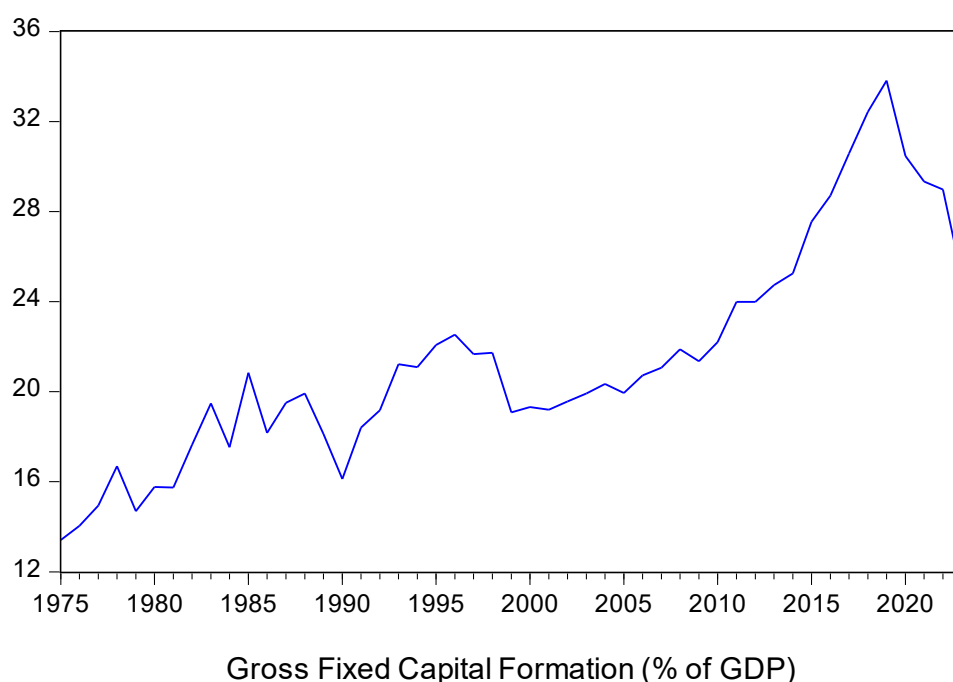


Figure 3: Gross Fixed Capital Formation ((% of GDP) in Nepal

Source: World Development Indicator, 2023

2.4 Trade in Nepal

Figure 4 shows Nepal's trade as a percentage of GDP from 1975 to 2023, illustrating significant changes in the country's trade dynamics and its growing integration into the global economy. From 1975 to 1990, trade as a percentage of GDP steadily increased from 22.27% in 1975 to 32.19% in 1990. This gradual rise can be attributed to liberalization policies and economic reforms that Nepal began adopting during this time, which opened the economy to more

international trade. The growth in trade relative to GDP during these years shows an expanding role of external trade in the economy, though at a moderate pace.

The period from 1991 to 2000 saw a sharp increase in trade activity, with trade as a percentage of GDP rising from 34.68% in 1991 to a peak of 64.04% in 1997. This surge reflects Nepal's deeper integration into global markets, likely driven by policy reforms aimed at liberalizing trade, as well as increased imports and exports influenced by regional and global economic trends. However, this rapid growth was followed by some volatility, with trade as a percentage of GDP falling to 52.57% in 1999 before slightly rebounding in 2000. The fluctuations during this period suggest that while the trade sector was growing, it was also sensitive to external economic shocks and internal economic adjustments.

In the early 2000s (2001-2010), the trade-to-GDP ratio declined, dropping from 55.80% in 2001 to 45.98% in 2010. This decline coincides with global economic challenges, including the aftermath of the 9/11 attacks and the global financial crisis of 2008, which likely affected Nepal's trade volumes. Additionally, internal factors such as political instability and civil conflict during this period may have contributed to reduced trade activity. Despite this downturn, trade remained a substantial part of the economy, showing that while growth slowed, Nepal continued to engage in international trade.

From 2011 onwards, the trade-to-GDP ratio reflects a period of recovery and adjustment. After hitting a low of 36.30% in 2011, trade gradually increased, reaching 48.45% in 2018 and maintaining a relatively high level until 2019. This recovery suggests a renewed focus on trade, possibly driven by economic stabilization and efforts to diversify trade partners. However, the COVID-19 pandemic in 2020 led to a significant drop in trade to 40.92% of GDP, reflecting global trade disruptions. The post-pandemic recovery is evident in the following years, with trade rebounding to 48.97% in 2022, though it slightly declined again to 41.64% in 2023 (World Bank, 2023).



Figure 4: Trade (% of GDP) in Nepal

Source: World Development Indicator, 2023

2.5 Inflation in Nepal

Figure 6 shows Nepal's inflation, measured by annual consumer prices from 1975 to 2023, highlighting significant volatility due to various economic challenges and external shocks over the decades. The inflation rate in Nepal has fluctuated dramatically, with periods of both high inflation and deflation, indicating underlying instability in the economy and sensitivity to domestic and international economic conditions.

In the late 1970s and early 1980s, inflation in Nepal was highly erratic. The period began with deflation in 1976 (-3.11%), followed by a sharp rise to 9.90% in 1977. This volatility continued, with extremely high inflation in 1980 (14.68%) and consistently high rates through the early 1980s, including peaks of 11.70% in 1982 and 12.38% in 1983. These sharp increases in consumer prices were likely due to global oil price shocks, domestic supply constraints, and structural issues within Nepal's economy, such as reliance on imported goods and poor infrastructure.

From the mid-1980s to the early 1990s, inflation remained high, peaking at 19.00% in 1986. The late 1980s saw some moderation, with rates around 8-10%, but there was a resurgence in the early 1990s. Inflation surged to 15.56% in 1991 and 17.15% in 1992, likely driven by political

instability, economic liberalization, and regional economic conditions. The high inflation during this period may also reflect adjustments from transitioning from a closed economy to one more integrated into global markets.

The late 1990s and early 2000s marked a period of relative stabilization in inflation rates. After peaking at 11.24% in 1998, inflation significantly declined, reaching a low of 2.48% in 2000. This period of lower inflation can be attributed to improved macroeconomic management, including better control over monetary policy, and possibly favorable agricultural production, which helped stabilize food prices—a key component of inflation in Nepal’s largely agrarian economy.

However, inflation began to rise again in the late 2000s, peaking at 11.09% in 2009, likely due to global financial instability and rising food and energy prices. The following years saw persistently high inflation, with rates consistently around 9% from 2009 to 2014. This persistent inflation could be due to structural challenges within Nepal’s economy, including dependence on imports, supply chain inefficiencies, and frequent disruptions due to political instability.

From 2015 onwards, inflation showed a trend of gradual moderation, though with some fluctuations. After peaking at 8.79% in 2016, inflation declined to 3.63% in 2017, indicating some stabilization in the economy. However, the COVID-19 pandemic had a complex impact on inflation, with rates staying relatively stable around 4-5% from 2018 to 2021. The pandemic likely disrupted both supply and demand, leading to price pressures in some areas while reducing inflationary pressures in others. By 2022, inflation rose again to 7.65%, reflecting global supply chain disruptions and increased energy prices. In 2023, inflation remained elevated at 7.11%, signaling ongoing economic challenges in the post-pandemic recovery phase (World Bank, 2023).

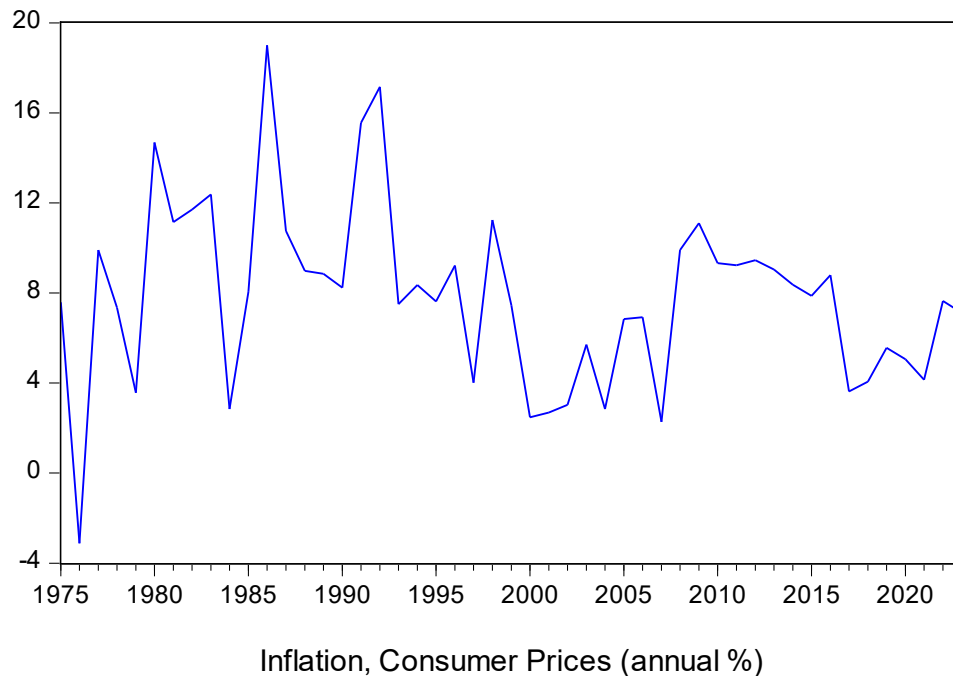


Figure 5: Inflation (annual %) in Nepal
Source: World Development Indicator, 2023

2.6 Theoretical Debate: Government Expenditure and Economic Growth

The relationship between government expenditure and economic growth has been widely debated in economic theory. Different perspectives offer varying views on how these two variables interact. Understanding this relationship is crucial for formulating effective economic policies, especially in a developing country like Nepal. The debate primarily revolves around two key theoretical frameworks: Wagner's Law and the Keynesian Hypothesis.

Wagner's Law

Wagner's Law, proposed by German economist Adolph Wagner in the late 19th century, suggests that as an economy develops, there is an inherent tendency for government expenditure to increase as a proportion of national income. Wagner observed that as countries become wealthier and more industrialized, their citizens demand more public services, such as education, healthcare, and infrastructure. This increased demand drives up government spending, leading to a larger role for the state in the economy (Wagner, 1883).

Wagner's theory suggests a positive correlation between economic growth and government expenditure. The law implies that as economic output rises, the public sector expands to meet the

growing social and economic needs of the population. This expansion is often seen in the development of infrastructure, the provision of social services, and the regulation of markets to correct failures that emerge as economies become more complex. Empirical studies have provided evidence supporting Wagner's Law in various contexts, including developing countries like Nepal, where economic growth has been accompanied by increased public spending.

Keynesian Hypothesis

Contrary to Wagner's Law, the Keynesian Hypothesis, derived from the work of British economist John Maynard Keynes, views government expenditure as an active instrument that can be used to drive economic growth. Developed during the 1930s in response to the Great Depression, the Keynesian Hypothesis argues that government spending, particularly during economic downturns, can stimulate aggregate demand, leading to increased production, employment, and overall economic growth (Keynes, 1936).

The Keynesian approach suggests that government expenditure is a tool for managing economic cycles. During recessions, when private sector demand is insufficient, increased public spending can offset the decline in economic activity. This spending can take the form of public works, infrastructure projects, or other forms of direct government investment, which injects money into the economy and stimulates further spending. The multiplier effect, a key concept in Keynesian economics, suggests that an initial increase in government spending can lead to a more significant overall increase in economic output. This theory has been widely tested and supported, including in the context of Nepal, where studies like those by Shah (2020) and Rana (2021) indicate that government expenditure has played a vital role in stimulating economic growth.

Integrating Wagner's Law and the Keynesian Hypothesis

While Wagner's Law and the Keynesian Hypothesis offer different perspectives, they are not mutually exclusive. Both theories provide valuable insights into the complex relationship between government expenditure and economic growth. Wagner's Law suggests that economic growth naturally leads to increased government spending, particularly as societies become more complex and demand more public services. On the other hand, the Keynesian Hypothesis posits that government spending can be a powerful tool to stimulate economic growth, especially in times of economic distress.

Understanding the theoretical debate on government expenditure and economic growth has significant implications for Nepal's economic policy. If Wagner's Law holds true, Nepal should anticipate increased demand for public services as the economy grows, requiring careful planning and efficient allocation of resources. Alternatively, if the Keynesian Hypothesis is more applicable, the government could use targeted spending to stimulate growth, particularly in critical sectors like infrastructure, education, and healthcare.

The debate between Wagner's Law and the Keynesian Hypothesis provides a robust theoretical framework for understanding the impact of government expenditure on economic growth. In Nepal, where the economic landscape is marked by both growth and challenges, applying these theories can offer valuable insights for policy formulation.

2.7 Empirical Literature Review

2.7.1 International Context

The empirical relationship between government expenditure and economic growth has been extensively studied, yet the findings remain mixed and context-dependent, reflecting the complex nature of this dynamic. Empirical evidence can be broadly categorized into three groups: studies that find a positive relationship, those that report a negative relationship, and those highlighting the context-dependent nature of the relationship. This diversity in results underscores the importance of considering country-specific factors such as the structure of the economy, the efficiency of public spending, and the overall governance framework.

Positive Impact of Government Expenditure on Economic Growth

A significant body of literature supports the view that government expenditure, particularly when strategically targeted, can foster economic growth. For example, Loizides and Vamvoukas (2005) demonstrated that government spending in Greece, the UK, and Ireland positively impacts national revenue over the long term. In the context of sub-Saharan Africa, Kimaro et al. (2017) observed that increased government spending accelerates economic growth in low-income countries, particularly when directed toward productive sectors. Hlongwane et al. (2021) confirmed a short-run positive impact of government spending on economic growth in South Africa, where a 1% increase in expenditure led to a 0.15% growth. These findings are echoed by Gisore et al. (2014) and Lupu et al. (2018), who noted that spending on health and education

significantly contributes to economic development in East Africa and Central and Eastern Europe, respectively. Additionally, studies such as those by Nyarko-Asomani et al. (2019) in Ghana further emphasize the growth-enhancing effects of capital expenditure, particularly in infrastructure and public services.

Negative and Insignificant Impacts of Government Expenditure

Despite the positive findings, there is also substantial evidence indicating that government expenditure can have a negative or insignificant effect on economic growth, often due to inefficiencies or misallocation of resources. Mo (2007) highlighted the detrimental impact of increased government consumption on GDP growth, noting that a 1% rise in government consumption led to a 0.216% decrease in GDP growth. This negative relationship is further supported by Barlas (2020), who found that government spending in Afghanistan is negatively associated with economic growth. Similarly, Molefe and Choga (2017) observed that in South Africa, government expenditure could be detrimental to economic growth, potentially due to the inefficient use of public funds. Mose (2020) also reported a negative impact of government spending on regional growth, with no long-term causal relationship found between growth and expenditure components. Some studies, like Ogar et al. (2019) in Nigeria, found that government expenditure had an insignificant relationship with economic growth, suggesting that other factors, such as private sector investment, may be more critical in driving economic performance. Anisaurrohman et al. (2020) similarly found no significant effect of government expenditure on growth, though they noted that investment and labor experience could mitigate this effect.

Context-Dependent and Nonlinear Relationships

The impact of government expenditure on economic growth is often context-dependent and can exhibit nonlinear characteristics. For instance, Aydin and Esen (2019) identified a threshold effect in government spending, where expenditure above a certain level negatively impacts growth, but below this threshold, it has a positive effect. Okoye et al. (2019) similarly noted a negative short-run impact of government expenditure on growth in Nigeria, although no long-term relationship was observed. More sophisticated models, such as the Markov-switching dynamic regression employed by Menla Ali and Dimitraki (2014) and Dinh Thanh and Canh (2019), suggest that the relationship between government spending and growth varies across

different economic states. For example, Phiri (2019) found an inverted U-shaped relationship between military spending and economic growth, indicating that while initial increases in spending may boost growth, further increases eventually lead to a decline. Yang (2020) explored the effect of health expenditure on growth in developing countries, finding a negative impact unless the level of human capital is high enough to make such spending effective. Kirikkaleli and Ozbeser (2022) found that while long-term economic growth leads to increased government spending, short-term effects are more pronounced during recessions, where government spending can temporarily boost growth. Chu et al. (2020) distinguished between productive and non-productive government expenditures, showing that productive spending enhances growth, while non-productive spending does not. Ahuja and Pandit (2020) also found that public spending's effect on GDP growth is positive but highly dependent on how effectively the funds are allocated.

The international empirical literature on government expenditure and economic growth presents a nuanced picture. While there is considerable evidence supporting both the positive and negative impacts of government spending on economic growth, the effectiveness of such expenditure largely depends on its composition, efficiency, and the broader economic context. For developing countries, where the government's role in economic activities is often more pronounced, understanding these dynamics is crucial. Effective public spending, particularly on infrastructure, education, and health, appears to be a key driver of growth. However, caution must be exercised to avoid inefficiencies and the potential crowding-out of private sector activities.

2.7.2 Nepali Context

The relationship between government expenditure and economic growth in Nepal has been extensively explored, with various studies employing different methodologies to understand the impact of public spending on the country's economic performance. The findings from these studies reveal a complex and nuanced understanding of how different components of government expenditure influence economic growth, as well as the challenges associated with the effective allocation and utilization of public funds.

Several studies, including those by Shah (2020) and Rana (2021), have identified a significant long-run relationship between government expenditure and economic growth in Nepal, using the

ARDL model. These findings support the Keynesian view that increased public spending can stimulate economic growth. However, despite the positive influence of both recurrent and capital expenditures, the studies also indicate that the growth rate of GDP has not corresponded proportionately to the rising public expenditure. This suggests inefficiencies in the allocation and utilization of government funds, which are further exacerbated by political instability and governance challenges.

The strategic allocation of government expenditure across different sectors has also emerged as a critical factor in determining its impact on economic growth. Studies by Dhungel (2022) and Paudel (2023) underscore the importance of investing in sectors like education, health, and agriculture to promote sustainable economic development. Dhungel (2022) finds that expenditures in education and health positively impact GDP growth, emphasizing the role of human capital development in driving economic progress. Paudel (2023) similarly highlights the potential of public spending in the education sector to accelerate economic growth, though he also notes inefficiencies in capital expenditure that undermine its effectiveness. Giri (2021) adds another dimension to this discussion by showing that while agricultural expenditure positively impacts GDP growth, education expenditure unexpectedly shows a negative association, indicating potential issues in how these funds are allocated or utilized.

Several studies consistently point to governance and fiscal stability as significant obstacles to the effective impact of public expenditure on economic growth. Shah (2020), Rana (2021), and Giri (2021) all highlight the role of political instability and governance issues in limiting the effectiveness of government spending. The inefficiencies in fund allocation noted in these studies suggest that while government spending is crucial for economic development, the existing political and governance structures may significantly constrain its potential impact. This view is echoed by Rasaily and Paudel (2019), who emphasize the need for coordinated expenditure policies to ensure that public spending effectively stimulates economic growth.

The literature also presents mixed evidence regarding the Keynesian hypothesis that government expenditure promotes economic growth. While many studies support this view, others, such as those by Gaire (2014) and Regmi (2007), challenge its validity in the Nepalese context. Gaire (2014) finds no causality between government expenditure and economic growth, suggesting that the Keynesian hypothesis may not hold true for Nepal. Regmi (2007) even reports that fiscal

policy variables, including productive expenditure and taxes, have a negative effect on economic growth, further complicating the narrative.

2.8 Research Gap

While a substantial body of literature explores the relationship between government expenditure and economic growth in Nepal, research gaps persist that demand further investigation. Existing studies, such as those by Shah (2020) and Rana (2021), have confirmed a long-run relationship between government expenditure and economic growth, often aligning with the Keynesian hypothesis, which advocates for increased public expenditure stimulate economic activity. However, these analyses primarily focus on aggregated data, overlooking the nuanced effects of disaggregated government expenditure, particularly with capital investment and sector-specific spending in areas like infrastructure, education, and health.

A gap in the current literature is the absence of comprehensive studies that dissect government expenditure into its distinct components. While some research, like that of Dhungel (2022) and Paudel (2023), has touched on the importance of sector-specific allocations, there remains a notable deficiency in studies that systematically analyze the differential impacts of capital versus recurrent expenditures on economic growth over an extended period. This gap is particularly significant given the persistent inefficiencies in public expenditure allocation and utilization, which have been consistently highlighted as barriers to achieving robust economic growth in Nepal.

Additionally, much of the existing research is based on data that does not extend beyond the early 2020s, limiting the relevance of the findings in the context of recent economic developments. These studies fail to incorporate the most up-to-date economic data, missing the opportunity to assess the effects of recent global economic shifts, trade patterns, inflationary pressures, and changes in public investment strategies. The proposed research seeks to address this gap by analyzing data up to 2023. This will provide a more current and comprehensive understanding of the relationship between government expenditure and economic growth in Nepal.

Moreover, the current literature often overlooks the implications of Wagner's Law, which posits that as an economy grows, the public sector tends to expand. This research will explore the relevance of Wagner's Law in the Nepalese context, contrasting it with the Keynesian hypothesis

to assess whether government spending in Nepal primarily responds to economic growth or acts as a catalyst for it. This dual approach is essential for understanding the dynamics of public expenditure and its effectiveness in promoting sustainable economic growth. The proposed study employed the ARDL model to investigate the relationship between government expenditure and economic growth from 1975 to 2023.

2.9 Conceptual Framework

The conceptual framework of this study suggests that government expenditure, capital investment, trade, and inflation interact in complex ways to influence economic growth in Nepal from 1975 to 2023. The framework is structured around economic growth as the dependent variable, influenced by government expenditure, with capital investment, trade, and inflation serving as control variables.

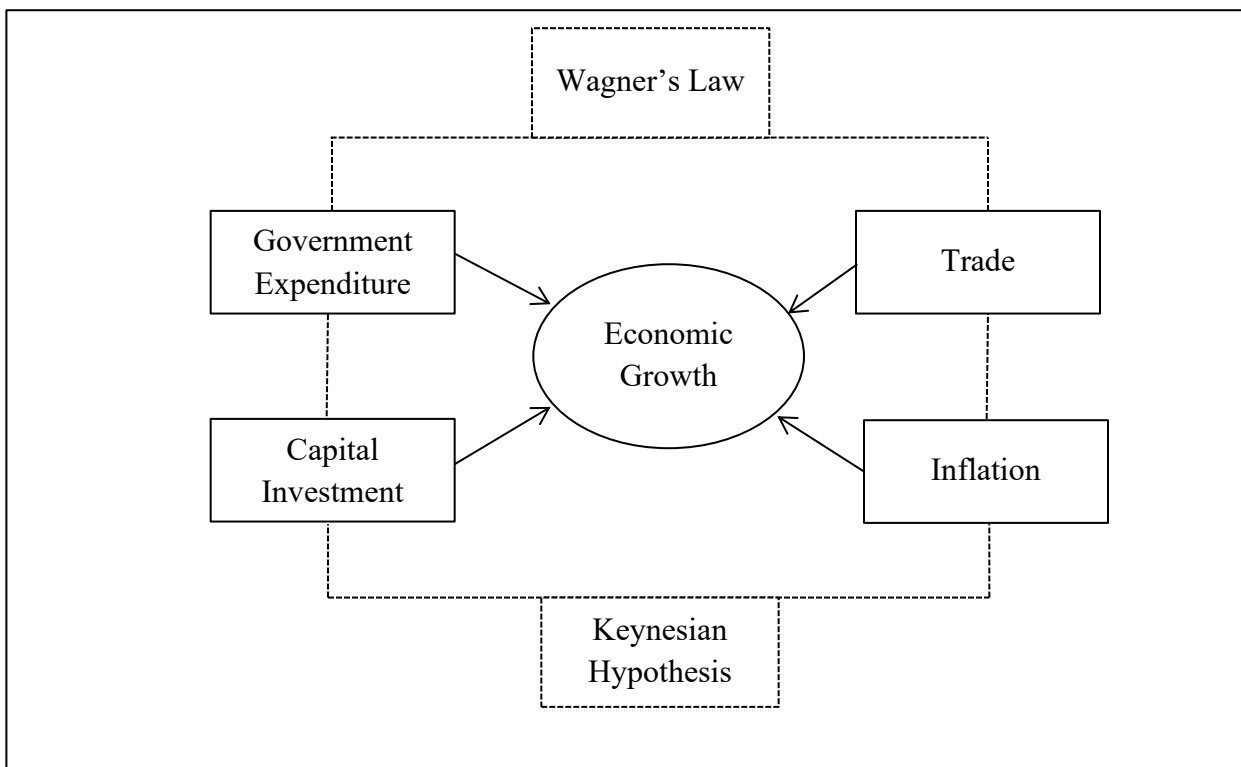


Figure 6: Conceptual Framework of Study

Government Expenditure

The relationship between government expenditure and economic growth is complex and multifaceted, particularly in the context of developing economies like Nepal. The Keynesian hypothesis posits that government spending can stimulate economic growth by increasing aggregate demand, especially during periods of economic downturn (Keynes, 1936). The Keynesian perspective suggests that increased government expenditure can boost aggregate demand. This, in turn, fosters economic growth through multiplier effects. The framework will explore the bidirectional nature of this relationship.

Empirical studies have shown varying impacts of government expenditure on economic growth, depending on the composition and efficiency of the spending. For instance, Shah (2020) and Rana (2021) identified a positive long-run relationship between government expenditure and economic growth in Nepal. Their findings align with Keynesian economics, suggesting that government spending in areas like infrastructure, education, and healthcare has historically contributed to economic development by enhancing productivity and generating employment.

However, not all studies support a universally positive relationship between government expenditure and growth. Molefe and Choga (2017) and Barlas (2020) argue that excessive government expenditure, particularly when poorly managed or misallocated, can be detrimental to economic growth, highlighting the importance of expenditure efficiency. Furthermore, the experiences of other developing countries, such as Nigeria, where Ogar et al. (2019) found no significant relationship between government expenditure and growth, emphasize the context-specific nature of this relationship. In the context of Nepal, understanding this dynamic is crucial, as the country has historically relied on government expenditure to drive economic growth. This study examined whether government expenditure in Nepal has been growth-enhancing or if inefficiencies have dampened its potential impact.

Capital Investment

Capital investment is another critical determinant of economic growth. Both public and private investments play pivotal roles in enhancing a country's productive capacity and economic performance. Private capital investment, as highlighted by Teimouri and Zietz (2018), Li and Cheng (2020), and Rasmané et al. (2020), is essential for fostering innovation and expanding industrial capacity, leading to sustained economic growth. Public investment, particularly in

infrastructure, is also crucial for economic development. Studies by Ghali (1998) and Everhart et al. (2009) indicate that public investment can contribute positively to growth, provided it is efficiently managed and free from institutional corruption. In Nepal, the interplay between public and private capital investments is expected to have distinct yet complementary effects on economic growth. This study examined to what extent these forms of investment have contributed to Nepal's economic performance.

Trade

Trade is a well-established driver of economic growth, particularly for developing economies. The trade-led growth hypothesis suggests that increased trade openness can boost economic growth by expanding markets, encouraging efficiency, and facilitating technology transfer (Das & Paul, 2011; Marelli & Signorelli, 2011). However, the impact of trade on economic growth is not universally positive. For instance, Vamvakidis (2002) and Ulaşan (2015) found no significant relationship between trade openness and economic growth in certain contexts, suggesting that the benefits of trade are contingent upon the stability of international markets and the effectiveness of domestic trade policies. In Nepal, where the economy is heavily reliant on trade, this study will examine how trade has influenced economic growth. Considering both the opportunities and challenges posed by global integration, the study provided a nuanced understanding of trade's role in Nepal's economic development.

Inflation

Inflation is a critical variable in the study of economic growth, with its impact often depending on its intensity. Moderate inflation can foster economic growth by encouraging consumption and investment (Barro, 1995). However, high inflation is generally detrimental to growth, as evidenced by studies like those of Khan and Khan (2018) and Bawa and Abdullahi (2012), which found that inflation beyond a certain threshold can severely hinder economic activity. In the context of Nepal, where inflation has fluctuated significantly over the years, this study examined the threshold at which inflation transitions from being growth-promoting to growth-inhibiting. This analysis is crucial for formulating policies that balance the need for economic growth with the management of inflationary pressures.

Chapter-3

Study Methodology

3. Methodology

3.1 Data and Variables

The analysis was based on annual time series data spanning from 1975 to 2023. This period was selected based on data availability to provide a comprehensive overview of long-term trends and dynamics in Nepal's economy. The primary data source includes the World Development Indicators (WDI) provided by the World Bank (2023), ensuring consistency and reliability in the measurement of all variables.

Dependent Variable

Economic Growth (GDPG): Economic growth was measured by the annual percentage growth rate of GDP. This variable reflects the overall performance of the economy and is a critical indicator of economic development.

Independent Variable

Government Expenditure (GEXP): Government expenditure was measured by the general government final consumption expenditure as a percentage of GDP. This variable includes all current government expenditures on goods and services and plays a central role in analyzing the fiscal policy impacts on economic growth.

Control Variables

Capital Investment (CI): This was measured by gross fixed capital formation as a percentage of GDP. It captures the level of investment in infrastructure, machinery, and buildings, which is vital for understanding the contributions of capital accumulation to economic growth.

Trade (TRADE): Trade was measured by the sum of exports and imports of goods and services as a percentage of GDP. This variable is crucial for analyzing the impact of international trade on economic growth, given Nepal's evolving trade dynamics. It was used as a proxy for trade openness.

Inflation (INF): Inflation was measured by the annual percentage change in consumer prices. This variable reflects the cost of living and the general price level in the economy, influencing both consumer behavior and economic stability.

3.2 Model Specification

To empirically analyze the relationship between economic growth and government expenditure, this study used an economic growth model where GDP growth is modeled as a function of government expenditure, capital investment, trade, and inflation. The model was designed to capture the impact of these variables on Nepal's economic growth. The general model for this study is expressed as:

$$GDP_t = \beta_0 + \beta_1 GEXP_t + \beta_2 CI_t + \beta_3 TRADE_t + \beta_4 INF_t + \varepsilon_t$$

Equation (1)

Where:

GDP_t represents economic growth at time t .

$GEXP_t$ is government expenditure at time t .

CI_t is gross fixed capital formation at time t .

$TRADE$ is the trade variable at time t .

INF_t is inflation at time t .

ε_t is the error term.

To account for non-linearity and stabilize variance, the log-linear form of the model was employed:

$$\ln GDP_t = \beta_0 + \beta_1 \ln GEXP_t + \beta_2 \ln CI_t + \beta_3 \ln TRADE_t + \beta_4 \ln INF_t + \varepsilon_t$$

Equation (2)

In this log-linear form, the coefficients β_1 , β_2 , β_3 and β_4 represent the elasticities of GDP with respect to government expenditure, capital investment, trade, and inflation, respectively. The logarithmic transformation helps mitigate the impact of outliers and large coefficients, providing

a clearer interpretation of the percentage changes in GDP in response to changes in the independent variables.

3.3 Estimation Technique

3.3.1 Stationarity Test

The stationarity of time series data is a fundamental assumption in econometric analysis, particularly when employing the ARDL model. Ensuring that the variables are stationary is crucial for obtaining reliable and meaningful results, as non-stationary data can lead to spurious regressions. In this study, the stationarity of variables such as economic growth, government expenditure, capital investment, trade, and inflation was tested using both the Augmented Dickey-Fuller (ADF) test and the Phillips-Perron (PP) test.

ADF Test

The ADF test is an enhanced version of the Dickey-Fuller test, designed to address the issue of autocorrelation in error terms, which is a common characteristic of macroeconomic time series data. The ADF test achieves this by including additional lagged terms of the dependent variable in the test equation, which provides more reliable results. The ADF test can be specified as follows:

$$\Delta \ln X_t = \alpha_1 + \alpha_2 t + \alpha_3 X_{t-1} + \sum_{i=1}^p \beta_i \Delta X_{t-i} + \varepsilon_t$$

Equation (3)

Where:

X_{t-1} represents the time series variable being tested (e.g., GDP growth, government expenditure).

t is the time trend variable.

Δ denotes the first difference operator.

α_1, α_2 and α_3 are the estimated coefficients.

β_i represents the coefficients of the lagged differences of the dependent variable.

ε_t is the error term.

The null hypothesis (H_0) of the ADF test states that the series has a unit root, implying that it is non-stationary. The alternative hypothesis (H_1) suggests that the series is stationary, meaning that it does not have a unit root. If the null hypothesis is rejected, the series is considered stationary. Otherwise, the series is non-stationary and requires differencing to achieve stationarity. The ADF test was applied to each variable in this study to determine its order of integration. This ensures that the subsequent econometric modeling is based on reliable data properties.

PP Test

In addition to the ADF test, the Phillips-Perron (PP) test was also employed to confirm the stationarity of the variables. The PP test, developed by Phillips and Perron (1988), is a non-parametric test that adjusts the test statistics to account for autocorrelation and heteroscedasticity in the error terms. This makes the PP test a robust alternative to the ADF test, particularly in the presence of complex error structures. The PP test is specified as follows:

$$\Delta X_{t-1} = \alpha_0 + \beta X_{t-1} + \varepsilon_t \quad \text{Equation (4)}$$

Where:

βX_{t-1} represents the lagged value of the time series variable.

α_0 and β are the coefficients to be estimated.

ε_t is the error term.

The null hypothesis (H_0) of the PP test is that the series has a unit root ($\beta=0$), indicating non-stationarity. The alternative hypothesis (H_1) is that the series is stationary. If the null hypothesis is rejected, the series is considered stationary.

3.3.2 ARDL Model

This study employed the ARDL model to investigate the short-term and long-term effects of government expenditure on economic growth in Nepal, considering capital investment, trade, and inflation as control variables. Consistent with contemporary literature (Asongu et al., 2019), the ARDL model, originally developed by Pesaran and Shin (1999) and further extended by Pesaran et al. (2001), is particularly suitable for analyzing time-series data, regardless of whether the underlying series are stationary at levels $I(0)$, at first difference $I(1)$, or a combination of both. This flexibility, combined with its suitability for small sample sizes (Pesaran et al., 2001;

Haug, 2002; Narayan & Smith, 2005; Guan et al., 2015), makes the ARDL model an ideal choice for analysis. Additionally, the ARDL model allows for the estimation of both short-run and long-run coefficients, providing a comprehensive understanding of the immediate and long-term impacts of government expenditure on economic growth. The general ARDL model can be expressed as follows:

$$\Delta Y_t = \beta_0 + \gamma_0 Y_{t-1} + \gamma_1 X_{t-1} + \gamma_2 Z_{t-1} + \sum_{i=1}^p \beta_i \Delta Y_{t-i} + \sum_{j=0}^q \alpha_j \Delta X_{t-j} + \sum_{k=0}^p \delta_k \Delta Z_{t-k} + \epsilon_t$$

Equation (5)

Where,

Y_t is the dependent variable (economic growth in this study).

X_t and Z_t are the independent variables (government expenditure and control variables such as capital investment, trade, and inflation).

β , γ and δ are the coefficients to be estimated.

ϵ_t represents the error term.

Given the focus of this study, the specific ARDL model to be estimated can be written as:

$$\begin{aligned} \Delta \ln GDP_t = & \beta_0 + \gamma_0 \ln GEXP_{t-1} + \gamma_1 \ln CI_{t-1} + \gamma_2 \ln TRADE_{t-1} + \gamma_3 \ln INF_{t-1} \\ & + \sum_{i=1}^p \beta_i \Delta \ln GEXP_{t-i} + \sum_{j=0}^q \alpha_j \Delta \ln CI_{t-j} + \sum_{k=0}^p \delta_k \Delta \ln TRADE_{t-k} \\ & + \sum_{i=0}^p \beta_k \Delta \ln LNINF_{t-k} + \epsilon_t \end{aligned}$$

Equation (6)

This approach enables the study to assess the impact of government expenditure, along with other control variables, on economic growth in both the short run and the long run.

3.3.3 ARDL Bounds Testing Approach

The ARDL bounds test for cointegration (long-run equilibrium relationship) is established from the overall test of significance of the lag of all the variables in their levels form. The study thus tests the significance of the F-statistic. The null hypothesis (H_0) posits that there is no long-run relationship among the variables, while the alternative hypothesis (H_1) suggests the presence of such a relationship. The hypotheses can be formulated as follows:

$$H_0: \gamma_0 = \gamma_1 = \gamma_2 = \gamma_3 = 0$$

$$H_1: \gamma_0 \neq \gamma_1 \neq \gamma_2 \neq \gamma_3 \neq 0$$

Equation (7)

The ARDL bounds test compares the calculated F-statistic with critical values (Pesaran et al., 2001). If the F-statistic exceeds the upper bound of these critical values, the null hypothesis is rejected, indicating a long-run equilibrium relationship among the variables. Conversely, if the F-statistic falls below the lower bound, the null hypothesis cannot be rejected, suggesting no long-run relationship. This step is essential for validating the long-run coefficients obtained from the ARDL model.

3.3.4 Short-Run and Long-Run Estimates

Upon establishing the presence of a long-run relationship, the ARDL model allows for the estimation of both long-run and short-run coefficients. The long-run equation is expressed as:

$$\ln GDP_t = \beta_0 + \gamma_0 \ln GEXP_{t-1} + \gamma_1 \ln CI_{t-1} + \gamma_2 \ln TRADE_{t-1} + \gamma_3 \ln INF_{t-1} + \epsilon_t$$

Equation (9)

The long-run coefficients $\gamma_0, \gamma_1, \gamma_2, \gamma_3$ represent the sustained effects of government expenditure, capital investment, trade, and inflation on economic growth.

To capture the short-run dynamics, the Error Correction Model (ECM) associated with the ARDL model is estimated. The ECM specifies how quickly the dependent variable returns to equilibrium after a shock. Thus, from Equation (10), the short-run regression model may be expressed as:

$$\Delta \ln GDP_t = \beta_0 + \sum_{i=1}^p \beta_i \Delta \ln GEXP_{t-i} + \sum_{j=0}^q \alpha_j \Delta \ln CI_{t-j} + \sum_{k=0}^p \delta_k \Delta \ln TRADE_{t-k} + \sum_{k=0}^p \beta_k \Delta \ln LNINF_{t-k} + \zeta E_{t-1} + \epsilon_t$$

Equation (10)

In this equation, E_{t-1} is the error correction term, which captures the speed of adjustment back to the long-run equilibrium, with ζ expected to be negative and significant. A significant and negative error correction term indicates that any deviations from the long-run path are corrected over time, ensuring the stability of the relationship between government expenditure and economic growth. This dynamic adjustment is critical in understanding the short-run impacts and how quickly Nepal's economy responds to changes in government expenditure and other economic factors.

3.3.5 Diagnostic Test

To assess the robustness and reliability of the ARDL model in this study, a set of diagnostic tests was performed. These tests are essential for evaluating the model's goodness of fit, validating its underlying assumptions, and confirming the stability of the estimated parameters. The diagnostic tests include the Breusch-Godfrey LM test for serial correlation to detect autocorrelation in residuals, the Jarque-Bera test for normality to assess the distribution of residuals, the Ramsey RESET test to examine the model's functional form and specification, and the Breusch-Pagan-Godfrey test to check for heteroscedasticity.

3.3.7 Stability Test

In addition to these standard diagnostic tests, the stability of the model parameters over time was assessed using the Cumulative Sum of Recursive Residuals (CUSUM) and Cumulative Sum of Squares of Recursive Residuals (CUSUMSQ) tests. The CUSUM test examines the cumulative sum of residuals to determine whether they remain within a predefined confidence band, indicating parameter stability. In contrast, the CUSUMSQ test analyzes the cumulative sum of squared residuals to detect any sudden shifts or instability in the model's parameters. These diagnostic tests are crucial for validating the ARDL model's findings, ensuring that the estimated relationships between government expenditure, economic growth, and the control variables are

both accurate and reliable. All diagnostic analyses were performed using EViews software, which provides a robust platform for econometric modeling and hypothesis testing.

Chapter-4 Results and Discussion

4.1 Unit Root Test

The results of the Phillips-Perron (PP) and Augmented Dickey-Fuller (ADF) unit root tests provide critical insights into the stationarity properties of the variables under consideration in the study. Stationarity is a fundamental assumption in time series analysis, as non-stationary data can lead to spurious regression results and unreliable inferences.

Table 4.1: PP Unit Root Test

		At Level				
		LNGDP_GROWTH	LNGGFCE	LNGFCG	LNTRADE	LNINFLATION
With Constant	t-Statistic	-7.3647	-3.0821	-1.9563	-2.4624	-4.9157
	Prob.	0.0000	0.0347	0.3046	0.1309	0.0002
With Constant & Trend	t-Statistic	-7.2803	-2.8409	-2.8270	-1.8465	-5.1182
	Prob.	0.0000	0.1905	0.1952	0.6663	0.0007
Without Constant & Trend	t-Statistic	-2.4420	-0.4175	1.2236	0.8439	-0.8172
	Prob.	0.0158	0.5276	0.9415	0.8897	0.3565
		At First Difference				
		LNGDP_GROWTH	LNGGFCE	LNGFCG	LNTRADE	LNINFLATION
With Constant	t-Statistic	-33.4863	-8.8742	-8.0132	-5.9796	-17.1711
	Prob.	0.0001	0.0000	0.0000	0.0000	0.0000
With Constant & Trend	t-Statistic	-35.7881	-13.5804	-8.0316	-6.1549	-16.9430
	Prob.	0.0000	0.0000	0.0000	0.0000	0.0000
Without Constant & Trend	t-Statistic	-30.3683	-9.0218	-7.7920	-5.9932	-17.3846
	Prob.	0.0000	0.0000	0.0000	0.0000	0.0000

At the level, or in their original form, the variable economic growth demonstrates strong evidence of stationarity. This conclusion is supported by the highly significant t-statistics and extremely low p-values across all specifications of the PP and ADF tests, including those with a constant, with a constant and trend, and without either. Similarly, inflation also shows stationarity at the level, as its p-values are consistently below the conventional threshold of 0.05. These findings imply that both economic growth and inflation do not contain a unit root and can be directly incorporated into the analysis without further transformation.

In contrast, the variables government expenditure, capital investment, and trade fail to achieve stationarity at the level. The p-values for these variables exceed the critical threshold of 0.05 in most test specifications, indicating the presence of a unit root. This suggests that these variables exhibit stochastic trends and are non-stationary in their original form. Consequently, they cannot be used directly in the analysis without modification.

When the first differences of these variables are examined, all variables— government expenditure, capital investment, trade, and even those already stationary at the level—achieve stationarity. The t-statistics for the first-differenced series are highly significant, and the associated p-values are close to zero across all test specifications. This indicates that the first differences of these variables are free from unit roots and can be considered stationary. In econometric terms, government expenditure, capital investment, and trade are integrated of order one, denoted as I (1), while economic growth and inflation are integrated of order zero, denoted as I (0).

The presence of variables with mixed orders of integration I (0) and I (1) make the ARDL model particularly appropriate for this analysis. The ARDL approach is well-suited for modeling relationships among variables that are a combination of I (0) and I (1) processes.

Table 4.2: ADF Unit Root Test

		At Level				
		LNGDP_GROWTH	LNGGFCE	LNGFCG	LNTRADE	LNINFLATION
With Constant	t-Statistic	-7.1447	-3.2589	-1.9689	-2.4674	-4.8609
	Prob.	0.0000	0.0226	0.2992	0.1296	0.0002
With Constant & Trend	t-Statistic	-7.0597	-3.1009	-2.6933	-1.7965	-5.0878
	Prob.	0.0000	0.1182	0.2439	0.6909	0.0008
Without Constant & Trend	t-Statistic	-0.4359	-0.3329	1.0738	0.8439	-0.3369
	Prob.	0.5178	0.5601	0.9240	0.8897	0.5581
		At First Difference				
		LNGDP_GROWTH	LNGGFCE	LNGFCG	LNTRADE	LNINFLATION
With Constant	t-Statistic	-6.2813	-7.7958	-8.0556	-6.0315	-8.7926
	Prob.	0.0000	0.0000	0.0000	0.0000	0.0000
With Constant & Trend	t-Statistic	-6.1717	-7.8743	-8.0812	-6.2048	-8.6996
	Prob.	0.0001	0.0000	0.0000	0.0000	0.0000
Without Constant & Trend	t-Statistic	-6.3961	-7.8861	-7.8362	-6.0371	-8.9039
	Prob.	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Lag Length Selection

The selection of the appropriate lag length is a critical step in time series analysis, as it ensures that the model captures the dynamics of the data effectively without overfitting or underfitting. The results from the VAR lag order selection criteria guide the optimal lag length for the analysis. In this study, the FPE and AIC criteria suggest that lag 3 is optimal, as indicated by the asterisks (*) next to their values. These criteria prioritize model fit and penalize complexity less strictly, making them more likely to select longer lag lengths.

Table 4.3: he Optimal Lag Length

Lag	LogL	FPE	AIC	SC
0	1.988963	8.26e-07	0.182487	0.409231
1	87.29474	2.18e-08	-3.472409	-2.111947*
2	110.8409	2.66e-08	-3.384298	-0.890119
3	145.1372	2.07e-08*	-3.947707*	-0.319810

* indicates lag order selected by the criterion; FPE: Final prediction error; AIC: Akaike information criterion; SC: Schwarz information criterion;

4.3 Bounds Test of Cointegration

The Bounds Test of Cointegration is a crucial step in the ARDL modeling framework. It helps determine whether a long-run relationship exists among the variables included in the analysis. The computed F-statistic for the cointegration test is 6.699671, which is significantly higher than the upper-bound critical values at all levels of significance (10%, 5%, 2.5%, and 1%). For instance, at the 5% significance level, the lower-bound critical value is 2.56, and the upper-bound critical value is 3.49. Since the calculated F-statistic (6.699671) exceeds the upper-bound critical value (3.49), the null hypothesis of no cointegration is rejected. This implies that a long-run equilibrium relationship exists among the variables included in the model.

Table 4.4: F-Statistic of Cointegration Relationship

Model	F-statistics	Critical values		
		Significance level	Lower bound	Upper bound
Economic Growth= f (GGFCE, GFCG, TRADE, INFL)	6.699671 K=4	10%	2.2	3.09
		5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Note: K indicates the number of regressors

4.4 Long-run and Short-run Coefficients

The estimated long-run coefficients provide valuable insights into the relationship between government expenditure, capital investment, trade, inflation, and economic growth in Nepal. These coefficients indicate how changes in the independent variables influence economic growth in the long run, holding other factors constant.

The coefficient for government expenditure is 4.204575, which is statistically significant at the 1% level (p-value = 0.0003). This suggests that a 1% increase in government expenditure leads to a 4.2% increase in economic growth in the long run, all else being equal. This highlights the crucial role of government spending in driving economic activity. Increased public investment in infrastructure, education, health, and other sectors likely contributes to higher productivity and growth in Nepal.

Similarly, the coefficient for capital investment is 1.001907, and it is statistically significant at the 5% level (p-value = 0.0149). This implies that a 1% increase in capital investment results in approximately a 1% increase in economic growth over the long term. This finding highlights the importance of private and public capital investment in fostering economic development. Investments in physical capital, such as machinery, buildings, and technology, enhance productive capacity and support sustained growth.

On the other hand, the coefficient for trade is 0.267557, but it is not statistically significant (p-value = 0.2621). This means that trade does not have a significant impact on economic growth in the long run in the context of this model. While trade can theoretically contribute to growth by expanding markets and increasing efficiency, the results suggest that its effect may be limited or offset by other factors in Nepal's economy during the study period.

The coefficient for inflation is 0.288250, and it is marginally significant at the 10% level (p-value = 0.0706). This indicates that a 1% increase in inflation is associated with a 0.29% increase in economic growth, although the relationship is weaker compared to government expenditure and capital investment. Moderate inflation may stimulate economic activity by encouraging consumption and investment, but excessive inflation could harm growth if it leads to uncertainty and reduced purchasing power.

Table 4.5: Estimated Long Run Coefficient

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNGGFCE	4.204575	0.861357	4.881339	0.0003
LNGFCG	1.001907	0.357159	2.805209	0.0149
LNTRADE	0.267557	0.228228	1.172324	0.2621
LNINFLATION	0.288250	0.146359	1.969467	0.0706
C	-12.46982	2.301672	-5.417722	0.0001

4.5 Error Correction Model

The results of the Error Correction Model (ECM) provide insights into the short-run dynamics and the speed of adjustment toward long-run equilibrium in the relationship between government expenditure, capital investment, trade, inflation, and economic growth in Nepal. These findings are crucial for understanding how deviations from the long-run equilibrium are corrected over time.

The coefficient of the error correction term (ECT (-1)) is -1.166533, and it is statistically significant at the 1% level (p-value = 0.0000). This indicates a strong and rapid adjustment

process to restore equilibrium after any short-term disturbances. Specifically, approximately 116.65% of the disequilibrium from the previous period is corrected in the current period. While such a high adjustment rate may seem unusual, it suggests that the Nepali economy has mechanisms in place to quickly address imbalances in the factors influencing economic growth. For example, if there is a temporary shock to government expenditure or trade, the economy adjusts swiftly to realign with its long-run growth trajectory.

Turning to the short-run coefficients, the coefficient of government expenditure is 0.147538. However, it is not statistically significant ($p\text{-value} = 0.9074$), indicating that changes in government expenditure do not have a meaningful impact on economic growth in the short run. This contrasts with the long-run results, where government expenditure was found to be a significant driver of growth. The lack of short-run significance may reflect delays in the implementation of government spending programs or the time required for such expenditures to translate into tangible economic outcomes.

Similarly, capital investment has no significant short-run effect on economic growth ($p\text{-value} = 0.8921$), implying that increases in capital investment do not immediately influence economic activity but instead contribute to growth gradually over the long term. These findings align with the understanding that investments in physical capital often require time to yield productive results.

In contrast, trade has a statistically significant coefficient of 4.810026 ($p\text{-value} = 0.0006$), suggesting that trade plays an important role in driving short-term economic growth in Nepal. A 1% increase in trade leads to approximately a 4.81% increase in economic growth in the short run. This highlights the potential benefits of trade liberalization and increased international trade in boosting economic activity. Trade can stimulate growth by expanding markets, increasing exports, and fostering competition, which enhances productivity.

The coefficient for inflation is 0.181225, but it is not statistically significant ($p\text{-value} = 0.3279$), indicating that inflation does not significantly affect economic growth in the short run within this model. While moderate inflation can sometimes stimulate economic activity, these results suggest that its short-term impact is limited or offset by other factors in Nepal's economy.

The adjusted R-squared value of 0.664420 suggests that approximately 66.4% of the variation in economic growth is explained by the independent variables included in the model, reflecting a reasonably good fit.

Table 4.6: ARDL Short-run and ECM Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.087458	0.106315	-0.822631	0.4165
D(LNGGFCE)	0.147538	1.259186	0.117169	0.9074
D(LNGFCG)	0.202096	1.478851	0.136657	0.8921
D(LNTRADE)	4.810026	1.261304	3.813533	0.0006
D(LNINFLATION)	0.181225	0.182582	0.992570	0.3279
ECT (-1)	-1.166533	0.137914	-8.458394	0.0000

Adjusted R-squared: 0.664420; S.E. of regression: 0.653940; Sum squared resid: 14.53966; Log likelihood: -36.51756; F-statistic: 16.44333; Prob(F-statistic): 0.000000; ECT= error correction term, and C=constant

4.7 Diagnostic Test Results

The diagnostic test results for the ARDL model provide important insights into the reliability and robustness of the estimated relationships between government expenditure, capital investment, trade, inflation, and economic growth in Nepal. These tests assess whether the model satisfies key assumptions of econometric analysis.

The Harvey test and the Breusch-Pagan-Godfrey test are used to check for heteroskedasticity. The F-statistics for these tests are 1.711568 ($p = 0.1665$) and 0.600923 ($p = 0.6641$), respectively. Since both p-values are greater than 0.05, there is no evidence of heteroskedasticity in the residuals. This indicates that the variance of the errors remains constant across observations, satisfying one of the key assumptions of the model.

The Breusch-Godfrey test is used to detect serial correlation. The F-statistic for this test is 1.852478 ($p = 0.1707$). As the p-value exceeds 0.05, there is no evidence of serial correlation in the residuals. This suggests that the model does not suffer from autocorrelation, meaning the errors are independent across time periods.

The RESET test evaluates the functional form of the model to determine whether it is correctly specified. The test's F-statistic is 0.037255 ($p = 0.8479$). The high p-value suggests that the functional form of the model is appropriate, with no need for additional transformations or nonlinear terms. This confirms that the linear specification of the ARDL model is suitable for capturing the relationships among the variables.

Finally, the Jarque-Bera test assesses the normality of the residuals, which is an important assumption for valid hypothesis testing. The Jarque-Bera statistic is 205.63306 ($p = 0.000000$). The extremely low p -value indicates that the residuals are not normally distributed. This violation of normality could be due to outliers, structural breaks, or other factors in the data. While this finding raises some concerns about the robustness of the model, it is worth noting that large sample sizes (as in this study) often yield significant results in normality tests even when deviations from normality are minor. Therefore, the impact of non-normality on the overall conclusions may be limited.

Table 4.7: Diagnostic Test of ARDL Model

	Tests	F-statistic	P-value
Heteroskedasticity	Harvey test	1.711568	0.1665
	Breusch-Pagan-Godfrey	0.600923	0.6641
Serial correlation	Breusch-Godfrey test	1.852478	0.1707
Functional Form	RESET Test	0.037255	0.8479
Normality	Jarque-Bera statistic (205.63306)		0.000000

4.8 Stability Analysis

The stability analysis of the ARDL model provides important insights into whether the estimated relationships between government expenditure, capital investment, trade, inflation, and economic growth in Nepal remain consistent over time. This analysis is conducted using the CUSUM and CUSUMSQ tests, which are graphical tools used to detect structural breaks or instability in the model's parameters.



Figure 7: CUSUM plots

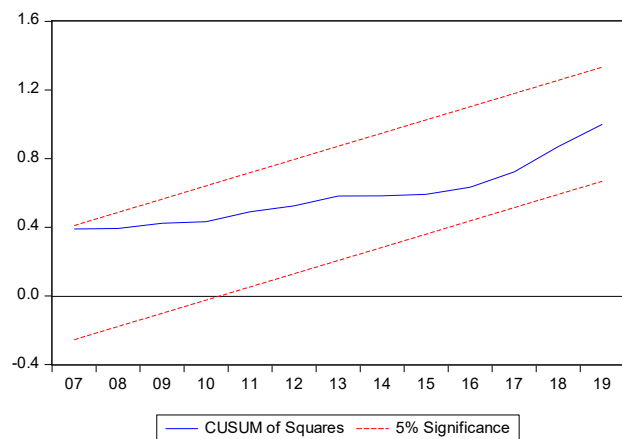


Figure 8: CUSUM of squares plots

Figures 7 and 8 display the CUSUM and CUSUMSQ plots, respectively. Both plots fall within the critical bounds at the 5% significance level throughout the study period. This indicates that the parameters of the model do not experience significant shifts or instability over time. In simpler terms, the relationships between the variables remain stable from 1975 to 2023. For example, the impact of government expenditure on economic growth does not change drastically during this period, nor do the effects of capital investment, trade, or inflation.

4.9 Discussion

The findings of this study show that government expenditure plays a crucial role in Nepal's long-term economic growth, but its short-run effects are not significant. The strong long-term impact supports the Keynesian view that public spending drives economic activity by improving infrastructure, education, and health. Similar results were found in Nepal by Shah (2020) and Rana (2021), who noted that public spending has boosted economic development. However, the insignificant short-run effect suggests that delays in implementing projects and inefficient fund allocation slow down immediate benefits. Studies by Paudel (2023) and Dhungel (2022) highlight how weak governance and misallocation of resources can reduce the effectiveness of government expenditure in both the short and long run.

Capital investment also significantly contributes to long-term economic growth, as it enhances productive capacity by improving infrastructure, machinery, and technology. This finding is supported by Nyarko-Asomani et al. (2019) and Lupu et al. (2018), who emphasize that targeted investment fosters sustainable growth. In Nepal, Paudel (2023) stress the importance of infrastructure and human capital investment in long-term development. However, in the short run, capital investment does not significantly impact growth, likely due to the time lag required for returns to materialize. Hlongwane et al. (2021) and Ogar et al. (2019) found similar trends in other developing countries, where public and private investments take time to translate into economic gains.

Trade affects economic growth differently in the short and long run. The trade-led growth hypothesis suggests that greater trade openness can expand markets, improve efficiency, and facilitate technology transfer (Das & Paul, 2011; Marelli & Signorelli, 2011). However, this study finds that trade has no significant impact on long-term growth in Nepal. This aligns with the findings of Vamvakidis (2002) and Ulaşan (2015), who argue that trade openness does not

always lead to economic growth, particularly in countries with weak industrial bases and ineffective trade policies. Nepal's reliance on imports rather than exports, combined with structural economic limitations, may explain the lack of long-term benefits from trade. Without strong domestic industries and well-crafted policies, the country may struggle to harness the full potential of trade liberalization.

In contrast, trade has a significant positive impact on short-term growth, suggesting that increased trade activity can temporarily boost production and demand. This finding supports the argument that short-term trade benefits stem from rapid changes in market demand and capital flows. However, without strategic investments in export-driven industries, these gains may not translate into sustained economic growth. As noted by Das & Paul (2011) and Marelli & Signorelli (2011), trade can only contribute to long-term development if accompanied by policies that enhance industrial capacity, promote exports, and stabilize trade balances. Thus, while trade provides short-term economic stimulation, Nepal must focus on long-term strategies to maximize its benefits.

Inflation is a crucial factor in economic growth, but its impact depends on its intensity. Moderate inflation can promote growth by encouraging spending and investment (Barro, 1995). However, this study finds that inflation has a weak positive effect on long-term growth in Nepal, which may be due to unstable price levels and ineffective monetary policies. High inflation, on the other hand, can be harmful. Khan and Khan (2018) and Bawa and Abdullahi (2012) found that excessive inflation reduces economic activity by increasing uncertainty and reducing purchasing power. In the short run, this study finds no significant effect of inflation on economic growth, suggesting that temporary price fluctuations do not immediately influence production and investment decisions. This supports the argument that inflation's impact is context-dependent and requires sound monetary policies to ensure stability.

The results of the study suggest that government spending is essential for Nepal's long-term growth, but its immediate benefits are limited due to inefficiencies. Trade provides a short-term boost but does not support sustained development without structural reforms. Capital investment is necessary for long-term growth but requires better efficiency and implementation strategies. Inflation has a weak effect on economic growth, emphasizing the need for stable and well-managed economic policies. Policymakers should focus on improving public spending

efficiency, strengthening trade policies, and maintaining stable inflation to ensure sustainable economic progress.

Chapter-5

Conclusion and implications

5.1 Conclusion

This study explores the relationship between government expenditure and economic growth in Nepal from 1975 to 2023 using the ARDL model. The findings confirm a long-term connection between economic growth, government spending, capital investment, trade, and inflation. Government expenditure is a key driver of long-term growth, though its short-term effects are limited, emphasizing the need for efficient allocation and timely implementation of public funds. Capital investment also plays a crucial role in sustaining growth but requires strategic planning to maximize its benefits. Trade significantly boosts short-term growth, yet its long-term impact remains weak, highlighting the importance of policies that enhance Nepal's trade competitiveness. Inflation has a marginal effect on growth, reinforcing the need for stable macroeconomic policies. These insights call for well-designed fiscal and trade strategies to ensure sustained economic growth. Enhancing the efficiency of public spending, fostering productive investment, and strengthening trade policies will be essential for Nepal to achieve long-term economic stability and development.

5.2 Practical Implications

The findings of this study provide valuable insights. The strong long-term impact of government expenditure on economic growth underscores the need for more efficient allocation and implementation of public funds. Investments in infrastructure, education, and healthcare should be prioritized to maximize economic benefits over time. However, the lack of short-term significance suggests that delays and inefficiencies in public spending must be addressed to ensure a timely economic impact.

Capital investment also plays a crucial role in sustaining long-term growth, emphasizing the importance of well-planned investment strategies. Authorities should focus on improving infrastructure, supporting technological advancements, and fostering a business-friendly environment to enhance the effectiveness of capital investments.

The significant short-run impact of trade on economic growth indicates that trade liberalization and market expansion can stimulate immediate economic activity. However, the absence of a long-term effect suggests that Nepal must adopt policies to strengthen its export sector and reduce dependency on imports. Developing domestic industries, improving trade infrastructure, and negotiating favorable trade agreements will be essential for sustaining trade-driven growth.

Inflation's weak effect on economic growth highlights the need for stable and well-managed macroeconomic policies. Maintaining moderate inflation through sound monetary and fiscal policies can create a stable economic environment that fosters investment and consumption.

References

- Adu, G., Marbuah, G., & Mensah, J. T. (2013). Financial development and economic growth in Ghana: Does the measure of financial development matter? *Review of Development Finance*, 3(4), 192–203. <https://doi.org/10.1016/j.rdf.2013.11.001>
- Anisaurrohmah, A., Rizali, H., & Rahmini, N. (2020). Investment, man power and government expenditure on economic growth in development of three area in South Kalimantan. *International Journal of Business, Economics and Management*, 3(1), 140–147.
- Antwi, S., Mills, E. F., & Zhao, X. (2013). Impact of macroeconomic factors on economic growth in Ghana: A cointegration analysis. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 3(1), 35–45.
- Asongu, S. A., Folarin, O. E., & Biekpe, N. (2019). The long run stability of money demand in the proposed West African monetary union. *Research in International Business and Finance*, 48, 483-495.
- Aydin, C., & Esen, Ö. (2019). Does too much government spending depress the economic development of transition economies? Evidences from dynamic panel threshold analysis. *Applied Economics*, 51(15), 1666–1678. <https://doi.org/10.1080/00036846.2018.1528335>
- Barlas, A. W. (2020). The impact of government expenditure on economic growth in Afghanistan. *Journal of Economics and Business*, 3(2). <https://doi.org/10.31014/aior.1992.03.02.234>
- Barro, R.J. (1995). Inflation and economic growth. *Annals of Economics and Finance*, 109, 85–109.
- Bawa, S. and Abdullahi, I. (2012). Threshold effect of inflation and economic growth in Nigeria. *CBN Journal of Applied Statistics*, 3(1): 43-63. <http://hdl.handle.net/10419/142057>
- Chu, T. T., Hölscher, J., & McCarthy, D. (2020). The impact of productive and non-productive government expenditure on economic growth: An empirical analysis in high-income

- versus low-to middle-income economies. *Empirical Economics*, 58(5), 2403–2430.
<https://doi.org/10.1007/s00181-018-1616-3>
- Das, A., & Paul, B. P. (2011). Openness and growth in emerging Asian economies: Evidence from GMM estimations of a dynamic panel. *Economics Bulletin*, 31, 2219–2228.
- Dhungel, B. D. (2022). Government expenditure and economic growth of Nepal. *Humanities and Social Sciences Journal*, 13(2), 1-14.
- Dinh Thanh, S., & Canh, N. P. (2019). Dynamics between government spending and economic growth in China: An analysis of productivity growth. *Journal of Chinese Economic and Business Studies*, 17(2), 189–212. <https://doi.org/10.1080/14765284.2019.1567069>
- Everhart, S. S., Vazquez, J. M., & McNab, R. M. (2009). Corruption, governance, investment and growth in emerging markets. *Applied Economics*, 41(13), 1579–1594.
- Gaire, H. N. (2014). Relevance of Keynesianism in Nepal : An empirical analysis. *NRB Economic Review*, 26(2), 83–95.
- Ghali, K. H. (1998). Public investment and private capital formation in a vector error-correction model of growth. *Applied Economics*, 30(6), 837–844.
- Giri, S. (2022). Public Expenditure and Economic Growth of Nepal. *The Lumbini Journal of Business and Economics*, 10(1-2), 203-215.
- Gisore, N., Kiprop, S., Kalio, A., & Ochieng, J. (2014). Effect of government expenditure on economic growth in East Africa: A disaggregated model. *European Journal of Business and Social Sciences*, 3(8), 289–304.
- Guan, X., Zhou, M., & Zhang, M. (2015). Using the ARDL-ECM approach to explore the nexus among urbanization, energy consumption, and economic growth in Jiangsu Province, China. *Emerging Markets Finance and Trade*, 51(2), 391-399.
- Gurdal, T., Aydin, M., & Inal, V. (2021). The relationship between tax revenue, government expenditure, and economic growth in G7 countries: New evidence from time and frequency domain approaches. *Economic Change and Restructuring*, 54(2), 305–337.
<https://doi.org/10.1007/s10644-020-09280-x>

- Haug, A. (2002). Temporal aggregation and the power of cointegration tests: A monte carlo study. *Oxford Bulletin of Economics and Statistics*, 64 (4), 399–412. [https:// doi.org/ 10.1111/1468-0084. 00025](https://doi.org/10.1111/1468-0084.00025)
- Hayat, A. (2019). Foreign direct investments, institutional quality, and economic growth. *The Journal of International Trade & Economic Development*, 28(5), 561-579.
- Hlongwane, N. W., et al. (2021). THE relationship between government expenditure and economic growth in South Africa from 1981-2019: An ARDL and ECM approach. *International Journal of Economics and Finance Studies*, 13(2), 131–159.
- Ibrahim, C. (2019). Government spending and non-oil economic growth in the UAE. *Economics and Business*, 33(1), 82–93. [https://doi.org/10.2478/eb- 2019-0006](https://doi.org/10.2478/eb-2019-0006)
- Keynes, J. M. (1936). *The general theory of employment interest and money*. Macmillan and Company.
- Khan, M. and Khan, S. (2018). Inflation and economic growth: Evidence from five Asian Countries. *Pakistan Journal of Applied Economics*, 28(2): 235-252.
- Kimaro, E. L., Keong, C. C., Sea, & L. L. (2017). Government expenditure, efficiency and economic growth: A panel analysis of Sub Saharan African low income countries. *African Journal of Economic Review*, 5(2), 34–54.
- Kirikaleli, D., & Ozbeser, B. (2022). New insights into an old issue: Exploring the nexus between government expenditures and economic growth in the United States. *Applied Economics Letters*, 29(2), 129–134. <https://doi.org/10.1080/13504851.2020.1859448>
- Kunwar, K. (2019). Impact of Government Expenditure in Economic Growth of Nepal: ARDL Approach. *Contemporary Research: An Interdisciplinary Academic Journal*, 3(1), 33-40. <https://doi.org/10.3126/craiaj.v3i1.27488>
- Li, Z., & Cheng, L. (2020). What do private firms do after losing political capital? Evidence from China. *Journal of Corporate Finance*, 60, 101551
- Loizides, J., & Vamvoukas, G. (2005). Government expenditure and economic growth: Evidence from trivariate causality testing. *Journal of Applied Economics*, 8(1), 125–152. [https://doi.org/10.1080/15140326.2005. 12040621](https://doi.org/10.1080/15140326.2005.12040621)

- Lupu, D., Petrisor, M. B., Bercu, A., & Tofan, M. (2018). The impact of public expenditures on economic growth: A case study of Central and Eastern European countries. *Emerging Markets Finance and Trade*, 54(3), 552–570.
<https://doi.org/10.1080/1540496X.2017.1419127>
- Mallick, L., Das, P. K., & Pradhan, K. C. (2016). Impact of educational expenditure on economic growth in major Asian countries: Evidence from econometric analysis. *Theoretical & Applied Economics*, 23(2).
- Marelli, E., & Signorelli, M. (2011). China and India: Openness, trade and effects on economic growth. *The European Journal of Comparative Economics*, 8, 129–154.
- Menla Ali, F., & Dimitraki, O. (2014). Military spending and economic growth in China: A regime-switching analysis. *Applied Economics*, 46(28), 3408–3420.
<https://doi.org/10.1080/00036846.2014.929626>
- Mo, P. H. (2007). Government expenditures and economic growth: The supply and demand sides. *Fiscal Studies*, 28(4), 497–522. <https://doi.org/10.1111/j.1475-5890.2007.00065.x>
- Molefe, K., & Choga, I. (2017). Government expenditure and economic growth in South Africa: a vector error correction modelling and Granger causality test. *Journal of Economics and Behavioral Studies*, 9(4 (J)), 164-172. <https://doi.org/10.22610/jebbs.v9i4.1831>.
- Mose, N. (2020). Government expenditure and regional economic growth: The direction of causality. *Asian Journal of Economics, Business and Accounting*, 18(4), 9–17.
<https://doi.org/10.9734/ajeba/2020/v18i430289>
- Narayan, P. K., & Smyth, R. (2005). Electricity consumption, employment and real income in Australia, evidence from multivariate granger causality tests. *Energy Policy*, 33(9), 1109-1116. <https://doi.org/10.1016/j.enpol.2003.11.010>.
- Nyarko-Asomani, A., Bhasin, V. K., & Aglobitse, P. B. (2019). Government capital expenditure, recurrent expenditure and economic growth in Ghana. *Ghanaian Journal of Economics*, 7(1), 44–70. <https://hdl.handle.net/10520/EJC-1b2f6ea97f>
- Ogar, A., Eyo, I. E., & Arikpo, O. F. (2019). Public expenditure and economic growth in Nigeria: VAR approach. *European Journal of Economic and Financial Research*, 3(3), 36–60. <https://doi.org/10.5281/zenodo.2580458>

- Okoye, L. U., Omankhanlen, A. E., Okoh, J. I., Urhie, E., & Ahmed, A. (2019). Government expenditure and economic growth: The case of Nigeria. *Proceedings of SOCIOINT*, 1184-1194.
- Onifade, S. T., Çevik, S., Erdoğan, S., Asongu, S., & Bekun, F. V. (2020). An empirical retrospect of the impacts of government expenditures on economic growth: New evidence from the Nigerian economy. *Journal of Economic Structures*, 9(1), 1–13. <https://doi.org/10.1186/s40008-020-0186-7>
- Paudel, R. C. (2023). Capital expenditure and economic growth: A disaggregated analysis for Nepal. *Cogent Economics & Finance*, 11(1), 2191449.
- Pesaran, M. H., & Shin, Y. (1999). *An autoregressive distributed lag modelling approach to cointegration analysis in econometrics and economic theory in the 20th century: The Ragnar Frisch Centennial Symposium*, Strom, S. (ed.) Cambridge University Press, 371-413.
- Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of Applied Econometrics*, 16(3), 289–326. <https://doi.org/10.1002/jae.616>
- Phiri, A. (2019). Does military spending nonlinearly affect economic growth in South Africa? *Defence and Peace Economics*, 30(4), 474–487. <https://doi.org/10.1080/10242694.2017.1361272>
- Rana, S. (2021). Government expenditure and economic growth: The case of Nepal. *The Lumbini Journal of Business and Economics*, 9(1-2), 114-124.
- Rasaily, A., & Paudel, S. (2019). Impact of government expenditures on economic growth: Case of Nepal. *International European Extended Enablement in Science, Engineering & Management*, 10(6), 167-174.
- Rasmané, O., Relwendé, S., & Hamidou, S. (2020). Private and public investment in sub-Saharan Africa: The role of instability risks. *Economic Systems*, 44(2), 100787. <https://doi.org/10.1016/j.ecosys.2020.100787>.
- Regmi, U. R. (2007). Fiscal policy and economic growth in Nepal. *The Economic Journal of Nepal*, 30(118), 98-106.

- Shah, R. K. (2020). Nexus between public expenditure and economic growth in Nepal. *The Journal of Economic Concerns*, 40, 1-4, 28-43.
- Shkodra, J., Krasniqi, A., & Ahmeti, N. (2022). THE impact of government expenditure on economic growth in southeast European countries. *Journal of Management Information & Decision Sciences*, 25(4), 100–1025.
- Teimouri, S., & Zietz, J. (2018). The impact of surges in net private capital inflows on manufacturing, investment, and unemployment. *Journal of International Money and Finance*, 88, 158–170.
- Ulaşan, B. (2015). Trade openness and economic growth: Panel evidence. *Applied Economics Letters*, 22, 163–167. <https://doi.org/10.1080/13504851.2014.931914>
- Vamvakidis, A. (2002). How robust is the growth-openness connection: Historical evidence. *Journal of Economic Growth*, 7, 57–80. <https://doi.org/10.1023/A:1013418610712>
- Wagner, A. (1883). *Public Finance*. Winter.
- World Bank (2023). *World development indicators*. World Bank.
- Yang, X. (2020). Health expenditure, human capital, and economic growth: An empirical study of developing countries. *International Journal of Health Economics and Management*, 20(2), 163–176. <https://doi.org/10.1007/s10754-019-09275-w>