IMPACT OF FINANCIAL DEVELOPMENT IN ECONOMIC GROWTH OF NEPAL

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BISHWORAJ POKHREL

Campus Roll No.: 52/074

Symbol No.: 220175

T.U. Regd. No.: 5-1-22-35-2002

Patna Multiple Campus, Patandhoka

Lalitpur, Nepal

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…….……...

Ananta Raj Dahal, Ph.D.

Thesis Supervisor

Date:

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We certify that this thesis entitled IMPACT OF FINANCIAL DEVELOPMENT IN ECONOMIC GROWTH OF NEPAL submitted by Mr. BISHWORAJ POKHREL to the Department of Economics, Faculty of Humanities and Social Sciences, Patan Multiple Campus, Tribhuvan University, in partial fulfillment of the requirements for the Degree of MASTER OF ARTS in ECONOMICS has been found satisfactory in scope and quality. Therefore, we accept this thesis as a part of the said degree.

Thesis Committee:

…….
Head of Department
Associate Prof. Raghu Bir Bista, Ph.D.

…….
External Examiner
Associate Prof. Gyan Mani Adhikari

…….
Thesis Supervisor
Ananta Raj Dahal, Ph.D.

Date:

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ABSTRACT

This study investigates the relationship between economic growth and financial development in Nepal using comprehensive data from the Ministry of Finance (MOF) and Nepal Rastra Bank (NRB) spanning from 1975 to 2022. It focuses on evaluating key financial indicators and their impact on economic growth through rigorous econometric analysis.

Unit root test was employed to examine the stationary of the variables used in the study. The study employed ARDL regression model to examine the impact of financial development on economic growth of Nepal. Residual and diagnostic test were employed to examine whether the regression fits properly or not.

The study showed that number of the financial institutions have been continuously decreasing in Nepal due to policy of merger and acquisition of banking and financial institutions in Nepal introduced by Nepal Rastra Bank. In contrast, the number of Microfinance Institutions (MFIs) has grown substantially from 21 to 90, highlighting their pivotal role in enhancing financial inclusion. The expansion of Commercial Bank branches across Nepal, particularly in Bagmati Province, reflects robust infrastructure development in key economic regions. Analysis of financial indicators reveals that Domestic credit provided by BFIs reached NPR 616,891 million in 2023, equivalent to 115% of Nepal's GDP, underscoring the financial sector's crucial role in supporting economic activities and growth.

The econometric results showed that gross fixed capital formation has positive impact on economic growth of Nepal indicating that increases in capital formation significantly boost economic growth. Similarly, export has a positive impact, highlighting the role of export-oriented strategies in driving economic expansion. Conversely, foreign aid exhibits a negative relationship with economic growth while, domestic credit disbursed by the banking institutions have no impact on economic growth of Nepal. It is recommended to utilize the domestic credit in productive sector rather than the unproductive sector.

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ABBREVIATIONS

ADF	Augmented Dickey-Fuller
ARDL	Autoregressive Distributed Lag
BFIs	Bank and Financial Institutions
CUSUM	Cumulative Sum
CUSUMSQ	Cumulative Sum of Squares
E	Exports
ECM	Error Correction Model
FA	Foreign Aid
GDP	Gross Domestic Product
GE	Government Expenditure
GFCF	Gross Fixed Capital Formation
LA	Loans and Advances
MFIs	Microfinance Institutions
MOF	Ministry of Finance
NPR	Nepalese Rupees
NRB	Nepal Rastra Bank

CHAPTER I

INTRODUCTION

1.1 Background of the Study

The financial sector encompasses institutions, instruments, markets, and the legal and regulatory framework facilitating transactions, primarily through credit extension; fundamentally, the development of the financial sector aims to overcome inherent "costs" within the financial system (World Bank, 2019). Financial development refers to the growth, diversification, and improvement of a country's financial system, encompassing its institutions, markets, and regulatory frameworks. A well-developed financial sector plays a crucial role in facilitating economic activities, channeling funds from savers to borrowers, and fostering overall economic growth. It encompasses various components such as banking institutions, capital markets, insurance companies, and regulatory bodies. Financial development is not just about the size of the financial sector but also involves enhancing its efficiency, accessibility, and stability. A robust financial system contributes to economic development by mobilizing savings, allocating resources efficiently, mitigating risks, and providing a conducive environment for investment and innovation.

The need for financial development stems from its pivotal role in promoting economic growth and stability. A developed financial sector provides individuals and businesses with access to a wide range of financial products and services, including credit, insurance, and investment opportunities. This, in turn, fosters entrepreneurship, job creation, and innovation. Financial development also contributes to poverty reduction by promoting financial inclusion, allowing a broader segment of the population to access and utilize financial services. Moreover, an efficient and well-regulated financial system helps allocate resources more effectively, reducing information asymmetry and improving the overall functioning of markets. In times of economic downturns, a resilient financial sector can act as a stabilizing force, facilitating recovery and minimizing the adverse impacts of financial shocks. Certainly, the financial system serves as a catalyst for economic growth by operating through five key channels: (a) diminishing information and transaction costs, (b) enhancing resource allocation efficiency, (c) elevating the savings rate, (d) fostering the growth

of markets and instruments, and (e) facilitating efficient payment mechanisms (Levine, 1997; Islam et al., 2004). Overall, financial development is essential for creating a robust foundation for sustainable economic growth and development.

Nepal, primarily an agrarian economy, was gradually diversifying with a growing focus on tourism, remittances, and infrastructure development. The country had made progress in key indicators like poverty reduction and human development. However, political instability, frequent changes in government, and a challenging topography presented hurdles to sustained economic growth. The influx of remittances from Nepali workers abroad played a significant role in boosting household incomes, but there was a need for diversified economic activities to ensure resilience. The government had been implementing policies to attract foreign investment and improve the business environment. Infrastructure projects, including hydropower developments, were considered crucial for the long-term economic sustainability of the nation.

The need for financial development in the economic growth of Nepal is paramount, considering the multifaceted benefits it can bring to the nation's evolving economy. A robust financial sector is essential to mobilize and allocate funds efficiently, facilitating investment in various sectors such as infrastructure, technology, and human capital. A proficiently developed financial market directs an economy's savings toward lucrative investments (Stiglitz & Weiss, 1983; Diamond, 1984), diminishes information costs, consequently improving capital allocation (Greenwood & Jovanovic, 1990), and mitigates the expenses associated with corporate governance (Bencivenga & Smith, 1993). In Nepal, where economic activities are diverse but often face resource constraints, a well-developed financial system can act as a catalyst for entrepreneurship and innovation.

Financial institutions, including banks and capital markets, play a crucial role in channeling funds to productive sectors, fostering job creation and sustainable development. Wijnbergen (1983) and Buffie (1984) posit that due to financial development, borrowers transitioning from the informal sector to the formal sector result in a diminished overall credit supply, consequently hampering the economic growth of the affected economy. Furthermore, financial development in Nepal is instrumental in promoting financial inclusion. By expanding access to banking

services and credit facilities, it enables a broader segment of the population, including those in rural areas, to participate more actively in economic activities. This inclusivity contributes to reducing poverty, empowering individuals, and enhancing overall societal well-being.

Additionally, a developed financial sector enhances the efficiency of resource allocation, reduces information asymmetry, and encourages prudent risk management. It provides a conducive environment for both domestic and foreign investments, fostering economic stability and resilience. In the context of Nepal's economic growth, a focus on financial development is imperative to create a solid foundation for sustainable development, attracting investments, and fostering inclusive economic growth that benefits all strata of society.

1.2 Statement of the Problem

The role of financial development in economic growth is pivotal, acting as a catalyst for a nation's overall prosperity. Financial institutions, markets, and regulatory frameworks collectively form the backbone of a well-developed financial system, fostering economic growth through various channels. Firstly, an efficient banking sector facilitates the mobilization of savings and directs them towards productive investments, promoting capital accumulation. Additionally, vibrant capital markets enable businesses to access diverse sources of funding, fostering innovation and entrepreneurship. Insurance and risk management mechanisms provided by the financial sector also contribute to stability, encouraging investments and economic activities. Financial sector manages huge working capital, provides information and innovative ideas to the entrepreneurs, who including many new in the market, run the new entity, adds in output and employment, increases additional consumption and saving (Perera & Paudel, 2009; Shrestha, 2005).

A large section of the population can be included when the financial activities are physically accessible, procedures are easy and the cost of the finance is low (Pant, 2016). Enterprises and industries are the base of economic growth, which also depend on the financial system. Also, financial development helps to expand the economy, raise the income, reduces the poverty, and enhances economic growth. Moreover, a developed financial system enhances liquidity, reduces information asymmetry, and

improves the efficiency of resource allocation. Through these mechanisms, financial development not only supports existing businesses but also attracts foreign investment, contributing to the expansion and diversification of the economy. In essence, a robust financial system is indispensable for creating an environment conducive to sustained economic growth by facilitating the flow of capital, managing risks, and optimizing resource allocation. An inefficient financial system costs high, reduces the investment and shrinks the employment and output. In such case, it ultimately retards the economy (Shrestha, 2005).

Hence this study tries to answer the following research questions:

- What is the status of overall financial indicators in Nepal?
- Does the financial development impact on economic growth?

1.3 Objectives of the Study

The general objective of the is to assess the relationship between the economic growth and financial development of Nepal. The specific objectives of the study are:

- To examine the overall financial indicators in Nepal
- To analyze the impact of financial development on economic growth of Nepal.

1.4 Significance of the Study

The significance of the study lies in its potential to offer valuable insights and contribute substantially to various aspects of economic and policy discourse. Firstly, the study can provide a nuanced understanding of the specific dynamics between financial development and economic growth in the context of Nepal. By examining this relationship, policymakers, economists, and financial experts can gain insights into the mechanisms through which financial development influences the country's economic trajectory.

Secondly, the findings of the study can inform evidence-based policy formulation. Understanding how different dimensions of financial development impact economic growth can assist in crafting targeted policies and strategies to optimize the positive contributions of the financial sector. Policymakers can leverage these insights to

create an environment conducive to sustainable economic development, job creation, and poverty reduction in Nepal.

Additionally, the study's significance extends to the broader academic community. It can serve as a valuable resource for researchers, scholars, and students interested in the fields of finance, economics, and development studies. By contributing empirical evidence and analytical frameworks, the study can enrich the existing literature on the finance-growth nexus, especially within the specific context of a developing nation like Nepal.

Moreover, the study's significance is practical, as it may guide investors, financial institutions, and businesses in understanding the economic landscape of Nepal. Insights into the impact of financial development on economic growth can assist stakeholders in making informed decisions, allocating resources efficiently, and identifying potential areas for investment and collaboration.

In summary, the study's significance lies in its potential to inform policy decisions, enrich academic literature, and provide practical insights that can contribute to the sustainable economic development of Nepal.

1.5 Limitations of the Study

The limitations of the study are listed below:

- The study depends econometric modelling based on the secondary data rather than using primary source of data.
- For the proxy of financial development, only domestic credits was used.
- The secondary data are used for the period of 1975 to 2022

1.6 Organization of the Study

This study's report comprises five distinct chapters. The first chapter encompasses the introduction, research problem, objectives of the study, and the significance of the research. Moving on to the second chapter, it incorporates a comprehensive review of related literature, encompassing both conceptual and empirical reviews presented in chronological order. The third chapter outlines the research methodology, detailing the research design, sampling techniques, sample size determination, empirical design,

data analysis, presentation techniques, and the limitations of the study. Chapter four is dedicated to data presentation and analysis, structured in accordance with the study's objectives. Finally, the fifth chapter encapsulates a summary, conclusions, and recommendations derived from the study's findings. This sequential organization ensures a coherent and comprehensive exploration of the research study.

CHAPTER II

REVIEW OF LITERATURE

In this section, the literature related to the financial development, economic growth and effect of financial development on economic growth have been reviewed.

The literature review has been organized in the context of the national and international in the chronological order, in the descending order. In the review, the research paper of different researchers has been incorporated. The objectives of the study, methodology of the research and findings of the research work has been analyzed in the review.

2.1 Empirical Review

2.1.1 International Context

Le et al. (2023) investigated the influence of financial development on economic stability in Asian countries. The study assessed economic stability using proxies like growth stability, inflation stability, and exchange rate stability. Utilizing panel data from 22 Asian economies spanning 2011 to 2019 and employing Bayesian analysis, the findings revealed that financial development significantly affects the economic stability of these countries. Furthermore, the impact on economic stability varied depending on different indicators of financial development.

Abbas et al. (2022) explored the impact of financial development on economic growth and income distribution across lower-middle and upper-middle income countries, encompassing a total of 44 nations. The researchers employed a panel Autoregressive Distributed Lag model, analyzing data over a 23-year period from 1995 to 2018. The results indicated that financial development contributes to economic growth in both categories of countries over the long run. Notably, the contribution of financial development to economic growth was more pronounced in upper-middle income countries. Additionally, the Granger causality test, utilizing Vector Error Correction, revealed a two-way Granger causality between financial development and economic growth. The findings unveiled an inverted U-shaped relationship between financial

development and income inequality for both lower-middle income and upper-middle income countries.

Adekunle and Ayeni (2021) explored the relationship between the credit channels of financial sector development and economic growth in Nigeria, employing data from 1986 to 2018 and estimating it through the Autoregressive Distributed Lag technique. The findings indicated the presence of a long-term relationship between the credit channels of financial sector development and economic growth in Nigeria. The study discovered and concluded that credit to the core sector and credit to the government hinders economic growth in the short term, while credit to the core sector acts as a stimulant for economic growth in the long run.

Nayak (2020) examined dynamic interconnection between financial development and economic growth, utilizing savings as an intermediary variable in the context of India. The study utilized annual data spanning from 1970 to 2018. The findings unveiled the presence of a long-run cointegrating relationship between financial development and economic growth. The outcomes of the long-run Granger causality test indicated a unidirectional causal flow from economic growth to savings and financial development. Conversely, financial development was found to cause economic growth, but not through its impact on savings. The results of the short-run causality test demonstrated that economic growth Granger caused financial development, but there was no causal flow from financial development to economic growth. Furthermore, economic growth Granger caused savings, but the reverse causal relationship from savings to economic growth was not observed.

Rahman et al. (2020) investigated the influence of financial development on economic growth in Pakistan through the application of the Markov Switching Model during the period 1980–2017. The outcomes derived from the two-state Markov switching model affirmed Schumpeter's perspective, indicating that finance indeed stimulates growth. The findings revealed that financial development enhances economic growth in both high and low economic growth phases in Pakistan. Notably, the impact of financial development on economic growth was observed to be comparatively more significant during high-growth phases, suggesting that economic growth responds differently to financial development in low-growth and high-growth regimes.

Rossi and Scalise (2020) explored the correlation between financial development and economic growth within 110 European regions spanning the period from 1997 to 2018. The authors specifically focused on two aspects of financial development: the distribution density of bank branches and the concentration of the financial industry on a broader scale. Their investigation delved into the relationship between these dimensions and regional economic growth. Employing two-ways fixed effects, instrumental variables, and the Arellano–Bond estimator to establish causality, the study's estimates indicated that the predominant factor influencing regional economic growth was the concentration of a sophisticated financial sector, rather than the mere presence of bank branches.

Guru and Yadav (2019) investigated the relation between economic growth and financial development in the major emerging economies of Brazil, Russia, India, China, and South Africa (BRICS) from 1993 to 2014. The research employed generalized method of moment system estimation, utilizing indicators of banking sector and stock market development. Key indicators in the banking sector included the size of financial intermediaries, credit to deposit ratio, and domestic credit to the private sector. Meanwhile, stock market development was assessed through indicators such as the value of shares traded and turnover ratio. The study also incorporated macroeconomic control variables like inflation, exports, and secondary education enrollment. The findings indicated a positive and significant association between credit to deposit ratio, credit to private sector, and economic growth, underscoring the importance of banking sector and stock market development indicators in fostering economic growth.

Menyari (2019) investigated and assessed the influence of financial development and foreign bank penetration on African economies. The empirical study, covering the period 1995–2015, employed the system GMM estimator. The findings revealed that the entry of foreign banks had a positive and significant impact on economic growth in North and Southern African countries. Conversely, in the West and Central Africa, as well as East Africa, the impact was predominantly negative and rarely significant. Furthermore, the study results indicated that the positive and significant effect of financial market development on economic growth was observed solely in the Southern African region.

Yang (2018) investigated the influence of financial development on economic growth within middle-income countries. The study assessed the contribution of financial development to cross-sectional variations in economic growth between 1970 and 2016, focusing on three distinct economies: Chengdu and Chiang Mai in China and Thailand, respectively. Yang integrated models and methodologies from prior research in conducting the analysis. The findings indicated a substantial contribution of financial development to economic growth, mediated through channels such as physical capital stock and total factor productivity. Moreover, the study observed a reverse causality between economic growth and equity market development in high-income economies.

Mahmood (2013) examined the impact of financial development on the economic growth of Pakistan spanning from 1979 to 2008, employing the auto regressive distributed lag model. The study utilized real gross domestic product as the dependent variable, with financial depth evaluation, real deposit rate, and investment as a percentage of gross domestic product as independent variables. Financial sector development indicators encompassed the ratio of private sector credit to GDP, the ratio of banking deposit liabilities to GDP, and the ratio of private sector credit in domestic credit. The results indicated a positive association between economic growth and the real deposit rate in the long run, although its impact was deemed insignificant. Furthermore, both short-term and long-term responses of real interest rates were comparatively low in comparison to the variable of financial development.

Rosalia (2013) investigated the influence of financial development on economic growth in both Latin America and the developed countries of the OECD. The analysis involved growth equations that incorporated two distinct financial development indicators, estimated through the fixed effects model and its extension incorporating instrumental variables. The study covered the time period from 1980 to 2011, with economic growth measured by the growth rates of real GDP per capita and real GNI per capita. The first financial development indicator was the growth rate of the ratio of broad money to GDP, while the second was the growth rate of the ratio of domestic credit to the private sector to GDP. The results from the fixed effects models revealed no substantial evidence of the impact of financial development on economic growth in these countries. However, the ratio of domestic credit to the private sector to GDP

exhibited a positive relationship with economic growth, while the ratio of broad money to GDP showed a negative relationship with economic growth.

Masoud and Hardakar (2012) investigated the influence of financial development on the economic growth of 42 emerging markets over a 12-year period, employing an endogenous growth model from 1995 to 2006. The authors employed eight different models to scrutinize the impact of financial development on growth. The findings revealed a noteworthy positive effect of stock market development on economic growth. This impact remained robust even after considering the influence of the banking sector and other control variables within a growth model. Additionally, the results indicated a long-term relationship between stock market development and economic development.

2.1.2 National Context

Maharjan (2020) investigated the empirical connection between financial development and economic growth in Nepal. Financial development was gauged through three primary variables representing the financial system: banks, capital markets, and insurance. Economic growth indicators included gross domestic product (GDP) and gross fixed capital formation. Employing time series techniques, the study first assessed the stationary properties of the datasets, followed by the Johansen co-integration test to observe the long-run equilibrium relationship between the financial development variables and economic growth. The Granger Causality test was then applied to identify causal relationships among the variables. Furthermore, a Vector Error Correction Model (VECM) was utilized to analyze the short-run dynamics of the system. The research revealed cointegrating relationships between market capitalization and economic development, insurance market and economic development, as well as banking sector development and economic development.

Paudel and Acharya (2020) investigated the interplay between financial development and economic growth in Nepal, utilizing the Autoregressive Distributed Lag (ARDL) approach of cointegration. The study employed time series data spanning from 1965 to 2018. The researchers constructed a model incorporating five indicators of financial development which were broad money, domestic credit to the private sector, total credit from the banking sector, capital formation, and foreign direct investment, and

assessed their contributions to economic growth using econometric model. The overall findings indicated a significant positive impact of financial development on economic growth, with the exception of the case involving foreign direct investment.

Pant's (2016) examined policy measures concerning financial inclusion in Nepal, it was revealed that a substantial portion of these measures faced challenges in execution, attributed to issues such as insufficient financial literacy, a lack of infrastructure, and inadequate technological facilities. In response, the study proposed recommendations to augment financial inclusion, encompassing initiatives like the promotion of financial literacy programs, introduction of digital financial services, the development of a National Financial Inclusion Strategy, the implementation of a Financial Inclusion Roadmap, and the assignment of a distinct role to microfinance institutions, among others.

Gautam (2015) investigated the impact of financial development on the economic growth of Nepal spanning the period from 1975 to 2012. The study employed Augmented Dickey-Fuller and Philips-Perron tests to assess the presence of unit root, conducted a Co-integration test to explore the long-run relationship, and utilized Granger Causality test to identify causal connections. The Vector Error Correction Method was applied to ascertain the speed of adjustment and the dynamics of the relationship. The empirical findings affirmed that financial development plays a causal role in driving economic growth. Specifically, the study revealed that in terms of short-term dynamics, financial development influences economic growth, while in the long run, economic growth sustains financial development.

2.2 Research Gap

Existing literature provides valuable insights into the relationship between financial development and the economic growth of nations. Numerous studies highlight the interconnectedness of financial development and economic growth. Nayak's (2020) research suggests that while economic growth influences financial development, there is no clear causality from financial development to economic growth. Rossi and Scalise's (2020) study indicates that the mere presence of bank branches is insufficient to drive economic growth. Guru and Yadav (2019) underscore the significant role of the stock market in fostering economic growth. Additionally, Rosalia (2013)

demonstrates that domestic credit to the private sector positively impacts GDP. Despite these findings, there is a notable gap in research concerning the combined impact of financial development and government expenditure on economic growth in Nepal. Moreover, existing studies often focus on financial indicators other than the loans and advances provided by banking and financial institutions. Research in this area remains limited and scarce, particularly in the context of Nepal.

CHAPTER III

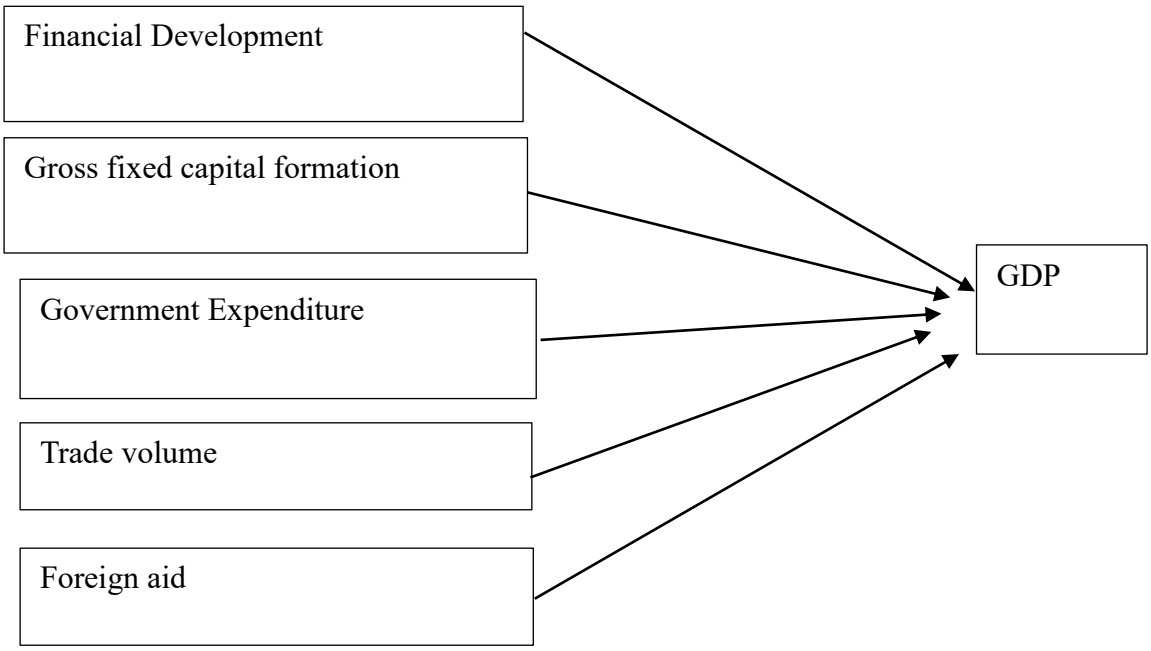
RESEARCH METHODOLOGY

This section of the research outlines the chosen methodology, encompassing the conceptual framework, data sources, time span for data collection, unit root test, and the empirical model.

3.1 Conceptual Framework

Drawing upon the literature reviewed in Chapter II, a conceptual framework has been developed.

Figure 3.1: Conceptual Framework



Source: Based on literature survey

3.2 Research Design

This study has utilized the descriptive research design to examine the financial development and economic growth of Nepal. Causal comparative research design had been employed to examine the impact of financial development in economic growth of Nepal.

3.3 Sources of Data

The study relied on secondary data obtained from the Ministry of Finance (MOF) and Nepal Rastra Bank (NRB). The time series data spanned from 1975 to 2022.

The data underwent a process of rebasing to a common base year. Real data was derived by dividing nominal data by the GDP deflator. To facilitate the analysis and address potential econometric issues, the data were transformed into logarithmic form. This logarithmic representation simplified the analysis of the data.

3.4 Unit Root Test

Macroeconomic variables tend to exhibit trends in the long run, either drifting upward or downward. When regressed without accounting for these trends, the results may yield spurious outcomes, characterized by a high R^2 value and a low Durbin-Watson (DW) statistic (Asteriou & Hall, 2007). Therefore, it is imperative to assess the presence of unit roots for each variable before applying a regression model.

Several methods can be employed for unit root testing, including the Augmented Dickey-Fuller (ADF) test, Dickey-Fuller GLS test, Phillips-Perron test, Kwiatkowski-Phillips-Schimdt-Shin test, Elliot-Rottenberg-Stock Point-Optimal test (ERS), and Ng-Perron test. In this study, the ADF test was utilized to examine the existence of unit roots in the variables.

The general equations for the ADF test, as per the approach of Asteriou and Hall (2007), are as follows:

Case I: No intercept and no trend

$$\Delta Y_t = \gamma Y_{t-1} + \sum_{i=1}^{p} \beta_i \Delta Y_{t-1} + \mu_t \quad \ldots\ldots\ldots\ldots\ldots (1)$$

Here, Yt represents a time series variable, p denotes the lag order of the autoregressive process, and μt signifies a pure white noise error term.

The null hypothesis for the Augmented Dickey-Fuller t-test is:

Ho: $\gamma = 0$ (the series contains a unit root)

H1: $\gamma < 0$ (indicating that the data is stationary and does not require differencing)

If the calculated Dickey-Fuller statistic is more negative than the critical (theoretical) values for the test, the null hypothesis is rejected.

Case II: Intercept but no trend

$$\Delta Y_t = \alpha_0 + \gamma Y_{t-1} + \sum_{i=1}^{p} \beta_i \Delta Y_{t-1} + \mu_t \ldots\ldots\ldots\ldots\ldots\ldots (2)$$

where Y_t is a time series variable, α_0 is a constant, p the lag order of the autoregressive process and μ_t is a pure white noise error term.

The null hypothesis of the Augmented Dickey-Fuller t-test is

Ho: $\gamma = 0$ (series contains a unit root)

H1: $\gamma < O$ (the data is stationary and doesn't need to be differenced)

If the computed Dickey-Fuller statistic is more negative than the test critical (theoretical) values, the hull hypothesis is rejected.

Case III: Intercept and trend

$$\Delta Y_t = \alpha_0 + \alpha_2 t + \gamma Y_{t-1} + \sum_{i=1}^{p} \beta_i \Delta Y_{t-1} + \mu_t \ldots\ldots\ldots\ldots\ldots (3)$$

where Y_t is a time series variable, α_0 is a constant, α_2 the coefficient on a time trend (t), p the lag order of the autoregressive process and μ_t is a pure white noise error term.

The null hypothesis of the Augmented Dickey-Fuller t-test is

Ho: $\gamma = 0$ (series contains a unit root)

H1: $\gamma < O$ (the data is stationary and doesn't need to be differenced)

If the computed Dickey-Fuller statistic is more negative than the test critical (theoretical) values, the hull hypothesis is rejected.

3.5 Empirical Design

In this research, economic growth served as the dependent variable, represented by the gross domestic product (GDP). The independent variables encompass loans and advances of banking and financial institutions, incorporating commercial banks, development banks, and finances (LA), gross fixed capital formation (GFCF), government expenditure (GE), export (E), and foreign aid (FA).

Therefore, the analytical model is formulated as:

GDP = f(LA, GFCF, GE, E, FA)

The econometric model was applied through the unit root test.

3.6 Cointegration: ARDL Bounds Test

The study utilizes the ARDL bounds test to examine the impact of loans and advances, government expenditure, gross fixed capital formation, exports, and foreign aid on economic growth. The ARDL regression process involves two stages: first, assessing the presence of a long-run relationship using F-statistics to test for cointegration, and second, estimating parameters for both the long run and short run using the ARDL approach. Prior to implementing the ARDL model in software like Eviews 10, determining the optimal lag length is essential, which can be achieved through criteria such as the Akaike Information Criterion (AIC), Schwartz Information Criterion (SC), or Hannan-Quinn Criterion (HQC). In this study, the Akaike Information Criterion has been employed for selecting the optimal lag length.

To model the determinants of economic growth, GDP is regressed on the aforementioned variables, all of which are logged. The core model used to estimate the determinants of economic growth in the Nepalese economy is specified as follows:

$$lnGDP_t = a + b_1 \, ln \, LA_t + b_2 \, ln \, GFCF_t + b_3 \, ln \, GE_t + b_4 \, ln \, E_t + b_5 \, ln \, FA_t + error$$

Where,

ln GDP_t Gross domestic product expressed in logarithm

$\ln LA_t$ Loan and advances made by BFIs

$\ln GFCF_t$ Gross fixed capital formation

$\ln GE_t$ Government expenditure

$\ln E_t$ Export

$\ln FA_t$ Foreign aid

ARDL representation of unrestricted version is specified below in equation (3.16)

$$\Delta lnGDP_t = \mu + \sum_{i=0}^{m} \eta_i \Delta lnLA_{t-1} + \sum_{i=0}^{n} \omega_i \Delta \ln GFCF_{t-i} + \sum_{i=0}^{p} \varphi_i \Delta \ln GE_{t-i} + \sum_{i=0}^{q} \pi_i \Delta \ln E_{t-i} + \sum_{i=0}^{r} \alpha_i \Delta \ln FA_{t-i} + \theta_1 lnGDP_{t-1} + \theta_2 \ln LA_{t-i} + \theta_3 \ln GFCF_{t-i} + \theta_4 \ln GE_{t-i} + \theta_5 \ln E_{t-i} + \theta_5 \ln FA_{t-i} + u_t$$

Where Δ denotes first difference operator, μ is the intercept term, and u_t is the usual white noise residuals.

The equation presented embodies an ARDL model that integrates short-term dynamics with long-term equilibrium while preserving essential information pertinent to the long run. Long-run coefficients are derived from the model estimated initially by dividing the coefficients of the one-period lagged explanatory variables (multiplied by a negative sign) by the coefficients of the lagged dependent variables. This calculation establishes the relationship between explanatory variables and the dependent variable over the long run, capturing sustained equilibrium dynamics (Akinboade et al., 2008). Therefore, coefficients ($\theta 1$ to $\theta 5$) denote the long-run relationship, while the remaining terms indicated by the summation sign (coefficients ηi, ωi, ϕi, πi) represent the short-run dynamics of the model.

3.7 Diagnostic Test

The theoretical foundation for this diagnostic test is derived from Asteriou and Hall (2007).

3.7.1 Normality Test

To assess the normality of residuals, the Jarque-Bera test was employed and is expressed as:

$$JB = \frac{N}{6}\left(S^2 + \frac{(K-3)^2}{4}\right)$$

Where,

JB = Jarque-Bera Statistics

S = Skewness

K = Kurtosis

For the decision making, if JB > χ^2, then null hypothesis of normality of residual is not accepted.

3.7.2 Ramsey's RESET Test

The RESET (Ramsey Regression Equation Specification Error Test) is a comprehensive specification test for the linear regression model. The rationale behind the test is that if nonlinear combinations of the explanatory variables contribute significantly to explaining the response variable, the model is deemed misspecified. A rejection of the null hypothesis occurs when the F-statistic surpasses the F-critical value, indicating a lack of correct specification.

3.7.3 Breusch-Godfrey Serial Correlation LM Test

Serial correlation is identified when error terms from distinct time periods exhibit correlation. This phenomenon occurs in time-series studies when errors associated with a specific time period extend into subsequent time periods. To identify serial correlation in the model, the Breusch-Godfrey serial correlation LM test was employed. The null hypothesis, suggesting no serial correlation, is rejected if the LM statistic surpasses the upper α critical value of a chi-squared distribution.

3.7.4 Breusch-Pagan-Godfrey Heteroscedasticity Test

In statistics, heteroscedasticity arises when the variance of the predicted variable across different values of an independent variable is not constant. Regression analysis with heteroscedastic data still yields an unbiased estimate for the relationship between the predictor variable and the outcome. However, the standard errors and consequently the inferences drawn from data analysis become questionable. Biased standard errors can lead to distorted inferences, potentially resulting in incorrect hypothesis test outcomes. In this study, the Breusch-Pagan-Godfrey test was utilized to examine the presence of heteroscedasticity. If the p-value is less than 0.05, the null hypothesis of no serial correlation is rejected.

3.7.5 CUSUM Test

The CUSUM test relies on the cumulative sum of the recursive residuals. This procedure involves plotting the cumulative sum along with the 5% critical lines. Parameter instability is detected if the cumulative sum falls outside the region delineated by the two critical lines.

3.7.6 CUSUM of Square Test

Similar to the CUSUM test, deviation beyond the critical lines indicates potential parameter or variance instability. The cumulative sum of squares typically falls within the 5% significance lines, indicating relative stability in residual variance.

3.8 Data Processing Techniques

The time series are computed in real values by dividing nominal figures by the GDP deflator. The data was then be input into Eviews 10 to generate the necessary output.

3.9 Methodology Matrix

S.N.	Objectives	Hypothesis	Tools of Analysis	Sources of Data
1	To assess the policies that aim to promote the financial development in Nepal	-	Descriptive analysis	Secondary sources. Policies relating to financial development in Nepal
1	To examine the overall financial indicators in Nepal	-	Descriptive statistics	Secondary data Nepal Rastra Bank (NRB)
2	To analyze the impact of financial development on economic growth of Nepal	Financial development has negative impact on the total factor productivity	Unit root test was used to check the stationarity of the variables and regression analysis was employed to examine effects of explanatory variables on the dependent variables. Various diagnostic tools were employed to examine the fitness of regression model	Secondary data was collected from website of NRB and MOF.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

This chapter delves into the core findings of this study, presenting a detailed examination of the gathered data and their implications. This chapter provides a comprehensive analysis of the data collected, offering insights into key trends, patterns, and relationships among variables explored in the research. By meticulously presenting and interpreting the data, this section aims to uncover significant findings that contribute to a deeper understanding of the research questions and objectives. Through rigorous analysis and interpretation, the chapter aims to shed light on the complexities of the study topic, providing valuable insights that pave the way for informed conclusions and recommendations.

4.1 Financial Indicators of Nepal

The section provides a comprehensive overview of the key economic metrics that gauge the financial health and performance of Nepal's economy.

4.1.1 Number of Banking and Financial Institutions in Nepal

Table 4.1 shows the number of Bank and Financial Institutions (BFIs) in Nepal across various categories—Commercial Banks, Development Banks, Finance Companies, and Microfinance Institutions—over the fiscal years from 2011 to 2023. The table also provides the total number of BFIs for each fiscal year.

In 2011, there were 31 commercial banks, 87 development banks, 79 finance companies, and 21 microfinance institutions, totaling 218 BFIs. This was the highest total number of BFIs in the period under review.

Over the subsequent years, there has been a noticeable decline in the number of development banks and finance companies. Development banks decreased from 87 in 2011 to 17 in 2023, and finance companies saw a reduction from 79 in 2011 to 17 in 2023. This reduction indicates a consolidation trend in these sectors, possibly due to mergers, acquisitions, or regulatory changes aiming for a more robust and efficient banking sector.

Table 4. 1

Number of BFIs in Nepal

Fiscal Year	Commercial banks	Development banks	Finance	Microfinance	Total
2011	31	87	79	21	218
2012	32	88	70	24	214
2013	31	86	59	31	207
2014	30	84	53	37	204
2015	30	76	48	38	192
2016	28	67	42	42	179
2017	28	40	28	53	149
2018	28	33	25	65	151
2019	28	29	23	90	170
2020	27	20	22	85	154
2021	27	18	17	70	132
2022	26	17	17	65	125
2023	20	17	17	57	111

Source: Nepal Rastra Bank, 2024

Conversely, the number of microfinance institutions generally increased over the same period. Starting with 21 in 2011, the number peaked at 90 in 2019 before declining slightly to 57 by 2023. This growth reflects the increasing focus on financial inclusion and the role of microfinance in providing financial services to underserved populations in Nepal.

Commercial banks maintained a relatively stable number, fluctuating slightly but remaining around 28 banks for most of the years. However, a slight decrease is observed, with the number dropping to 20 by 2023.

The total number of BFIs shows a general downward trend from 218 in 2011 to 111 in 2023. The most significant declines occurred after 2015, where the total number decreased from 192 in 2015 to 149 in 2017 and further to 111 in 2023. This overall reduction aligns with the observed decreases in development banks and finance companies, suggesting a sector-wide consolidation effort.

In summary, the table indicates a significant consolidation in Nepal's banking and financial sector over the past decade, with a marked decrease in development banks and finance companies, a relatively stable number of commercial banks, and fluctuating numbers of microfinance institutions. This trend reflects broader

regulatory and economic strategies aimed at strengthening the financial system in Nepal.

4.1.2 Number of Commercial Banks in Nepal Province Wise

Table 4.2 presents the distribution of commercial bank branches across different provinces in Nepal from 2018 to 2023, along with the average number of branches over these years.

Table 4. 2

Province Wise Branches of Commercial Banks

Province	2018	2019	2020	2021	2022	2023	Average
Koshi	486	585	687	728	763	762	669
Madhesh	359	421	514	549	572	578	499
Bagmati	1031	1238	1553	1664	1807	1824	1520
Gandaki	345	396	555	577	599	601	512
Lumbini	452	530	657	726	740	748	642
Karnali	151	159	177	192	199	206	181
Farwest	199	256	293	317	329	330	287
Grand Total	3023	3585	4436	4753	5009	5049	4309

Source: Nepal Rastra Bank, 2024

Koshi Province:

In Koshi Province, the number of commercial bank branches increased steadily from 486 in 2018 to a peak of 763 in 2022, before slightly declining to 762 in 2023. The average number of branches over this period is 669, indicating significant growth and a strong banking presence in this province.

Madhesh Province:

Madhesh Province saw a consistent rise in the number of bank branches, starting from 359 in 2018 and reaching 578 by 2023. The average number of branches in Madhesh Province during these years is 499, reflecting steady expansion in banking services to cater to the region's needs.

Bagmati Province:

Bagmati Province had the highest number of commercial bank branches across all provinces. The number increased from 1,031 in 2018 to 1,824 in 2023. The average number of branches over this period is 1,520, demonstrating a robust and rapidly growing banking sector, likely driven by the province's economic significance and urbanization.

Gandaki Province:

In Gandaki Province, the number of branches increased from 345 in 2018 to 601 in 2023. The average number of branches during these years is 512, indicating a notable expansion in banking services, which supports the economic activities in the province.

Lumbini Province:

Lumbini Province experienced a rise in bank branches from 452 in 2018 to 748 in 2023. The average number of branches is 642, showcasing considerable growth in the banking infrastructure to meet the increasing demand for financial services.

Karnali Province:

Karnali Province had a smaller number of branches compared to other provinces but still saw growth from 151 in 2018 to 206 in 2023. The average number of branches over these years is 181, reflecting gradual development in the banking sector within this province, which may be influenced by its geographical and socio-economic conditions.

Farwest Province:

Farwest Province also experienced growth in the number of bank branches, increasing from 199 in 2018 to 330 in 2023. The average number of branches is 287, indicating ongoing efforts to enhance financial inclusion and access to banking services in this province.

Overall Trends:

The grand total of commercial bank branches across all provinces increased from 3,023 in 2018 to 5,049 in 2023, with an average of 4,309 branches over these years. This overall upward trend highlights the significant expansion of the banking network across Nepal, aiming to improve financial accessibility and support economic development throughout the country.

4.1.3 Number of Development Banks in Nepal Province Wise

Table 4.3 provides data on the number of branches of development banks across different provinces in Nepal from 2018 to 2023, along with the average number of branches over these years.

Table 4. 3

Province Wise Branches of Development Banks

Province	2018	2019	2020	2021	2022	2023	Average
Koshi	135	183	165	177	194	194	175
Madhesh	56	94	69	79	84	82	77
Bagmati	258	335	275	295	321	332	303
Gandaki	219	253	179	182	190	190	202
Lumbini	264	317	262	227	256	257	264
Karnali	10	20	17	17	21	21	18
Farwest	51	65	62	46	52	52	55
Grand Total	993	1267	1029	1023	1118	1128	1093

Source: Nepal Rastra Bank, 2024

Koshi Province:

Koshi Province saw an increase in the number of development bank branches, starting from 135 in 2018 and reaching 194 in both 2022 and 2023. The average number of branches over these years is 175. This trend indicates steady growth in banking infrastructure to support regional economic activities.

Madhesh Province:

In Madhesh Province, the number of development bank branches rose from 56 in 2018 to a peak of 94 in 2019 before stabilizing around 82 in 2023. The average number of branches during these years is 77, reflecting moderate growth and expansion of banking services in the province.

Bagmati Province:

Bagmati Province consistently had the highest number of development bank branches among all provinces. The number of branches increased from 258 in 2018 to 332 in 2023. The average number of branches over these years is 303, highlighting the province's substantial banking network, likely driven by its economic prominence and higher population density.

Gandaki Province:

Gandaki Province experienced fluctuations in the number of branches, starting at 219 in 2018, peaking at 253 in 2019, and then decreasing to 190 by 2023. The average number of branches is 202, indicating some variability but overall a significant presence of development banks to support the local economy.

Lumbini Province:

Lumbini Province saw a rise from 264 branches in 2018 to a peak of 317 in 2019, followed by a slight decrease to 257 in 2023. The average number of branches is 264, showing consistent support from development banks in the province, even with minor year-to-year variations.

Karnali Province:

Karnali Province had the fewest development bank branches, starting at 10 in 2018 and increasing to 21 in both 2022 and 2023. The average number of branches is 18, reflecting gradual improvement in banking services in a region known for its challenging geography and lower population density.

Farwest Province:

Farwest Province showed some fluctuations, with the number of branches increasing from 51 in 2018 to 65 in 2019, and then stabilizing around 52 in 2023. The average number of branches is 55, indicating a steady but modest banking presence.

Overall Trends:

The grand total of development bank branches across all provinces increased from 993 in 2018 to 1,128 in 2023, with an average of 1,093 branches over these years. The data reflects a trend of overall growth in the number of development bank branches in Nepal, indicating an expanding network aimed at improving financial access and supporting economic development across various regions of the country.

4.1.4 Number of Finance Companies in Nepal Province Wise

Table 4.4 outlines the distribution of branches of finance companies across different provinces in Nepal from 2018 to 2023, along with the average number of branches over this period.

Table 4. 4

Province Wise Branches of Finance Companies

Province	2018	2019	2020	2021	2022	2023	Average
Koshi	38	39	45	25	32	36	36
Madhesh	18	23	31	25	38	51	31
Bagmati	72	77	92	95	106	106	91
Gandaki	24	28	29	33	36	37	31
Lumbini	28	30	36	35	46	46	37
Karnali	4	4	4	3	3	3	4
Farwest	2	3	6	6	6	5	5
Grand Total	186	204	243	222	267	284	234

Source: Nepal Rastra Bank, 2024

Koshi Province:

Koshi Province shows fluctuations in the number of finance company branches, starting with 38 in 2018 and ending with 36 in 2023. The peak was 45 branches in 2020, but the numbers decreased afterward. The average number of branches over these years is 36, indicating a relatively stable presence of finance companies in the region.

Madhesh Province:

Madhesh Province experienced significant growth in the number of finance company branches, increasing from 18 in 2018 to 51 in 2023. The average number of branches during these years is 31, reflecting robust expansion and a growing demand for financial services in the province.

Bagmati Province:

Bagmati Province consistently had the highest number of finance company branches among all provinces. The branches increased from 72 in 2018 to 106 in both 2022 and 2023. The average number of branches over these years is 91, indicating a strong and expanding network of finance companies in the province, likely due to its economic activity and higher population density.

Gandaki Province:

Gandaki Province saw a steady increase in the number of finance company branches, from 24 in 2018 to 37 in 2023. The average number of branches is 31, showing continuous growth and an expanding financial services sector in the region.

Lumbini Province:

Lumbini Province also witnessed growth, with branches rising from 28 in 2018 to 46 in both 2022 and 2023. The average number of branches is 37, reflecting a consistent increase in the availability of finance company services in the province.

Karnali Province:

Karnali Province had the fewest branches of finance companies, remaining relatively unchanged with four branches from 2018 to 2020 and then stabilizing at three branches from 2021 to 2023. The average number of branches over these years is 4, indicating limited growth in the finance company sector, possibly due to the region's geographical and economic challenges.

Farwest Province:

Farwest Province had minimal but increasing numbers of finance company branches, starting with two in 2018 and peaking at six in 2020, 2021, and 2022, before slightly dropping to five in 2023. The average number of branches is 5, showing a modest yet growing presence of finance companies.

Overall Trends:

The grand total of finance company branches across all provinces rose from 186 in 2018 to 284 in 2023, with an average of 234 branches over these years. This overall increase indicates a positive trend in the growth and expansion of finance companies in Nepal, enhancing financial accessibility and services across various regions of the country. The most significant growth was observed in Madhesh and Bagmati provinces, suggesting a concentrated effort to expand financial services in these areas.

4.1.5 Deposits of Commercial Banks of Nepal

Table 4.5 presents data on the deposits of commercial banks in Nepal from the fiscal year 2011 to 2023, categorized into Current Deposits, Saving Deposits, and Fixed Deposits, with the total amount provided for each year. The amounts are in NPR millions.

Table 4. 5:
Deposits of Commercial Banks of Nepal

Amount in NPR millions

Fiscal Year	Current Deposit	Saving Deposit	Fixed Deposit	Total
2011	79,553	230,693	252,137	562,383
2012	94,609	304,712	297,626	696,947
2013	110,591	358,805	345,642	815,037
2014	128,153	450,769	365,550	944,472
2015	157,623	559,351	417,355	1,134,330
2016	183,318	698,691	523,231	1,405,240
2017	203,158	703,028	879,822	1,786,008
2018	254,536	811,667	1,068,862	2,135,064
2019	306,733	901,296	1,280,460	2,488,489
2020	395,000	1,087,517	1,633,374	3,115,891
2021	481,370	1,426,354	1,896,159	3,803,882
2022	458,692	1,261,714	2,439,040	4,159,446
2023	444,101	1,366,476	2,901,728	4,712,305
Average	253,649	781,621	1,100,076	2,135,346

Source: Nepal Rastra Bank, 2024

Current deposits have shown a steady increase over the years, starting from NPR 79,553 million in 2011 and reaching NPR 444,101 million in 2023. The average amount of current deposits over this period is NPR 253,649 million. This consistent growth reflects an increasing volume of transactional and business accounts held by commercial banks.

Saving deposits have also experienced significant growth. From NPR 230,693 million in 2011, the amount rose to NPR 1,366,476 million in 2023. The average amount of saving deposits over these years is NPR 781,621 million. This trend indicates a growing preference for saving accounts among individuals and businesses, driven by increasing financial inclusion and banking penetration.

Fixed deposits have seen the most dramatic increase. The amount was NPR 252,137 million in 2011 and surged to NPR 2,901,728 million in 2023. The average amount of fixed deposits during this period is NPR 1,100,076 million. This substantial growth suggests a rising inclination towards long-term savings and investments in fixed deposit schemes, likely influenced by attractive interest rates and economic stability.

The total deposits of commercial banks have grown significantly over the period. Starting at NPR 562,383 million in 2011, the total deposits reached NPR 4,712,305 million in 2023. The average total deposits over these years are NPR 2,135,346 million. This overall growth indicates robust expansion in the banking sector, increased public trust in banking institutions, and overall economic growth.

There is a consistent upward trend in current, saving, and fixed deposits, reflecting overall economic growth and increased banking activity in Nepal. A noticeable acceleration in the growth of deposits occurred after 2015, particularly in fixed deposits, which saw a substantial increase in their annual amounts. Fixed deposits experienced the most pronounced growth among the three categories, indicating a trend towards long-term savings and stability in the banking sector. While the general trend is upward, there are minor fluctuations, such as a slight dip in saving deposits in 2022, reflecting changing economic conditions and possibly interest rate adjustments.

Overall, the data demonstrates a strong and growing deposit base in Nepal's commercial banking sector, driven by increased economic activity, greater financial inclusion, and evolving savings behaviors among the population.

4.1.6 Deposits of Development Banks of Nepal

Table 4.6 presents data on the deposits of development banks in Nepal from the fiscal year 2011 to 2023, categorized into Current Deposits, Saving Deposits, and Fixed Deposits, with the total amount provided for each year. The amounts are in NPR millions.

In 2011, the development banks in Nepal held NPR 2,200 million in current deposits, which increased to NPR 11,082 million by 2023. The average amount of current deposits over this period is NPR 7,136 million. This steady increase signifies a growing volume of transactional and business accounts in development banks, indicating enhanced trust and engagement from account holders.

Table 4. 6

Deposits of Development Banks of Nepal

Amount in NPR millions

Fiscal Year	Current Deposit	Saving Deposit	Fixed Deposit	Total
2011	2,200	42,940	30,339	75,479
2012	3,315	60,767	37,178	101,261
2013	3,155	82,946	45,028	131,128
2014	4,341	108,358	55,395	168,094
2015	5,614	120,641	62,213	188,468
2016	7,276	143,419	68,222	218,918
2017	5,598	92,788	88,673	187,060
2018	7,405	114,736	124,816	246,957
2019	9,552	135,366	178,880	323,797
2020	9,346	113,123	187,416	309,885
2021	13,948	140,720	243,409	398,077
2022	9,937	120,609	327,125	457,670
2023	11,082	132,843	380,579	524,503
Average	7,136	108,404	140,713	256,254

Source: Nepal Rastra Bank, 2024

Saving deposits have shown a significant upward trend as well. From NPR 42,940 million in 2011, the saving deposits rose to NPR 132,843 million in 2023. The average amount of saving deposits over these years is NPR 108,404 million. This growth reflects a rising preference for saving accounts among customers, driven by an increased emphasis on financial inclusion and the availability of attractive saving schemes.Fixed deposits have seen the most substantial growth among the three categories. The amount of fixed deposits was NPR 30,339 million in 2011 and soared to NPR 380,579 million in 2023. The average fixed deposits during this period are

NPR 140,713 million. This dramatic increase indicates a significant shift towards long-term savings and investment, likely fueled by favorable interest rates and a stable economic environment.

The total deposits of development banks have grown markedly over the years. Starting at NPR 75,479 million in 2011, the total deposits reached NPR 524,503 million in 2023. The average total deposits over these years are NPR 256,254 million. This robust growth demonstrates the expanding role of development banks in the financial sector, their increasing appeal to depositors, and their contribution to the overall economic development of Nepal.

Throughout the period, all categories of deposits have shown consistent growth, with notable accelerations in certain years. For instance, there was a significant jump in total deposits between 2019 and 2020, followed by further substantial increases in subsequent years. Fixed deposits, in particular, saw major increases, underscoring a trend towards more stable and long-term financial planning among the depositors.

In summary, the data reflects a strong and increasing deposit base in Nepal's development banking sector, driven by greater economic activity, improved financial services, and evolving savings behaviors among the population. The overall upward trend across current, saving, and fixed deposits indicates growing confidence in development banks and their expanding role in the country's financial landscape.

4.1.7 Deposits of Finance Companies of Nepal

Table 4.7 presents the deposits of finance companies in Nepal from fiscal year 2011 to 2023, categorized into Current Deposit, Saving Deposit, and Fixed Deposit, with the total amount of deposits for each year listed in NPR millions.

In 2011, the total deposits amounted to NPR 79,505 million, with Current Deposits at NPR 3,365 million, Saving Deposits at NPR 30,253 million, and Fixed Deposits at NPR 45,886 million. The following year, 2012, saw a slight decrease in total deposits to NPR 74,710 million, despite an increase in Current Deposits to NPR 4,485 million and Saving Deposits to NPR 34,159 million, as Fixed Deposits fell to NPR 36,066 million.

In 2013, the total deposits further decreased to NPR 67,237 million, with Current Deposits at NPR 5,410 million, Saving Deposits at NPR 28,930 million, and Fixed Deposits at NPR 32,896 million. The year 2014 showed a modest recovery, with total

deposits rising to NPR 70,962 million, driven by Current Deposits at NPR 5,825 million, Saving Deposits at NPR 31,185 million, and Fixed Deposits at NPR 33,953 million.

The year 2015 saw a slight decrease in total deposits to NPR 70,732 million, with Current Deposits at NPR 5,427 million, Saving Deposits at NPR 33,755 million, and Fixed Deposits at NPR 31,550 million. In 2016, total deposits further declined to NPR 61,575 million, with a decrease in all categories: Current Deposits at NPR 4,543 million, Saving Deposits at NPR 32,047 million, and Fixed Deposits at NPR 24,986 million.

Table 4. 7

Deposits of Finance Companies of Nepal

Amount in NPR millions

Fiscal Year	Current Deposit	Saving Deposit	Fixed Deposit	Total
2011	3,365	30,253	45,886	79,505
2012	4,485	34,159	36,066	74,710
2013	5,410	28,930	32,896	67,237
2014	5,825	31,185	33,953	70,962
2015	5,427	33,755	31,550	70,732
2016	4,543	32,047	24,986	61,575
2017	4,372	18,445	25,198	48,014
2018	3,975	20,425	34,513	58,913
2019	6,155	23,681	39,671	69,508
2020	4,294	23,816	49,766	77,877
2021	2,871	25,935	50,529	79,334
2022	3,730	19,853	71,745	95,329
2023	2,973	19,538	80,130	102,641
Average	4,417	26,309	42,838	73,564

Source: Nepal Rastra Bank, 2024

In 2017, the total deposits fell sharply to NPR 48,014 million, with Current Deposits at NPR 4,372 million, Saving Deposits at NPR 18,445 million, and Fixed Deposits at NPR 25,198 million. The following year, 2018, saw a recovery in total deposits to NPR 58,913 million, with Current Deposits at NPR 3,975 million, Saving Deposits at NPR 20,425 million, and Fixed Deposits at NPR 34,513 million.

The year 2019 continued this upward trend with total deposits rising to NPR 69,508 million, comprised of Current Deposits at NPR 6,155 million, Saving Deposits at NPR 23,681 million, and Fixed Deposits at NPR 39,671 million. In 2020, total deposits increased to NPR 77,877 million, with Current Deposits at NPR 4,294 million, Saving Deposits at NPR 23,816 million, and Fixed Deposits at NPR 49,766 million.

In 2021, the total deposits remained stable at NPR 79,334 million, with a decrease in Current Deposits to NPR 2,871 million, an increase in Saving Deposits to NPR 25,935 million, and Fixed Deposits at NPR 50,529 million. The year 2022 saw a significant increase in total deposits to NPR 95,329 million, with Current Deposits at NPR 3,730 million, Saving Deposits at NPR 19,853 million, and Fixed Deposits at NPR 71,745 million.

Finally, in 2023, total deposits reached a high of NPR 102,641 million, with Current Deposits at NPR 2,973 million, Saving Deposits at NPR 19,538 million, and Fixed Deposits at NPR 80,130 million. Over the entire period, the average deposits were NPR 4,417 million for Current Deposit, NPR 26,309 million for Saving Deposit, and NPR 42,838 million for Fixed Deposit, leading to an average total of NPR 73,564 million.

4.1.8 Domestic Credit Provided by Banking and Financial Institutional of Nepal

Table 4.8 provides detailed information on the Domestic Credit of BFIs (Bank and Financial Institutions) in Nepal, presented in millions of Nepalese Rupees (NPR), for each fiscal year from 2011 to 2023. It also includes the corresponding GDP figures and the percentage of domestic credit to GDP.

Throughout the period, domestic credit consistently increased, reflecting the growth and expansion of lending activities by BFIs within the Nepalese economy. In 2011, domestic credit started at 91,022 million NPR, which constituted approximately 58% of Nepal's GDP of 156,268 million NPR. Over the years, both domestic credit and GDP experienced steady growth.

By 2023, domestic credit had risen significantly to 616,891 million NPR, while GDP reached 538,134 million NPR. This resulted in domestic credit accounting for 115%

of Nepal's GDP, indicating a substantial increase in the financial resources available for investment, consumption, and economic activities facilitated by BFIs.

The average domestic credit over this period was approximately 282,811 million NPR, with GDP averaging around 319,100 million NPR. This resulted in an average percentage of domestic credit to GDP standing at about 81%, underscoring the crucial role of BFIs in financing economic growth and development in Nepal over the years.

Table 4. 8

Domestic Credit of BFIs

Amount in NPR millions

Fiscal Year	Domestic Credit	GDP	as % of GDP
2011	91022	156268	58
2012	99469	175838	57
2013	116587	194929	60
2014	131431	223253	59
2015	152735	242364	63
2016	180574	260818	69
2017	217779	307714	71
2018	275589	345595	80
2019	341798	385893	89
2020	389763	388870	100
2021	495548	435255	114
2022	567357	493370	115
2023	616891	538134	115
Average	282,811	319,100	81

Source: Ministry of Finance, 2024

Overall, the data highlights a consistent upward trend in domestic credit, signaling a growing financial sector and potentially contributing to broader economic development and stability in Nepal.

4.2 Effect of Financial Development in Economic Growth of Nepal

The section investigates the critical interplay between financial sector advancements and Nepal's economic growth. Understanding these dynamics is crucial for policymakers and stakeholders aiming to formulate strategies that promote sustainable economic development and enhance overall economic resilience in Nepal.

4.2.1 Unit Root Test

Table 4.9 displays the outcomes of an Augmented Dickey-Fuller (ADF) unit root test conducted on various economic variables. The purpose of this test is to assess the stationarity of each variable, a critical requirement in time series analysis to ensure reliable statistical modeling and forecasting.

Table 4. 9
Augmented Dickey-Fuller Unit Root Test Result

Variables	Stationary at	includes	1%	5%	10%	t-stat	prob
GDP	level	trend and intercept	-4.161	-3.506	-3.183	-3.739	0.029
LA	1st difference	intercept only	-3.578	-2.925	-2.601	-7.607	0.000
GFCF	1st difference	intercept only	-3.578	-2.925	-2.601	-9.025	0.000
GE	1st difference	intercept only	-3.578	-2.925	-2.601	-6.011	0.000
E	1st difference	none	-2.615	-1.948	-1.612	-5.577	0.000
FA	level	trend and intercept	-4.166	-3.509	-3.184	-3.601	0.041

Source: Output of Eviews 10

Stationarity implies that a variable's statistical properties—such as its mean, variance, and autocovariance—remain constant over time. This stability is pivotal for accurate economic analysis, as non-stationary variables can lead to misleading conclusions and forecasts.

The variables examined include Gross Domestic Product (GDP), Loan and Advance of Banking and Financial Institutions (LA), Gross Fixed Capital Formation (GFCF), Government Expenditure (GE), Export (E), and Foreign Aid (FA). Each row in the table corresponds to one of these variables, detailing whether stationarity is achieved at their original level or after applying first differencing.

Key findings from the table indicate that variables like GDP and FA exhibit stationarity when including both a trend and an intercept in the ADF test, as indicated by their significant t-statistics and associated probabilities (prob). Conversely, variables such as LA, GFCF, GE, and E require first differencing and include an intercept (without a trend) to achieve stationarity. The critical values provided (1%, 5%, and 10%) establish thresholds for determining the statistical significance of the test results. If the computed test statistic (t-stat) exceeds these critical values, it indicates that the variable is likely stationary, supporting robust time series analysis and forecasting.

In conclusion, these ADF test results offer valuable insights into the temporal behavior of key economic indicators, informing researchers, economists, and policymakers about the appropriate transformations needed for rigorous economic modeling and policy formulation.

4.2.2 ARDL Model for Cointegration Test

Table 4.10 presents results from an Autoregressive Distributed Lag (ARDL) model, specifically configured as ARDL(4, 4, 4, 4, 3, 0). This model is designed to analyze both short-term dynamics and long-run relationships among economic variables, including Gross Domestic Product (GDP), Loan and Advance of Banking and Financial Institutions (LA), Gross Fixed Capital Formation (GFCF), Government Expenditure (GE), Export (E), and Foreign Aid (FA).

Table 4. 10

Autoregressive distributed lag estimates

Selected Model: ARDL(4, 4, 4, 4, 3, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
GDP(-1)	-0.289	0.197	-1.464	0.160
GDP(-2)	0.194	0.187	1.037	0.313
GDP(-3)	-0.533	0.205	-2.601	0.018
GDP(-4)	0.903	0.183	4.935	0.000
LA	-0.220	0.087	-2.524	0.021
LA(-1)	0.156	0.088	1.758	0.095
LA(-2)	0.060	0.078	0.763	0.455
LA(-3)	-0.177	0.075	-2.369	0.029
LA(-4)	0.217	0.061	3.541	0.002
GFCF	0.126	0.049	2.583	0.018
GFCF(-1)	-0.026	0.057	-0.452	0.656
GFCF(-2)	0.150	0.067	2.238	0.037
GFCF(-3)	0.115	0.072	1.600	0.126
GFCF(-4)	-0.087	0.071	-1.217	0.238
GE	0.087	0.070	1.237	0.231
GE(-1)	0.195	0.076	2.555	0.019
GE(-2)	-0.100	0.077	-1.288	0.213
GE(-3)	0.157	0.076	2.074	0.052
GE(-4)	-0.099	0.063	-1.557	0.136
E	-0.010	0.028	-0.372	0.714
E(-1)	0.086	0.053	1.615	0.123
E(-2)	-0.095	0.047	-2.042	0.055
E(-3)	0.073	0.029	2.554	0.019
FA	-0.060	0.026	-2.343	0.030
C	3.028	0.656	4.616	0.000
R-squared	0.9997	Akaike info criterion		-5.310
Adjusted R-squared	0.9993	Schwarz criterion		-4.296
F-statistic	2779.955	Hannan-Quinn criter.		-4.934
Prob(F-statistic)	0.000	Durbin-Watson stat		1.855

Source: Output of Eviews 10

Each row in the table corresponds to a specific variable and its lagged values, providing estimates for coefficients, standard errors, t-statistics, and associated probabilities. These statistical measures help evaluate the strength and significance of relationships between the independent variables and the dependent variable being studied.

Model diagnostics, including R-squared (1.000), Adjusted R-squared (0.999), and the F-statistic (2779.955 with a Prob(F-statistic) of 0.000), evaluate the overall fit and significance of the model. R-squared measures the proportion of variance in the dependent variable explained by the independent variables, while the F-statistic tests whether the overall model is statistically significant.

Furthermore, criteria such as the Akaike Information Criterion (AIC), Schwarz Criterion (SC), and Hannan-Quinn Criterion (HQ) assist in comparing and selecting models based on their goodness of fit and complexity.

The Durbin-Watson statistic (1.855) examines residual autocorrelation, with a value near 2 indicating minimal autocorrelation. This is crucial for ensuring that the regression results are valid and reliable.

4.2.3 Existence of a Level Relationship

Table 4.11 presents results from tests assessing the existence of a level relationship among variables within an Autoregressive Distributed Lag (ARDL) model framework. These tests are crucial for determining whether long-term relationships exist among the variables studied, such as Gross Domestic Product (GDP), Loan and Advance of Banking and Financial Institutions (LA), Gross Fixed Capital Formation (GFCF), Government Expenditure (GE), Export (E), and Foreign Aid (FA).

Table 4. 11

Testing for Existence of a Level Relationship

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	9.092107	10%	2.08	3.00
		5%	2.39	3.38
k	5	2.50%	2.70	3.73
		1%	3.06	4.15

Source: Output of Eviews 10

The primary test statistic reported is the F-statistic, which measures the overall significance of the level relationship among the variables. In this case, the F-statistic is 9.092107. Significance levels are provided as thresholds to evaluate the statistical significance of the test results: 10%, 5%, 2.50%, and 1%.

To interpret these results, the table includes critical values denoted as k, corresponding to the degrees of freedom and specific significance levels. For instance, at the 10% significance level, the critical value of k is 5, with a corresponding value of 2.08 for the I(0) hypothesis and 3.00 for the I(1) hypothesis.

The terms I(0) and I(1) refer to the order of integration of the variables. I(0) indicates variables that are stationary or do not have a unit root, implying they are integrated of order zero. I(1) indicates variables that are integrated of order one, meaning they require differencing to become stationary.

In practical terms, these tests help researchers determine whether the variables in the ARDL model exhibit long-term relationships. If the calculated F-statistic exceeds the critical value for a given significance level, it suggests that a level relationship exists among the variables.

4.2.4 Long-run Relationships

Table 4.12 presents the estimated long-run coefficients from an Autoregressive Distributed Lag (ARDL) approach, a method commonly used in econometrics to analyze the persistent effects of independent variables on a dependent variable over time. Each coefficient represents the expected change in the dependent variable associated with a one-unit change in the respective independent variable, accounting for other variables in the model.

For instance, the coefficient for Gross Fixed Capital Formation (GFCF) is 0.385, indicating that a one-unit increase in GFCF leads to a 0.385 unit increase in the dependent variable, holding all other variables constant. This relationship is statistically significant with a t-statistic of 5.365 ($p = 0.000$), suggesting a robust positive long-run impact of capital formation on the dependent variable.

Table 4. 12

Estimated Long-run Coefficients using ARDL Approach

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LA	0.049	0.085	0.570	0.575
GFCF	0.385	0.072	5.365	0.000
GE	0.331	0.166	1.992	0.061
E	0.074	0.019	3.965	0.001
FA	-0.082	0.032	-2.542	0.020
C	4.174	0.345	12.104	0.000

Source: Output of Eviews 10

In contrast, the coefficient for Loan and Advance of Banking and Financial Institutions (LA) is 0.049, accompanied by a t-statistic of 0.570 (p = 0.575), indicating that its effect on the dependent variable is not statistically significant at conventional levels. This suggests that changes in LA may not have a significant long-run impact on the dependent variable considered in the model.

Government Expenditure (GE) shows a coefficient of 0.331 with a t-statistic of 1.992 (p = 0.061), suggesting a borderline statistically significant positive relationship. This indicates that increases in government spending may have a positive but less certain long-run effect on the dependent variable.

Export (E) exhibits a coefficient of 0.074 with a t-statistic of 3.965 (p = 0.001), indicating a statistically significant positive impact of exports on the dependent variable. This suggests that increases in exports contribute positively to the long-run behavior of the dependent variable in the model.

Foreign Aid (FA) shows a coefficient of -0.082 with a t-statistic of -2.542 (p = 0.020), indicating a statistically significant negative relationship. This implies that higher levels of foreign aid are associated with a decrease in the dependent variable over the long run, all else being equal.

The constant term (C) in the model has a coefficient of 4.174 with a t-statistic of 12.104 (p = 0.000), indicating a highly significant baseline level of the dependent variable when all independent variables are zero.

4.2.5 Error Correction Regression Model

Table 4.13 presents findings from an ARDL Error Correction Model, a method used to analyze short-term adjustments and long-run relationships among economic variables. It examines how changes in lagged Gross Domestic Product (GDP), Loan and Advance (LA), Gross Fixed Capital Formation (GFCF), Government Expenditure (GE), Export (E), and a lagged Cointegration Error (CointEq(-1)) affect the dependent variable.

Table 4. 13

ARDL Error Correction Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDP(-1))	-0.564	0.114	-4.937	0.000
D(GDP(-2))	-0.370	0.105	-3.534	0.002
D(GDP(-3))	-0.903	0.152	-5.957	0.000
D(LA)	-0.220	0.060	-3.639	0.002
D(LA(-1))	-0.100	0.046	-2.154	0.044
D(LA(-2))	-0.040	0.050	-0.805	0.431
D(LA(-3))	-0.217	0.046	-4.694	0.000
D(GFCF)	0.126	0.033	3.808	0.001
D(GFCF(-1))	-0.179	0.049	-3.686	0.002
D(GFCF(-2))	-0.028	0.044	-0.649	0.524
D(LNRGFCF(-3))	0.087	0.047	1.836	0.082
D(GE)	0.087	0.039	2.239	0.037
D(GE(-1))	0.041	0.047	0.870	0.395
D(GE(-2))	-0.059	0.045	-1.311	0.206
D(GE(-3))	0.099	0.042	2.328	0.031
D(E)	-0.010	0.020	-0.526	0.605
D(E(-1))	0.022	0.022	1.026	0.318
D(E(-2))	-0.073	0.019	-3.934	0.001
CointEq(-1)*	-0.726	0.079	-9.151	0.000

Source: Output of Eviews 10

Each coefficient in the table represents the estimated impact of a variable on the dependent variable. For instance, negative coefficients for lagged GDP variables (D(GDP(-1)), D(GDP(-2)), D(GDP(-3))) suggest that changes in GDP from previous periods negatively affect the dependent variable. These coefficients are statistically significant, indicating robust short-term impacts.

Conversely, variables like D(GFCF) (changes in Gross Fixed Capital Formation) and D(GE) (changes in Government Expenditure) show positive coefficients, suggesting positive short-term effects on the dependent variable. These coefficients are also statistically significant, implying that increases in capital formation and government spending lead to immediate positive adjustments in the dependent variable.

The coefficient for D(LA) (changes in Loan and Advance) is negative and statistically significant, indicating a short-term negative impact on the dependent variable. In contrast, the coefficients for lagged terms of D(LA) are less significant, suggesting diminishing short-term effects over time.

Notably, the lagged Cointegration Error term (CointEq(-1)) has a significant negative coefficient, suggesting a strong correction mechanism towards long-term equilibrium. This term captures deviations from the equilibrium relationship among variables, influencing adjustments in the dependent variable.

Overall, these results contribute to understanding how economic variables interact in both the short term and through long-term equilibrium corrections. They provide valuable insights for economic analysis, policy formulation, and forecasting within the ARDL modeling framework.

4.3 Diagnostic and Residual Test

In this section of the study, the diagnostic and residual test are conducted in order to examine the reliability and stability of the model.

4.3.1 Normality Test

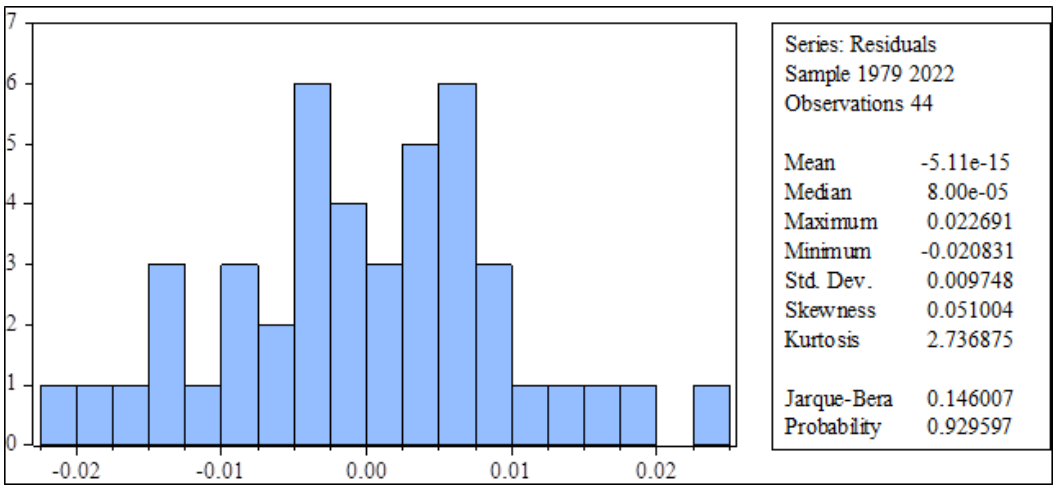
Figure 4.1 presents the results of a Jarque-Bera test for normality, a statistical test used to assess whether a given dataset follows a normal distribution based on its skewness and kurtosis. In this case, the test statistic is reported as 0.146, and the associated probability (p-value) is 0.930.

Interpreting these results, a higher p-value (0.930) indicates that the data do not significantly depart from normality. Typically, in statistical testing, if the p-value is greater than a chosen significance level (commonly 0.05), we fail to reject the null hypothesis. Therefore, with a p-value of 0.930, which is much higher than 0.05, we

can conclude that there is no evidence to suggest that the data depart from a normal distribution.

Figure 4. 1

Normality Test



Source: Output of Eviews 10

In practical terms, this implies that the dataset being tested for normality, likely residuals or errors from a regression model or a dataset itself, exhibits characteristics (skewness and kurtosis) that are consistent with those expected under a normal distribution. This adherence to normality assumptions is important for certain statistical methods and interpretations, ensuring that the statistical inferences drawn from the data are valid and reliable.

4.3.2 Breusch Godfrey Serial Correlation LM Test

The Breusch-Godfrey Serial Correlation LM Test table provides insights into the presence of serial correlation, or autocorrelation, within the residuals of a regression model. This statistical test is essential for assessing whether the errors from the model exhibit patterns of correlation over time, which could violate the assumption of independent and identically distributed errors.

Table 4. 14

Breusch-Godfrey Serial Correlation LM Test

F-statistic	0.179	Prob. F(2,17)	0.838
Obs*R-squared	0.907	Prob. Chi-Square(2)	0.635

Source: Output of Eviews 10

Firstly, the F-statistic reported in the table is 0.179, indicating the overall significance of serial correlation in the residuals. In this case, with a probability (Prob. F(2,17)) of 0.838, which is notably higher than conventional significance levels (such as 0.05), there is no statistical evidence to reject the null hypothesis of no serial correlation. This suggests that the residuals do not exhibit significant autocorrelation, implying that the assumption of independence among errors is likely valid.

Secondly, the Obs. R-squared value of 0.907, along with the associated probability (Prob. Chi-Square(2)) of 0.635, further supports the conclusion drawn from the F-statistic. The high p-value for the observed LM test statistic indicates that the test does not reject the null hypothesis of no autocorrelation in the residuals.

These findings are crucial for interpreting the reliability of the regression model's estimates and the validity of statistical inferences drawn from it. When serial correlation is absent in the residuals, it enhances confidence that the estimated coefficients are unbiased and the standard errors are correctly estimated. This strengthens the overall validity of the regression analysis and its suitability for making accurate predictions and policy recommendations based on the model's results.

4.3.3 Breusch Pagan Godfrey Heteroscedasticity Test

The Breusch-Pagan-Godfrey Heteroscedasticity Test table provides insights into whether the variance of residuals in a regression model varies systematically with the independent variables. This test is essential for assessing the assumption of homoscedasticity, which states that the variance of the errors should be constant across all levels of the independent variables.

Table 4. 15

Breusch-Pagan-Godfrey Heteroscedasticity Test

F-statistic	0.779	Prob. F(24,19)	0.722
Obs*R-squared	21.821	Prob. Chi-Square(24)	0.590
Scaled explained SS	3.534	Prob. Chi-Square(24)	1.000

Source: Output of Eviews 10

Firstly, the F-statistic reported in the table is 0.779, and its associated probability (Prob. F(24,19)) is 0.722. A non-significant F-statistic with a high p-value suggests

that there is no significant evidence of heteroscedasticity in the residuals. This indicates that the variance of errors does not systematically change with the levels of the independent variables considered in the model.

Secondly, the Obs. R-squared value of 21.821, along with the associated probability (Prob. Chi-Square(24)) of 0.590, further supports the conclusion drawn from the F-statistic. The high p-value for the observed chi-squared test statistic suggests that the test does not reject the null hypothesis of homoscedasticity. This reinforces the finding that there is no significant heteroscedasticity present in the residuals.

Moreover, the Scaled explained SS also has a probability (Prob. Chi-Square(24)) of 1.000, indicating that this component of the test is not statistically significant. This further supports the overall conclusion that there is no evidence of systematic variance in the residuals across different values of the independent variables.

In summary, based on the results from the Breusch-Pagan-Godfrey Heteroscedasticity Test, we can conclude that the assumption of homoscedasticity holds true for the regression model under consideration. This implies that the variance of errors is likely constant, validating the reliability of the standard errors and ensuring the accuracy of statistical inferences drawn from the model's coefficients. These findings are crucial for interpreting the robustness of the regression analysis and for making reliable predictions and policy recommendations based on the model's results.

4.3.4 Ramsey RESET Test

Table 4.16 presents results from Ramsey's RESET Test, a diagnostic tool used to assess whether a regression model adequately captures the nonlinear relationship between the dependent variable and the independent variables. This test is crucial for detecting potential misspecification or the omission of higher-order terms that could affect the model's accuracy and reliability.

Table 4. 16

Ramsey's RESET Test

Statistic	Value	df	Probability
t-statistic	0.096	18	0.925
F-statistic	0.009	(1, 18)	0.925

Source: Output of Eviews 10

Firstly, the t-statistic reported in the table is 0.096 with 18 degrees of freedom and a corresponding probability of 0.925. The t-statistic tests the significance of adding squared or higher-order terms of the independent variables to the model. A high probability (0.925) suggests that the t-statistic is not statistically significant, indicating that the inclusion of additional nonlinear terms in the model does not significantly improve its fit or explanatory power. This implies that the model's current linear specification adequately captures the relationship between the variables under study.

Secondly, the F-statistic provided is 0.009 with degrees of freedom (1, 18) and a probability of 0.925. The F-statistic assesses the collective significance of including additional higher-order terms in the model. Similar to the t-statistic, a high probability (0.925) for the F-statistic suggests that the model's specification is appropriate and that there is no significant benefit in incorporating additional nonlinear terms into the regression.

In summary, the results from Ramsey's RESET Test indicate that the regression model is correctly specified in terms of its linearity assumption. The non-significant probabilities associated with both the t-statistic and F-statistic (0.925) provide strong evidence that the current linear functional form adequately fits the data. Therefore, the coefficients estimated from this model are likely to be unbiased, and the model itself is reliable for making predictions and drawing conclusions about the relationship between the dependent and independent variables. These findings contribute to the validity and robustness of the regression analysis, ensuring that the statistical inferences drawn from the model are sound and accurate for practical applications.

4.3.5 CUSUM and CUSUMSQ Test

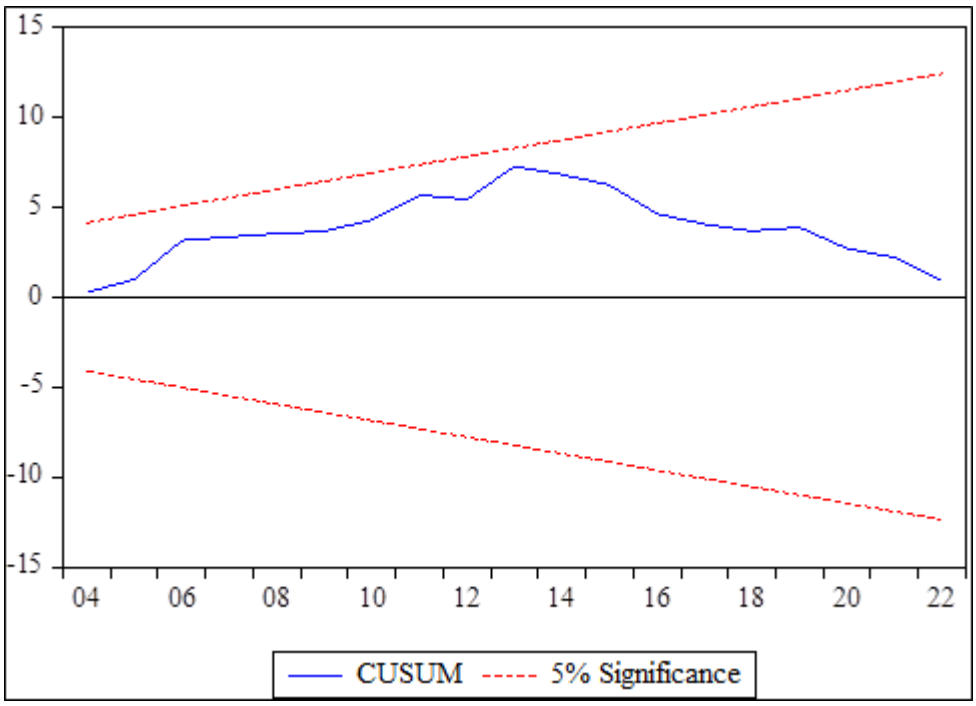
The graph is a CUSUM (Cumulative Sum Control Chart) plot, which is a statistical tool used to monitor the stability of a process over time. This chart is particularly useful for detecting shifts or changes in the mean level of a measured variable, making it a valuable tool in quality control and time series analysis.

The inner line in the graph represents the cumulative sum of the deviations of the observed variable from its target value or mean. By plotting these cumulative sums over time, the CUSUM chart helps to identify periods where the process deviates from the expected behavior. When the process is stable, the CUSUM line should

fluctuate around zero, indicating that the observed values are consistent with the target mean.

Figure 4. 2:

Plot of Cumulative Sum of Recursive Residuals



Source: Output of Eviews 10

The outer dashed lines represent the 5% significance levels, serving as control limits. These lines are critical for determining whether observed changes in the process are statistically significant. If the inner CUSUM line remains within these outer dashed control limits, it suggests that there are no significant shifts in the process mean, indicating stability. Conversely, if the CUSUM line crosses these limits, it signals a potential significant change in the process, warranting further investigation.

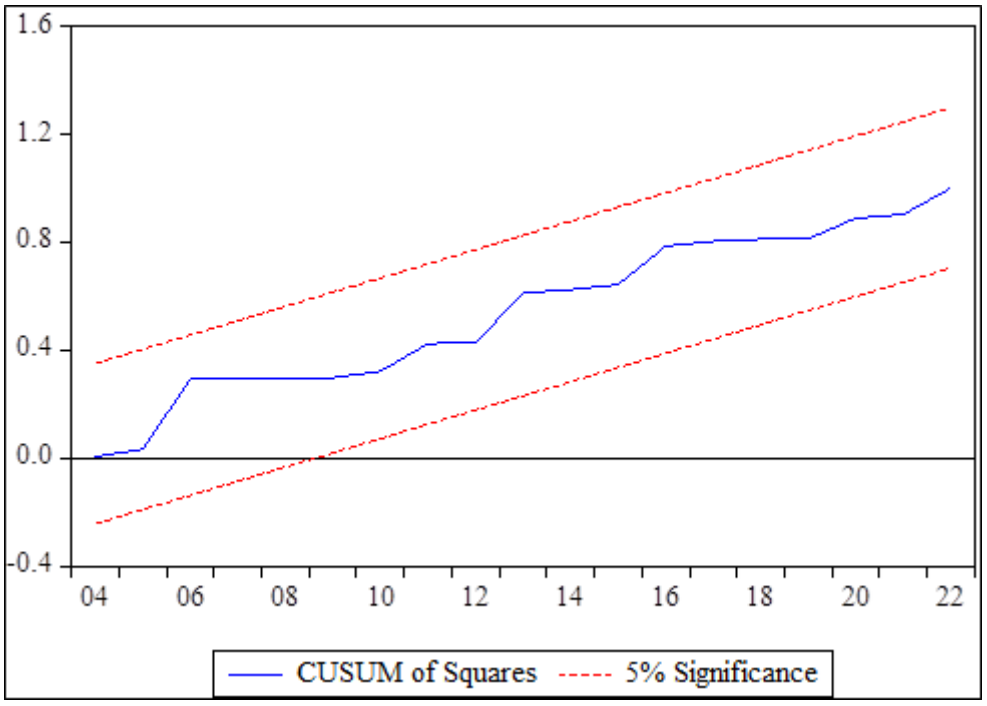
Interpreting the graph involves examining the behavior of the inner CUSUM line relative to the outer dashed lines. In the provided graph, the inner line starts near zero and gradually increases, reaching a peak around the midpoint of the time period (approximately at point 14 on the x-axis). Following this peak, the CUSUM line begins to decline but remains within the control limits throughout the observed period. This pattern indicates that, despite fluctuations, there are no significant shifts in the process mean, as the CUSUM line does not cross the control limits.

Overall, this CUSUM plot suggests that the process being monitored is stable over the observed period, with no statistically significant changes in the mean level. This stability is crucial for ensuring consistent quality and performance in various applications, from manufacturing to financial analysis.

The graph is a CUSUM of Squares plot, which is another form of the Cumulative Sum Control Chart used to detect variance changes in a process over time. This chart specifically monitors the cumulative sum of squared deviations from the target value or mean, helping to identify shifts in process variability.

Figure 4. 3

Plot of Cumulative Sum of Square of Recursive Residuals



Source: Output of Eviews 10

The inner line in the graph represents the cumulative sum of the squared deviations of the observed variable from its target value or mean. By squaring the deviations, the chart emphasizes larger deviations, making it easier to detect increases in process variability.

The outer dashed lines represent the 5% significance levels, acting as control limits. These lines are crucial for determining whether changes in the process variability are

statistically significant. If the inner CUSUM of Squares line stays within these control limits, it suggests that there are no significant changes in process variability. However, if the line crosses these limits, it indicates a significant shift in variability, signaling potential issues in the process.

Interpreting this graph involves examining the behavior of the inner CUSUM of Squares line in relation to the outer dashed lines. In the provided graph, the inner line starts near zero and shows a general upward trend throughout the observed period. Despite some fluctuations, the line consistently increases but remains within the control limits. This pattern suggests that while there may be some increases in variability, these changes are not statistically significant, as the CUSUM of Squares line does not cross the control limits.

Overall, the CUSUM of Squares plot indicates that the process variability is stable over the observed period, with no significant shifts detected. This stability is important for ensuring consistent process performance and quality.

4.4 Discussions

Based on an in-depth examination of Nepal's financial sector and its impact on economic growth, several key findings highlight the evolving landscape of financial development and its implications for the economy (Paudel & Acharya, 2020; Gautam, 2015). Over the past decade, Nepal has experienced significant restructuring within its banking and financial sector, marked by a notable reduction in the number of Development Banks and Finance Companies (Maharjan, 2020). This consolidation effort aims at achieving greater efficiency and regulatory streamlining within the financial industry.

Conversely, the rise of Microfinance Institutions (MFIs) indicates a parallel trend towards enhancing financial inclusion across various regions of Nepal (Pant, 2016). This expansion is essential as it provides access to financial services for underserved communities, thereby promoting broader economic participation and resilience.

The substantial growth in the number of Commercial Bank branches, particularly in economic hubs such as Bagmati Province, reflects significant infrastructure development within the banking sector (Maharjan, 2020). This expansion not only

supports local economic activities but also reinforces the foundation for sustained financial intermediation and service delivery.

Moreover, the significant increase in deposits held by Commercial Banks indicates growing public confidence in the banking system and signals economic stability (Paudel & Acharya, 2020). This trend is crucial as it establishes a solid base for further credit creation and investment, which are vital for economic growth.

In examining econometric relationships, the study identifies Gross Fixed Capital Formation (GFCF) as a critical determinant of long-term economic growth in Nepal (Gautam, 2015). The positive coefficient and significant t-statistic associated with GFCF indicate that investments in physical capital are pivotal in driving sustainable economic expansion. This underscores the importance of continued investment in infrastructure and productive assets to bolster overall economic output.

Government Expenditure (GE), while showing a positive coefficient in the long run, exhibits varying impacts across different scenarios (Paudel & Acharya, 2020). This suggests that while increased government spending can stimulate economic activity, its effectiveness depends on factors such as the quality of spending and alignment with developmental goals.

The study also underscores the role of exports in fostering economic growth, supported by a statistically significant coefficient (Paudel & Acharya, 2020). This finding emphasizes the benefits of export-led growth strategies in enhancing economic resilience and expanding market opportunities for Nepalese goods and services.

However, the analysis reveals a negative relationship between Foreign Aid (FA) and economic growth over the long term (Paudel & Acharya, 2020). This counterintuitive finding suggests potential challenges related to aid dependency and raises questions about the effectiveness of foreign aid in promoting sustainable economic development in Nepal.

In conclusion, while Nepal's financial sector has undergone significant transformation and expansion, the study highlights the importance of targeted policies to sustain and maximize its positive impact on economic growth. This entails fostering a conducive

environment for private sector investment, enhancing financial literacy, and aligning developmental strategies with long-term economic goals (Pant, 2016; Maharjan, 2020). By leveraging these insights, Nepal can further harness its financial sector's potential to foster inclusive and resilient economic growth in the coming years.

CHAPTER V

SUMMARY AND CONCLUSIONS

This chapter offers a comprehensive overview of the study, summarizing its main findings, major findings, conclusions, and recommendations derived from the research outcomes.

5.1 Summary

The imperative for financial development arises from its crucial role in fostering economic growth and stability. A developed financial sector provides individuals and businesses with access to a wide array of financial products and services, such as credit, insurance, and investment opportunities, thereby promoting entrepreneurship, job creation, and innovation. Additionally, financial development aids in poverty reduction by enhancing financial inclusion, enabling a larger portion of the population to access and utilize financial services. An efficient and well-regulated financial system also improves resource allocation by reducing information asymmetry and enhancing market functionality. During economic downturns, a resilient financial sector can serve as a stabilizing force, facilitating recovery and mitigating the adverse effects of financial shocks.

This study aims to evaluate the relationship between economic growth and financial development in Nepal. Specifically, it seeks to examine various financial indicators and analyze how financial development influences economic growth. The study utilizes secondary data from the Ministry of Finance (MOF) and Nepal Rastra Bank (NRB) covering the period from 1975 to 2022. The data is rebased to a common base year and transformed into logarithmic form to facilitate econometric analysis.

The study employs the Augmented Dickey-Fuller (ADF) test to assess the presence of unit roots in the variables. Economic growth, represented by gross domestic product (GDP), serves as the dependent variable. Independent variables include loans and advances of banking and financial institutions (LA), gross fixed capital formation (GFCF), government expenditure (GE), exports (E), and foreign aid (FA).

To analyze the impact of these variables on economic growth, the study utilizes the Autoregressive Distributed Lag (ARDL) bounds test methodology. This approach helps in understanding both short-term dynamics and long-term equilibrium relationships among the variables.

5.2 Major Findings

The major findings of the study are:

- Nepal's banking and financial sector saw significant consolidation over the past decade:
    - Development Banks decreased from 87 in 2011 to 17 in 2023.
    - Finance Companies reduced from 79 to 17 in the same period.
- Microfinance Institutions (MFIs) increased from 21 in 2011 to 90 in 2019, enhancing financial inclusion.
- The number of Commercial Bank branches increased:
    - Bagmati Province had the highest growth from 1,031 branches in 2018 to 1,824 in 2023.
- Deposits in Commercial Banks grew significantly:
    - From NPR 562,383 million in 2011 to NPR 4,712,305 million in 2023.
    - Indicates rising public trust and economic stability.
- Domestic credit provided by BFIs grew consistently:
    - Reached NPR 616,891 million in 2023.
    - Represented 115% of Nepal's GDP, highlighting the sector's role in supporting economic activities.
- Long-term impacts on economic growth:
    - Gross Fixed Capital Formation (GFCF) has a significant positive impact with a coefficient of 0.385 and t-statistic of 5.365 ($p = 0.000$).
    - Government Expenditure (GE) shows a positive impact with a coefficient of 0.331 and t-statistic of 1.992 ($p = 0.061$).
    - Exports (E) contribute positively with a coefficient of 0.074 and t-statistic of 3.965 ($p = 0.001$).
    - Foreign Aid (FA) has a negative impact with a coefficient of -0.082 and t-statistic of -2.542 ($p = 0.020$).

- - No significant long-term relationship between loans and advances by financial institutions and economic growth.
- Short-term impacts from the Error Correction Model:
    - Past GDP declines negatively impact current growth with significant t-statistics (-4.937, -3.534, -5.957, all with p = 0.000).
    - Gross Fixed Capital Formation (GFCF) initially boosts growth but its impact diminishes over time.
    - Government Expenditure (GE) shows mixed short-term effects, varying across different lags.

5.3 Conclusion

The study provides valuable insights into Nepal's economic dynamics, particularly concerning the relationship between loans and advances from banking and financial institutions and economic growth. Contrary to initial expectations, the analysis reveals that changes in loans and advances do not exhibit a statistically significant correlation with long-term economic growth. This finding challenges the traditional understanding of credit dynamics and their role in fostering sustained economic expansion, suggesting the need for a reassessment of policy frameworks and strategic interventions.

Despite the limited direct impact of loans and advances on economic growth, Nepal's financial sector has demonstrated resilience and adaptability. The consolidation of Development Banks and Finance Companies, alongside the growth of Microfinance Institutions, reflects efforts to enhance financial inclusivity and sectoral efficiency. This diversification not only supports broader economic activities but also contributes to stability and resilience in the face of economic challenges, positioning the financial sector as a critical pillar of Nepal's economic infrastructure.

Furthermore, the expansion of Commercial Bank branches and the substantial growth in deposits indicate growing public confidence in the banking system. This trend underscores the crucial role of financial institutions in mobilizing savings, facilitating investments, and ensuring economic stability and liquidity in Nepal. Looking ahead, while Gross Fixed Capital Formation (GFCF) remains a key driver of economic

growth, the nuanced findings on loans and advances suggest a context-specific approach to financial sector development.

In conclusion, while the direct impact of loans and advances on Nepal's economic growth may be limited, ongoing reforms and strategic interventions hold promise for unlocking new opportunities. By enhancing the quality and accessibility of credit, aligning financial sector development with broader economic goals, and fostering an enabling environment, Nepal can strengthen the financial sector's capacity to drive inclusive growth, enhance economic resilience, and achieve sustainable development in the foreseeable future.

5.4 Recommendations

Based on the findings of the study, several recommendations are proposed to enhance the impact of Nepal's financial sector on economic growth and stability.

First, streamline credit processes by simplifying and expediting loan approval procedures to increase accessibility for small and medium-sized enterprises (SMEs) and rural communities. This will enable more businesses and individuals to obtain the necessary funding for growth and development.

Second, expand financial inclusion by promoting innovative financial products and microfinance initiatives. Reaching underserved sectors and populations through these efforts will ensure broader access to financial services, fostering economic participation and resilience across diverse communities.

Third, diversify sectoral lending by developing specialized lending programs for key sectors such as agriculture and infrastructure. Focusing on these areas will stimulate productive investments, supporting sustainable economic growth and development.

Finally, strengthen regulatory oversight by implementing robust oversight mechanisms to ensure responsible lending practices and financial stability. Effective regulation will safeguard the financial system, maintaining trust and confidence among stakeholders and promoting long-term economic health.

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APPENDIX

Appendix-1: Nominal Values

Year	GDP	GDP DEF	LA	GFCF	GE	E	FA
1975	1660.10	4.75	163.78	222.30	151.37	88.96	38.70
1976	1739.40	4.81	176.33	244.30	191.33	118.58	50.56
1977	1728.00	4.73	212.50	258.00	233.04	116.47	55.69
1978	1972.70	5.24	290.53	329.40	267.49	104.62	84.84
1979	2612.80	6.79	354.08	326.30	302.05	129.68	98.98
1980	2335.10	6.16	430.58	368.10	347.07	115.05	134.05
1981	2553.00	6.55	516.14	429.90	409.23	160.87	156.22
1982	3098.80	7.12	604.31	546.50	536.13	149.15	172.32
1983	3382.10	7.74	849.09	657.60	697.92	113.20	207.59
1984	3929.00	8.26	982.45	690.70	743.73	170.39	254.75
1985	4658.70	9.30	1255.09	938.60	839.48	274.06	267.64
1986	5573.40	10.63	1532.29	943.10	979.71	307.80	349.15
1987	6386.40	11.98	1780.31	1182.50	1151.32	299.14	331.45
1988	7690.60	13.40	2046.93	1341.40	1410.50	411.45	507.85
1989	8927.00	14.91	2658.43	1639.20	1800.50	419.53	566.69
1990	10341.60	16.50	2966.16	1700.20	1966.90	515.62	642.71
1991	12037.00	18.06	3449.14	2278.00	2355.00	738.75	599.00
1992	14948.70	21.54	4197.30	2927.70	2641.80	1370.65	780.04
1993	17149.20	23.80	4982.60	3727.80	3089.80	1726.65	923.56
1994	19927.20	25.55	5841.35	4203.20	3359.70	1929.34	1155.72
1995	21917.50	27.16	7325.47	4837.00	3906.00	1763.92	1124.94
1996	24891.30	29.29	8926.57	5608.10	4654.24	1988.11	1428.90
1997	28051.30	31.36	10091.67	6079.40	5072.37	2263.65	1503.19
1998	30084.50	32.67	11581.21	6537.50	5611.83	2751.35	1645.71
1999	34203.60	35.55	13483.27	6526.90	5957.90	3567.63	1618.90
2000	37948.80	37.16	15458.27	7332.40	6627.25	4982.27	1752.39
2001	44151.90	40.94	18378.85	8475.06	7983.51	5565.41	1879.74
2002	45944.30	42.55	20295.65	8988.93	8007.22	4694.48	1438.48
2003	49223.10	43.85	22407.73	9807.28	8400.61	4993.06	1588.55
2004	53674.90	45.68	24617.18	10918.13	8944.26	5391.07	1891.24
2005	58941.20	48.48	28024.04	11753.89	10256.04	5870.57	2365.73
2006	65408.40	52.04	32268.38	13553.20	11088.92	6023.41	2204.18
2007	72782.70	56.00	36055.80	15333.69	13360.46	5938.31	2585.44
2008	81565.80	59.15	43727.00	17844.55	16134.99	5926.65	2930.06
2009	98827.20	68.56	55567.60	21103.90	21966.20	6769.75	3635.17
2010	119277.40	78.94	79659.82	26488.75	25968.91	6082.40	4976.94
2011	156268.10	100.00	91022.49	37393.88	29536.30	6433.85	5977.14
2012	175837.92	107.38	99469.15	42184.23	33916.80	7426.10	5651.11
2013	194929.48	114.41	116586.63	48206.51	35863.80	7691.71	5180.93

2014	223252.53	123.12	131430.50	56375.92	43505.50	9199.14	5509.26
2015	242363.85	128.59	152734.56	66780.47	53134.00	8531.91	6563.84
2016	260818.44	137.69	180573.60	74868.51	60103.19	7011.71	7625.20
2017	307714.49	147.34	217779.20	94085.05	83724.78	7304.91	8994.50
2018	345594.93	151.87	275589.30	112086.39	108727.98	8135.98	13361.92
2019	385893.04	158.47	341798.30	130490.22	111045.68	9710.95	12398.51
2020	388870.37	166.58	389762.79	118485.77	109133.31	9770.91	19221.50
2021	435255.02	172.75	495547.65	127685.72	119667.60	14112.41	15765.87
2022	493369.66	186.08	567357.36	140380.40	131000.08	20003.10	15722.34

Appendix-2: Real Values

Year	RGDP	RLA	RGFCF	RGE	RE	RFA
1975	34952.31	3448.28	4680.38	3187.00	1872.99	814.80
1976	36164.56	3666.15	5079.34	3978.02	2465.44	1051.21
1977	36529.92	4492.25	5454.12	4926.47	2462.18	1177.29
1978	37672.47	5548.22	6290.52	5108.23	1997.92	1620.18
1979	38475.00	5214.03	4804.96	4447.86	1909.61	1457.54
1980	37896.33	6987.88	5973.89	5632.60	1867.15	2175.50
1981	38984.31	7881.46	6564.57	6248.94	2456.49	2385.48
1982	43537.28	8490.39	7678.17	7532.48	2095.52	2421.05
1983	43714.68	10974.75	8499.68	9020.83	1463.14	2683.16
1984	47560.49	11892.54	8360.91	9002.84	2062.57	3083.75
1985	50120.14	13502.76	10097.83	9031.46	2948.45	2879.38
1986	52408.50	14408.62	8868.28	9212.53	2894.34	3283.17
1987	53299.31	14858.03	9868.85	9608.63	2496.55	2766.20
1988	57401.58	15278.00	10012.02	10527.78	3071.01	3790.52
1989	59885.75	17833.77	10996.38	12078.45	2814.37	3801.57
1990	62661.47	17972.46	10301.79	11917.77	3124.23	3894.29
1991	66650.77	19098.43	12613.65	13040.01	4090.58	3316.76
1992	69388.84	19483.02	13589.79	12262.70	6362.28	3620.79
1993	72065.62	20938.25	15665.23	12984.18	7255.85	3881.05
1994	77980.68	22858.83	16448.29	13147.44	7550.04	4522.65
1995	80685.40	26967.42	17806.56	14379.25	6493.56	4141.27
1996	84992.07	30480.04	19149.02	15892.04	6788.46	4879.02
1997	89463.48	32185.17	19388.92	16177.21	7219.42	4794.10
1998	92095.57	35452.75	20012.79	17179.10	8422.51	5037.90
1999	96224.88	37932.44	18362.11	16761.34	10036.80	4554.45
2000	102109.52	41593.84	19729.42	17832.06	13405.88	4715.19
2001	107856.68	44896.86	20703.34	19502.56	13595.49	4591.93
2002	107986.38	47702.41	21127.37	18819.98	11033.79	3380.97
2003	112246.50	51097.74	22364.15	19156.43	11385.99	3622.47
2004	117502.50	53890.74	23901.44	19580.34	11801.87	4140.21
2005	121590.61	57811.18	24247.26	21157.33	12110.48	4880.30
2006	125681.49	62003.32	26042.32	21307.23	11573.91	4235.31
2007	129969.35	64385.48	27381.64	23858.01	10604.15	4616.87
2008	137903.41	73929.30	30169.80	27279.45	10020.20	4953.86
2009	144154.86	81054.00	30783.32	32041.12	9874.73	5302.46
2010	151097.92	100911.26	33555.35	32896.83	7705.05	6304.68
2011	156268.10	91022.49	37393.88	29536.30	6433.85	5977.14
2012	163750.62	92631.53	39284.44	31585.32	6915.62	5262.65
2013	170384.61	101906.43	42136.51	31347.95	6723.19	4528.56
2014	181333.72	106752.57	45790.55	35336.73	7471.87	4474.82
2015	188473.08	118773.30	51931.51	41319.40	6634.80	5104.34

2016	189419.94	131141.96	54373.41	43650.07	5092.27	5537.82
2017	208852.62	147811.55	63857.60	56825.86	4958.00	6104.77
2018	227562.23	181465.96	73804.98	71593.59	5357.26	8798.36
2019	243516.72	215690.86	82345.49	70075.07	6128.07	7824.05
2020	233439.58	233975.30	71127.22	65512.92	5865.50	11538.70
2021	251960.05	286862.20	73914.60	69273.08	8169.38	9126.53
2022	265132.50	304892.83	75439.19	70398.29	10749.49	8449.05

Appendix-3: Real Values in Logarithm Form

Year	lnRGDP	lnRLA	lnRGFCF	lnRGE	lnRE	lnRFA
1975	10.4617	8.1456	8.4511	8.0668	7.5353	6.7029
1976	10.4958	8.2069	8.5329	8.2885	7.8101	6.9577
1977	10.5059	8.4101	8.6041	8.5024	7.8088	7.0710
1978	10.5367	8.6212	8.7468	8.5386	7.5999	7.3903
1979	10.5578	8.5591	8.4774	8.4002	7.5547	7.2845
1980	10.5426	8.8519	8.6952	8.6363	7.5322	7.6850
1981	10.5709	8.9723	8.7894	8.7402	7.8065	7.7772
1982	10.6814	9.0467	8.9461	8.9270	7.6476	7.7920
1983	10.6854	9.3034	9.0478	9.1073	7.2883	7.8948
1984	10.7698	9.3837	9.0313	9.1053	7.6317	8.0339
1985	10.8222	9.5106	9.2201	9.1085	7.9890	7.9653
1986	10.8668	9.5756	9.0902	9.1283	7.9705	8.0966
1987	10.8837	9.6063	9.1971	9.1704	7.8227	7.9252
1988	10.9578	9.6342	9.2115	9.2618	8.0298	8.2403
1989	11.0002	9.7888	9.3053	9.3992	7.9425	8.2432
1990	11.0455	9.7966	9.2401	9.3858	8.0469	8.2673
1991	11.1072	9.8574	9.4425	9.4758	8.3164	8.1067
1992	11.1475	9.8773	9.5171	9.4143	8.7581	8.1944
1993	11.1853	9.9493	9.6592	9.4715	8.8896	8.2639
1994	11.2642	10.0371	9.7080	9.4840	8.9293	8.4169
1995	11.2983	10.2024	9.7873	9.5735	8.7786	8.3288
1996	11.3503	10.3248	9.8600	9.6736	8.8230	8.4927
1997	11.4016	10.3793	9.8725	9.6914	8.8845	8.4751
1998	11.4306	10.4760	9.9041	9.7514	9.0387	8.5247
1999	11.4744	10.5436	9.8180	9.7268	9.2140	8.4239
2000	11.5338	10.6357	9.8899	9.7888	9.5034	8.4585
2001	11.5886	10.7121	9.9381	9.8783	9.5175	8.4321
2002	11.5898	10.7727	9.9583	9.8427	9.3087	8.1259
2003	11.6285	10.8415	10.0152	9.8604	9.3401	8.1949
2004	11.6742	10.8947	10.0817	9.8823	9.3760	8.3285
2005	11.7084	10.9649	10.0961	9.9597	9.4018	8.4930
2006	11.7415	11.0349	10.1675	9.9668	9.3565	8.3512
2007	11.7751	11.0726	10.2176	10.0799	9.2690	8.4375
2008	11.8343	11.2109	10.3146	10.2139	9.2124	8.5079
2009	11.8786	11.3029	10.3347	10.3748	9.1977	8.5759
2010	11.9257	11.5220	10.4210	10.4011	8.9496	8.7490
2011	11.9593	11.4189	10.5293	10.2934	8.7693	8.6957
2012	12.0061	11.4364	10.5786	10.3604	8.8415	8.5684
2013	12.0458	11.5318	10.6487	10.3529	8.8133	8.4182
2014	12.1081	11.5783	10.7318	10.4727	8.9189	8.4062
2015	12.1467	11.6850	10.8577	10.6291	8.8001	8.5378

2016	12.1517	11.7840	10.9036	10.6840	8.5355	8.6194
2017	12.2494	11.9037	11.0644	10.9477	8.5088	8.7168
2018	12.3352	12.1088	11.2092	11.1788	8.5862	9.0823
2019	12.4029	12.2816	11.3187	11.1573	8.7206	8.9650
2020	12.3607	12.3630	11.1722	11.0900	8.6768	9.3535
2021	12.4370	12.5668	11.2107	11.1458	9.0081	9.1189
2022	12.4880	12.6277	11.2311	11.1619	9.2826	9.0418