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Impact of Capital Expenditure on Economic Growth: A Study of Nepal

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Abstract

In countries like Nepal, government spending objectives range from promoting market-driven stability to intervening for alleviating suffering and preventing business loss, reflecting the tension between laissez-faire and interventionist approaches in economic development. The study explores government expenditure's role in Nepal's economic growth using econometric models like the Engle-Granger Cointegration Test and Error Correction Model. Recurrent, capital, and total expenditures are compared with GDP as indicators of Nepal's economic growth, showing significant positive relationships. The Unit Root Test indicates all variables becoming stationary after differencing once. The Johansen Test reveals 2 co-integrating equations, indicating enduring relationships among variables. Co-integrating Relation analysis demonstrates RE, CE, TE, and C's significant impact on GDP, with a low Durbin-Watson statistic suggesting possible autocorrelation. The Error Correction Term analysis highlights the significance of D(RE), D(CE), D(TE), and C, while ECT(-1) is significant at a 10% level. While the model explains a significant portion of GDP variation, additional factors must be considered for policymaking.

Keywords: *Capital Expenditure, Recurrent Expenditure, Government Expenditure, Effect, Performance, Economic growth*

1. Introduction:

Government expenditure plays a crucial role in fostering financial and social well-being, encompassing essential services and supporting sectors like agriculture and transportation. Macroeconomics analyzes economic functioning holistically, guiding government policies to manage variables like inflation and unemployment through fiscal and monetary measures. Research in Saudi Arabia underscores the significance of government size and investment in infrastructure and deregulation for sustainable economic growth (Abdullah, 2010). Government spending aims to create a peaceful and consistent environment, addressing regional disparities, promoting social overheads, infrastructure, education, capital goods growth, and developmental agendas (Lekhi, 2008).

Government spending's impact on economic development is debated, with some advocating for market-driven stability while others support intervention to mitigate suffering and prevent business loss (Nuruden & Usman, 2010). Sustainable development requires strategic investment and technological innovation across sectors (Acharya at al. 2012). Government expenditure covers administrative, infrastructure, social safety nets, disaster relief, and other welfare functions. In free market economies, government spending fills gaps in providing basic necessities, with categories like defense, health, education, and infrastructure being significant. Effective government expenditure is crucial for fostering growth and welfare (Goode, 2014).

Government spending patterns raise concerns due to deteriorating infrastructure despite increased budgets (Holmes & Hutton, 2010). The multiplier effect, as per Keynesian analysis, demonstrates how increased government spending boosts economic development (Singh & Sahni, 2014). While Nepalese research finds mixed results on government expenditure's impact on GDP (Mainali, 2015), recommendations suggest increasing spending in sectors like agriculture to reduce unemployment (Etale & Ayunku, 2015). International trade, particularly exports, is vital for economic growth due to resource allocation, comparative advantage, economies of scale, and foreign exchange earnings.

Granger Causality, ADF unit root, and Johansen Co-integration analyses reveal a sustained connection between government spending, exports, and economic expansion (Okur, 2015), with bidirectional causality emerging in the long run. Endogenous growth theory suggests that increased government spending on infrastructure, health, and education fosters economic development. However, some scholars argue that excessive government spending may hinder economic growth due to increased taxes and borrowing, leading to reduced private sector investment (Kharel, 2012). The Keynesian hypothesis advocates for increased government consumption to stimulate economic growth during periods of depression highlighting the ongoing debate on government expenditure's impact on economic development.

Before 1951, government spending in Nepal was informal and centralized under the Rana Regime, with citizens kept unaware of revenue. Following political changes in 1951, government expenditure became an annual fiscal event, initially published in the Nepal Raj Patra). From around 1959, expenditure reports were presented to regulatory bodies before publication. Objectives of government expenditure, outlined in a 1990 speech by the finance minister, included development program coordination, private sector integration, citizen welfare, and debt repayment. However, challenges in meeting development expenditure targets led to adjustments in the 1990 budget to ensure fiscal sustainability,

Despite over half a century of planned economic development, Nepal faces persistent challenges including low economic growth, inadequate investment, rapid population growth, high foreign debt, poverty, and widening wealth inequality. This study aims to investigate the impact of government spending on economic growth in Nepal, particularly examining the co-integration relationship between government expenditure and GDP. Research questions focus on trends and patterns of recurrent and capital expenditure, total expenditure, and borrowing, as well as their impact on economic growth.

2. Literature Review

Various research findings present divergent perspectives:

Holmes and Hutton (2010) analyzed time series data spanning from 1965 to 1996, concluding that heightened production spending (physical investments) negatively impacts growth, while increased consumer expenditure stimulates growth.

Matovu and Norris (2013) studied how government spending affects education demand and economic growth, using a dynamic analysis of schooling decisions. Their research found that increased public expenditure on education positively impacts macroeconomics and poverty reduction, particularly in countries with fixed or rising school costs.

Ram (2014) examined this relationship across 115 countries from 1990 to 2010, finding that government expenditure positively influences economic development using cross-sectional data analysis.

Abdullah (2014) examined how public spending affects economic expansion, emphasizing the importance of government size in economic performance. The author suggested boosting spending on social, economic, and infrastructure projects to improve economic growth.

Javed (2015) investigated the relationship among inflation, economic expansion, and government spending using econometric techniques such as ADF unit root test, ARDL, co-integration, and Granger-causality test on data from 2000 to 2015. The study revealed a notable correlation between inflation rate, economic growth, and federal expenditure.

Benneth (2016) examined Nigeria's fiscal policy's impact on poverty reduction, using a general equilibrium model. The study found that while government revenue positively redistributes income, effective government spending is crucial for poverty alleviation. Benneth emphasized the need for financial systems to redistribute income from the affluent to the less fortunate in society.

Nazir (2018) investigated the relationship between public expenditure, country exports, and economic development, utilizing panel data from 1995 to 2011. The study found a robust and positive correlation between these factors, indicating their importance in driving economic development.

Gemmell (2018) examined the relationship between GDP and public spending in the US from 1987 to 2012. The study found that government spending positively impacts GDP growth, but GDP growth doesn't necessarily lead to increased government spending. Ultimately, the findings suggest that Keynesian theory has more influence on US economic policy than Wagner's law, as per Granger-causality analysis.

Chaudhary and Acharya (2018) investigated the causal relationship between government expenditure, real interest rates, and economic growth in Nepal from 1975 to 2015. Employing ARDL cointegration technique, they established both long-run and short-run associations between the variables. The study confirmed bidirectional causality between government expenditure and real income throughout the period under examination.

Oni and Ozemhoka (2019) explored the relationship between government spending and economic progress in Nigeria. Using data from 1981 to 2011 and applying the ADF test for data stability and OLS econometric approach, they found a positive correlation between economic growth and government spending, indicating the significant impact of government expenditure on economic expansion in Nigeria.

Rasily and Paudel (2019) analyzed Nepalese data from fiscal years 1974/75 to 2017/18, revealing a long-term relationship between government expenditure and economic growth. They recommended mobilizing both current and capital expenditures for optimal economic growth outcomes.

Ertekin and Bulut (2021) examined the impact of public expenditure on economic growth in developed OECD countries. Their study revealed a positive short-term effect of public expenditure on economic growth, but no significant association was found in the long run.

Sigdel (2022) employs conventional ECM to analyze government spending and economic growth in Nepal from 1990 to 2021, utilizing both descriptive and analytical research techniques with secondary data. The study finds significant impact of government spending on economic growth, advocating for enhanced capital expenditure mobilization for accountable development, with EA not statistically significant but other variables showing positive relationships at various significance levels.

Paudel (2023) conducted a comprehensive analysis of public expenditure using advanced econometric methods on time-series data. The study emphasizes the importance of timely and efficient spending of allocated budgets to achieve policy objectives and economic growth. It suggests prioritizing investment in education and rationalizing health expenditure by allocating more to capital health expenditure over current health expenditure for better outcomes.

Nepal's economic plans since the late 1950s have seen a consistent rise in government spending, aiming for robust GDP growth. However, Barma (2010) noted a disconnect between increasing government expenditure and sluggish GDP growth, prompting reliance on foreign loans to cover deficits. Despite decades of development efforts, Nepal grapples with unresolved economic challenges like poor growth, low investment, rapid population growth, and significant debt burdens, necessitating a critical examination of government spending's impact on development. Nepalese research typically focuses on narrow indicators like GDP, overlooking broader macroeconomic factors, underscoring the need for comprehensive studies to assess government expenditure's effectiveness in addressing economic woes and reducing poverty despite the common fiscal deficit issues faced by emerging nations.

2.1. Conceptual Framework

The conceptual framework presented here forms the foundation of this study, illustrating how various government expenditures impact the country's economic growth.

The relationship between government expenditure components (Recurrent Expenditure, Capital Expenditure, Total Expenditure) and economic growth (GDP) in developing countries like Nepal is crucial. Recurrent Expenditure typically addresses day-to-day operational costs, while Capital Expenditure focuses on infrastructure and long-term investments. Total Expenditure encompasses both, influencing GDP through various channels like productivity, employment, and public service delivery, forming the basis of the conceptual framework for economic growth analysis.

Independent Variable		**Dependent Variable**
Government Expenditure Recurrent Expenditure (RE) Capital Expenditure (CE) Total Expenditure (TE)	→	Economic Growth (GDP)

Figure 1: Conceptual Framework by Researcher

3 Research methodology

This section outlines the research strategy, including study population, sample size, data type, sources, and analytical methods, covering sampling techniques and data collection procedures. Additionally, it lists primary statistical techniques and models used to explore the relationship between government spending and economic expansion in Nepal.

3.1 Research Design

A causal-comparative research design was employed to examine the relationship between various government expenditures and economic growth in Nepal. Causality and co-integration analyses were conducted within this design framework. The Augmented Dickey Fuller (ADF) unit root test was utilized to test stationarity, while the co-integration ARDL approach as employed to analyze the direction of causality and long-run connections between government expenditures and macroeconomic factors.

3.2 Population and Sample Size

The study examines the correlation between government spending and economic growth in Nepal, utilizing data from various sources including books, private sources, articles, and official records. The research spans 25 years from 1999 to 2023, focusing on post-liberalization data, collected as time series data for both dependent and independent variables.

3.2 Nature and Source of Data

This study utilizes secondary data, primarily sourced from the Quarterly Economic Bulletin by Nepal Rastra Bank and the Economic Survey by the Ministry of Finance, supplemented by various books, articles, journals, newspapers, and websites to ensure data reliability and validity for analyzing government expenditure and macroeconomic activities in Nepal.

3.3 Data Analysis Technique

To investigate the influence, the Engle-Granger Cointegration Test and Error Correction Model are employed, aligning with the theoretical framework. Thus, the econometric estimation model is formulated accordingly.

$GDP = \beta 0 + \beta 1\ RE + \beta 2\ CE + \beta 3\ TE + \varepsilon t$

Where,

GDP= Gross Domestic Product

RE= Recurrent Expenditure

CE= Capital Expenditure

TE= Total Expenditure

εt = Stochastic Error Term

4. Results and Discussion

Presentation and discussion are Empirically econometric analysis. The econometric analysis involves the application of various statistical tests, including the Unit Root Test, Co-integration Test by Johansen, Residual Test, and Error Correction Model (ECM). Specifically, focus on the Augmented Dickey-Fuller (ADF) tests conducted for GDP, recurrent expenditure (RE), capital expenditure (CE) and total expenditure (TE) over the period from 1999 to 2023. These tests aim to assess whether the data series exhibit unit roots, and the results are summarized in Table 1, which provides statistics for the Unit Root Test.

4.1. Unit Root Test

The unit root test results show that all variables under examination display a trend stationary behavior, indicating a consistent, non-explosive pattern over time. While these variables exhibit a discernible trend, it is not characterized by dramatic growth or decline, but rather remains stable. In summary, they demonstrate a steady and non-explosive trend.

Table: 1: Summary of Unit Root Test

Variable	Level Form		First Difference		
	Specification	t-stat	Specification	t-stat	Results
GDP	Level	0.263977 (0.91)	Intercept	--3.36 (0.02)	I (1)
RE	Level	-0.317 (0.90)	Intercept	-3.98 (0.00)	I (1)
CE	Level	-0.47 (0.88)	Intercept	-3.61 (0.01)	I (1)
TE	Level	-0.12 (0.93)	Intercept	-3.28 (0.02)	I (1)

Source: Researcher's Estimation using EViews 12

Below, provides a succinct summary of the unit root test results for each variable.

GDP, the test statistic (t-stat) of 0.263977 with a p-value of 0.91 suggests non-stationarity in the GDP variable at its original level. However, after differencing once, the test statistic of -3.36 with a p-value of 0.02 indicates that the GDP variable becomes stationary (I(1)).

RE, the test statistic of -0.317 with a p-value of 0.90 indicates non-stationarity in the recurrent expenditure variable at its original level. However, after differencing once, the test statistic of -3.98 with a p-value of 0.00 suggests that the recurrent expenditure variable becomes stationary (I(1)).

CE, the test statistic of -0.47 with a p-value of 0.88 indicates non-stationarity in the capital expenditure variable at its original level. However, after differencing once, the test statistic of -3.61 with a p-value of 0.01 suggests that the capital expenditure variable becomes stationary (I(1)).

TE, the test statistic of -0.12 with a p-value of 0.93 implies non-stationarity in the total expenditure variable at its original level. However, after differencing once, the test statistic of -3.28 with a p-value of 0.02 suggests that the total expenditure variable becomes stationary (I(1)).

In summary, all variables (GDP, RE, CE, and TE) are non-stationary at their original levels, but they become stationary after differencing once, indicating they are integrated of order 1 (I(1)). This suggests that they exhibit a unit root and require differencing to achieve stationarity, which is crucial for time series analysis. These tests were conducted using EViews 12 by the researcher.

4.2 Johansen test of co-integration

Table 2 displays the results of the Johansen test, which specifically examines co-integration rank tests. These tests are essential for determining the number of co-integrating equations in the dataset. The table includes outcomes from the unrestricted co-integration rank test, utilizing both the trace statistic and the maximum eigenvalue statistic as distinct statistical measures.

Table: 2: Johansen test of co-integration

Date: 04/22/24 Time: 14:03

Sample (adjusted): 2001 2023

Included observations: 23 after adjustments

Trend assumption: Linear deterministic trend

Series: GDP RE CE TE

Lags interval (in first differences): 1 to 1

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Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.753409	69.89824	47.85613	0.0001
At most 1 *	0.707512	37.69767	29.79707	0.0050
At most 2	0.334731	9.423067	15.49471	0.3277
At most 3	0.002132	0.049094	3.841465	0.8246

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.753409	32.20057	27.58434	0.0118
At most 1 *	0.707512	28.27460	21.13162	0.0042
At most 2	0.334731	9.373973	14.26460	0.2563
At most 3	0.002132	0.049094	3.841465	0.8246

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Source: Researcher's Estimation using EViews 12

The table showcases the outcomes of the Johansen test of co-integration, examining the long-term relationships among GDP, RE, CE, and TE. The trace test reveals 2 co-integrating equations at a significance level of 0.05, rejecting the hypothesis for "None" and "At most 1" categories. Similarly, the max-eigenvalue test also identifies 2 co-integrating equations at a 0.05 significance level, rejecting the same hypotheses. In essence, both tests affirm the presence of 2 co-integrating equations, signifying enduring relationships among the variables, supported by the rejection of the hypotheses for "None" and "At most 1" categories.

Table: 3: Co-integrating Relation

Dependent Variable: GDP
Method: Least Squares
Date: 04/22/24 Time: 15:29
Sample: 1999 2023
Included observations: 25

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RE	-5.770039	2.050255	-2.814303	0.0104
CE	-11.96301	2.201806	-5.433272	0.0000
TE	9.593890	1.776385	5.400794	0.0000
C	38476.08	4603.252	8.358456	0.0000

R-squared	0.992572	Mean dependent var	196410.0
Adjusted R-squared	0.991511	S.D. dependent var	157836.7
S.E. of regression	14542.76	Akaike info criterion	22.15322
Sum squared resid	4.44E+09	Schwarz criterion	22.34824
Log likelihood	-272.9153	Hannan-Quinn criter.	22.20731
F-statistic	935.3505	Durbin-Watson stat	0.759566
Prob(F-statistic)	0.000000		

Source: Researcher's Estimation using EViews 12

This regression analysis offers significant insights into the correlation between economic variables and Gross Domestic Product (GDP), particularly within the context of Nepal.

RE (Recurrent Expenditure): The coefficient is -5.770039 with a standard error of 2.050255. The t-statistic is -2.814303, and the probability value is 0.0104. This variable is statistically significant at the 0.05 level, indicating that recurrent expenditure has a significant impact on GDP.

CE (Capital Expenditure): The coefficient is -11.96301 with a standard error of 2.201806. The t-statistic is -5.433272, and the probability value is 0.0000. This variable is highly statistically significant ($p < 0.001$), indicating that capital expenditure has a significant impact on GDP.

TE (Total Expenditure): The coefficient is 9.593890 with a standard error of 1.776385. The t-statistic is 5.400794, and the probability value is 0.0000. This variable is highly statistically significant ($p < 0.001$), indicating that total expenditure has a significant impact on GDP.

C (Constant): The constant term has a coefficient of 38476.08 with a standard error of 4603.252.

The t-statistic is 8.358456, and the probability value is 0.0000. This variable is highly statistically significant ($p < 0.001$), indicating that the intercept term is significant.

In summary, all variables (RE, CE, TE, and C) demonstrate statistical significance at the 0.05 level or lower, indicating their substantial impact on GDP. This analysis implies that the independent variables can positively influence Nepal's GDP in the short term. However, it's crucial to consider additional economic and contextual factors when formulating policy decisions, despite the model's ability to explain a significant portion of GDP variation (high R-squared value). Lastly, the low Durbin-Watson statistic (0.75) suggests possible autocorrelation in the residuals, highlighting the need for further investigation and model refinement.

4.3. Unit Root Test Result of Residual

The Durbin-Watson statistic assesses autocorrelation in residuals, with a value near 2 indicating minimal autocorrelation. However, the low value of 0.75 in this instance suggests the potential presence of autocorrelation, as observed in Table 4.

Detect/ removal Serial correlation (Auto correlation) of residual

To systematically address serial correlation in the model, begin by introducing a one-period lag for the dependent variable. Subsequently, conduct a regression analysis, and if the Durbin-Watson (DW) value approximates two, it indicates the absence of serial correlation within the model.

Table: 4: Test of Serial correlation

Breusch-Godfrey Serial Correlation LM Test:
Null hypothesis: No serial correlation at up to 2 lags

F-statistic	0.334228	Prob. F(2,17)	0.7205
Obs*R-squared	0.907999	Prob. Chi-Square(2)	0.6351

Source: Researcher's Estimation using EViews 12

Based on the Breusch-Godfrey Serial Correlation LM Test, since the Probability Chi-square (1) value exceeds 5%, there is no evidence of serial correlation.

Test of Heteroskedasticity/homoscedastic

Overall, the high p-values for both the F-statistic and the chi-square statistic indicate that there is no significant evidence of heteroskedasticity in the regression model.

Table: 5: Test of Heteroskedasticity/homoscedastic

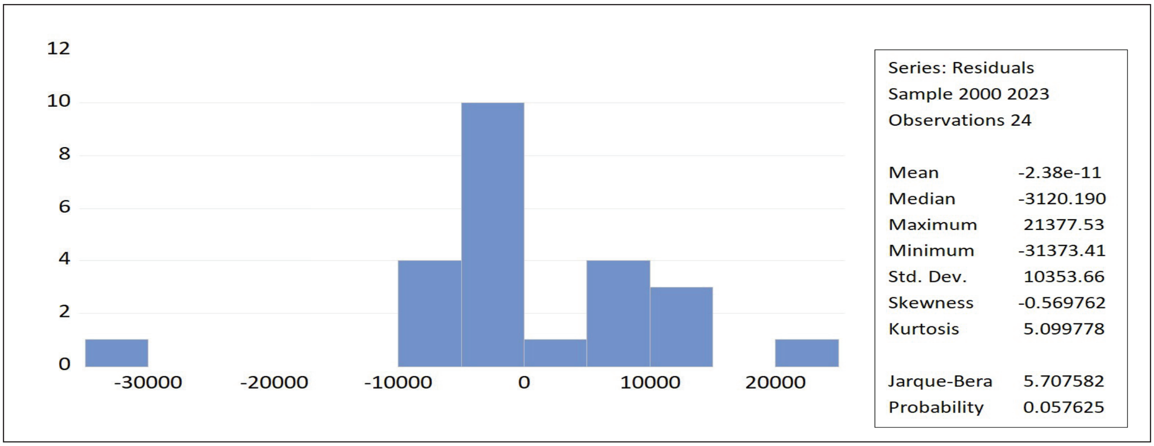
Heteroskedasticity Test: Breusch-Pagan-Godfrey
Null hypothesis: Homoskedasticity

F-statistic	1.839349	Prob. F(4,19)	0.1630
Obs*R-squared	6.699353	Prob. Chi-Square(4)	0.1527
Scaled explained SS	8.606922	Prob. Chi-Square(4)	0.0717

Source: Researcher's Estimation using EViews 12

Test of normality

The outcome indicates that the residuals are normally distributed, which is indicative of a desirable model.



Source: Researcher's Estimation using EViews 12

Table: 6: Unit Root Test Result of Residual

Null Hypothesis: D(ECT) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=2)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.320811	0.0005
Test critical values:	1% level	-3.857386	
	5% level	-3.040391	
	10% level	-2.660551	

*MacKinnon (1996) one-sided p-values.
Source: Researcher's Estimation using EViews 12

The t-statistic exceeds the critical value of 3.34 at the 5 percent level, indicating that the error correction term (ECT) does not have a unit root. Furthermore, the residuals of the model are stationary, and the variables are co-integrated, suggesting a long-run relationship between them.

4.4. Error Correction Model

An error correction model is devised to encapsulate both long-term imbalances and short-term dynamics, reflecting a transient relationship. The estimated error correction model is presented in Table 7.

Table: 7 Error Correction Model

Dependent Variable: D(GDP)
Method: Least Squares
Date: 04/22/24 Time: 15:16
Sample (adjusted): 2004 2023
Included observations: 20 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(RE)	-2.958005	1.305519	-2.265770	0.0387
D(CE)	-6.422633	1.543110	-4.162136	0.0008
D(TE)	5.698890	1.254130	4.544100	0.0004
C	7180.135	3281.240	2.188239	0.0449
ECT(-1)	-69309.65	37563.01	-1.845157	0.0848

R-squared	0.762118	Mean dependent var	24445.52
Adjusted R-squared	0.698683	S.D. dependent var	16872.28
S.E. of regression	9261.589	Akaike info criterion	21.31746
Sum squared resid	1.29E+09	Schwarz criterion	21.56639
Log likelihood	-208.1746	Hannan-Quinn criter.	21.36605
F-statistic	12.01414	Durbin-Watson stat	1.952357
Prob(F-statistic)	0.000141		

Source: Researcher's Estimation using EViews 12

In the error correction model presented in Table 7, the following variables and their coefficients are examined:

D(RE): The coefficient is -2.958005 with a standard error of 1.305519. The t-statistic is -2.265770, and the probability value is 0.0387. This variable is statistically significant at the 0.05 level, indicating that changes in recurrent expenditure have a significant impact on changes in GDP.

D(CE): The coefficient is -6.422633 with a standard error of 1.543110. The t-statistic is -4.162136, and the probability value is 0.0008. This variable is highly statistically significant ($p < 0.001$), indicating that changes in capital expenditure have a significant impact on changes in GDP.

D(TE): The coefficient is 5.698890 with a standard error of 1.254130. The t-statistic is 4.544100, and the probability value is 0.0004. This variable is highly statistically significant ($p < 0.001$), indicating that changes in total expenditure have a significant impact on changes in GDP.

C: The constant term has a coefficient of 7180.135 with a standard error of 3281.240. The t-statistic is 2.188239, and the probability value is 0.0449. This variable is statistically significant at the 0.05 level, indicating that the intercept term is significant.

ECT(-1): The coefficient is -69309.65 with a standard error of 37563.01. The t-statistic is -1.845157, and the probability value is 0.0848. This variable exhibit statistical significance at the 0.10 level.

In summary, D(RE), D(CE), D(TE), and the constant term (C) are statistically significant at the 0.05 level or lower, indicating their significant impact on changes in GDP. However, ECT(-1) is statistically significant at the rate of 10 percent in this model .

5. Conclusion and Implication

Unit Root Test: All variables initially exhibit non-stationarity but become stationary after differencing once, indicating integration of order 1 (I(1)) and necessitating differencing for stationarity. Conducted using EViews 12 by the researcher.

Johansen Test of Co-integration: Results reveal 2 co-integrating equations at a 0.05 significance level, indicating enduring relationships among variables. Both trace and max-eigenvalue tests affirm this, rejecting hypotheses for "None" and "At most 1" categories.

Co-integrating Relation: RE, CE, TE, and C show statistical significance at or below 0.05, implying their substantial impact on GDP. While the model explains a significant portion of GDP variation, additional factors must be considered for policymaking. The low Durbin-Watson statistic (0.75) suggests possible autocorrelation in residuals, warranting further investigation.

ECT: D(RE), D(CE), D(TE), and the constant term (C) are statistically significant at 0.05 or lower, indicating their impact on GDP changes. However, ECT(-1) is statistically significant at a 10% level in this model.

The study underscores the importance of government expenditure on Nepal's economic growth, filling a gap in existing literature and offering valuable insights for policymakers. It suggests considering various factors in policy-making and highlights the need for further research to explore additional variables' implications. Additionally, it contributes to the ongoing debate on the impact of government spending on economic development and provides a foundation for future studies focusing on financial institutions and government agencies to enhance understanding of Nepal's economic expansion.

References

Abdullah, E. E. (2014). Government public expenditures: Effect on economic growth (the case of Nigeria, 1961-2013). *International Journal of Research in Management, Science & Technology*, *2*(1), 16-29.

Abdullah, N. (2010). Financial development and economic growth in the UAE: Empirical assessment using ARDL approach to co-integration. *International Journal of Economics and Finance*, *4*(5), 105-115.

Acharya, V., Engle, R., & Richardson, M. (2012). Capital shortfall: A new approach to ranking and regulating systemic risks. *American Economic Review*, *102*(3), 59-64.

Barma, B. R. (2010). *Trend and pattern of public expenditure in Nepal* (Doctoral dissertation, Department of Economics, Tribhuvan University).

Bennith, S. (2016). The relationship between government expenditure and poverty: A co-integration analysis. *Romanian Journal of Fiscal Policy (RJFP)*, *1*(1), 29-37.

Chaudhary, A., & Acharya, M. (2018). Government expending, real interest rate, and economic growth in Nepal. *Economic Journal of Nepal*, *41*(3-4), 41-57.

Etale, L. M., & Ayunku, P. E. (2015). The relationship between interest rate and economic growth in Nigeria: An Error Correction Model (ECM) approach. *International Journal of Economics and Financial Research*, *2*(6), 127-131.

Ertekin, S., & Bulut, S. (2021). The relation of public expenditures with economic growth in OECD Countries. *Yönetim ve Ekonomi Dergisi*, *28*(1), 187-203.

Gemmell, T. M. (2018). The impact of government expenditures on economic growth in Jordan (1980-2013). *International Business Research*, *9*(1), 99.

Goode, P. F. (2014). Converting social problems into business opportunities: The new meaning of corporate social responsibility. *California Management Review (pre-1986)*, *26*(000002), 53.

Holmes, J. M., & Hutton, P. A. (2010). On the casual relationship between government expenditures and national income. *The Review of Economics and Statistics*, 87-95.

Javed, A. Y. (2015). Inflation, economic growth and government expenditure of Pakistan: 1980-2010. *Procedia Economics and Finance*, *5*, 58-67.

Kharel,R. S. (2012). Does Nepal's financial structure matter for economic growth? *NRB Economic Review*, *24*(2), 31-46.

Lekhi, T. R. (2008). Agricultural transformation around Koshi Hill region: A rural development perspective. *Nuta Journal*, *6*(1-2), 95-101.

Mainali, K. (2015). Solid-state transformer and MV grid tie applications enabled by 15 kV SiC IGBTs and 10 kV SiC MOSFETs based multilevel converters. *IEEE Transactions on Industry Applications*, *51*(4), 3343-3360.

Matovu V.M & Norris, J. M. (2013). Public spending composition in Uganda and its implications for growth and poverty reduction. *Public Finance Review*, *41*(2), 227-247.

Nazir, R. (2018). Does fiscal policy matter for growth? Empirical evidence from Pakistan. *International Journal of Economics and Finance*, *5*(3), 205-212.

Nurudeen, A., & Usman, A. (2010). Government expenditure and economic growth in Nigeria, 1970-2008: A disaggregated analysis. *Business and economics journal*, *4*(1), 1-11.

Okur, A (2015). Comparison of multiple Amber force fields and development of improved protein backbone parameters. *Proteins: Structure, Function, and Bioinformatics*, *65*(3), 712-725.

Oni, A., & Ozemhoka, M. (2019). Impact of public expenditure on the growth of Nigerian economy. *European scientific journal*, *10*(28), 219-229

Paudel, R. C. (2023). Capital expenditure and economic growth: A disaggregated analysis for Nepal. *Cogent Economics & Finance*, *11*(1), 1-21

Ram, Z. (2014). The nexus between government expenditure and economic growth: Evidence of the Wagner's law in Kuwait. *Review of Middle East Economics and Finance*, *15*(1), 1-8

Rasaily, A., & Paudel, S. (2019). Impact of government expenditures on economic growth: Case of Nepal. *International European Extended Enablement in Science, Engineering & Management*, 10(6), 167–174.

Sigdel, S. (2022). Public spending and economic growth: A study of Nepal during fiscal year 1990/91-2020/21. *Journal of Kathmandu BernHardt College*, (4), 1-16.

Singh, B., & Sahni, B. S. (2014). Causality between public expenditure and national income. *The Review of economics and Statistics*, 66(4), 630-644.