Bangladesh Journal of Integrated Thoughts, 2024
DOI: https://doi.org/10.52805/9spafm98

Budget Deficit and Growth Nexus in Bangladesh: An ARDL Approach

Md. Sahadat Hosain[1], Sayeed Bin Kamal Chowdhury[2] ,Mohammad Sohaib[3] and Zobayer Ahmed[4]

ABSTRACT

The study explores the relationship between budget deficits and economic growth in Bangladesh from 1980 to 2022, using an Autoregressive Distributed Lag (ARDL) model. It also identifies how foreign direct investment, fiscal disparities, and economic openness impact GDP per capita. The analysis reveals that fiscal deficits may stimulate economic activity in the short term under certain conditions; however, over an extended period, they are likely to increase borrowing costs and reduce private sector investment. This diverse impact underscores the complex role of fiscal policies within economic dynamics. The study proposes a strategy to capitalize on the short-term benefits of fiscal deficits while maintaining long-term budgetary stability. The primary limitations involve reliance on historical data and the ARDL model's inability to encompass all economic interactions, suggesting that further research could use more advanced methodologies or contemporary data sets.

KEYWORDS

Gross Domestic Product, Foreign Direct Investment, Budget Deficit, Trade Openness, Bangladesh

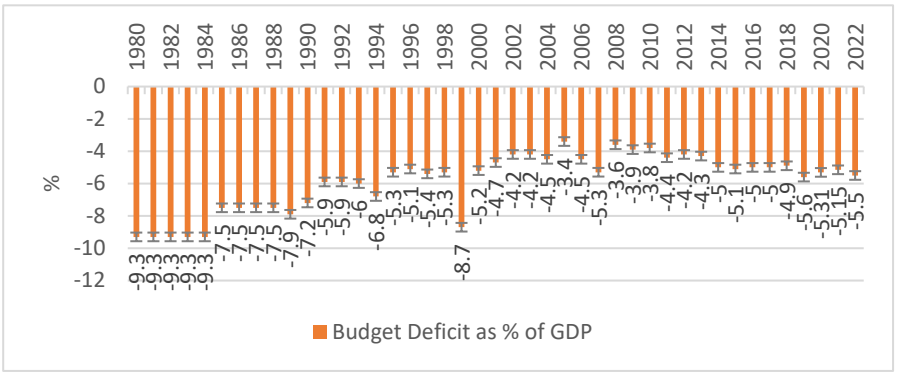
1. Introduction

Bangladesh, a South Asian economy, has achieved significant economic growth by improving living standards and reducing poverty through a diversified economy encompassing services, textiles, and agriculture. However, the complex relationship between real economic growth and fiscal

[1] Department of Development Studies, University of Chittagong, Email: sahadatcuds@gmail.com
[2] Lecturer, Department of Development Studies, University of Chittagong
Email: sayeedbinkamal@gmail.com
[3] Assistant Professor, Department of Development Studies, University of Chittagong
Email: asaeedmdsohaib.dsdu@gmail.com
[4] Department of Economics & Banking, International Islamic University Chittagong: Chittagong, Email: ecozobayer@gmail.com

policy, particularly budget deficits, remains underexplored. By following this assumption, our study reassessed this issue using a time series approach. Okafor, Ekesiobi et al. (2022) clarified that if a government consistently spends more than it earns, resulting in a budget deficit, it can result in a current account deficit. This occurs when the government relies heavily on borrowing from overseas to address its deficit, leading to a re-evaluation of the domestic currency. Additionally, the situation may prompt an upsurge in import-driven consumer spending due to a rise in aggregate demand.

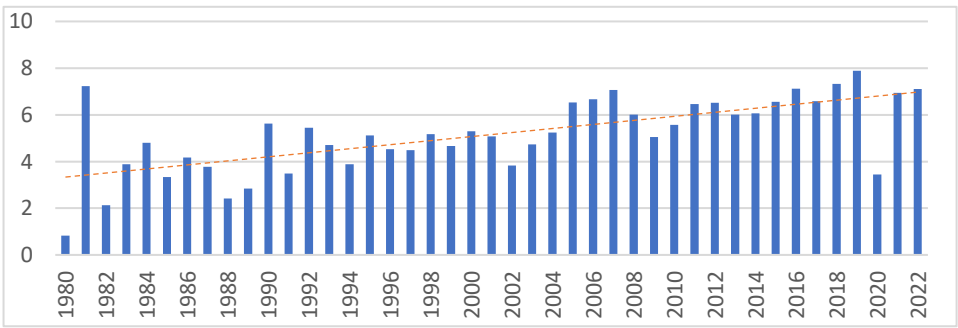
Figure 1: Budget deficit as a percentage of GDP and linear trend



On the contrary, economic growth is characterized by a quantitative improvement in the real overall value of goods and services produced by an economy during a specific time frame. It serves as a core indicator of an economy, typically measured by the percentage change in its gross domestic product (GDP), as outlined by (Pelsa and Balina 2022).

Here, Figure 1 illustrates the linear trend of the budget deficit, and Figure 2 presents the trend in GDP growth, using GDP per capita data.

Figure 2: GDP growth and linear trend



Chowdhury, Hosain et al. (2024) highlight that the relationship between budget deficits and economic growth in Bangladesh is multifaceted, with some studies suggesting a positive impact on growth in the short term, while others point to negative effects in the long run, particularly due to increased borrowing costs and reduced private investment. Examining the influence of fiscal deficit on GDP per capita serves as an indicator of economic growth and is an expected area of investigation, especially in the context of Bangladesh. Numerous studies have explored this relationship, with Rana and Wahid (2017) discovering a statistically significant inverse connection between the budget deficit and economic growth in Bangladesh. Conversely, Biplob (2019) presented divergent findings, suggesting a positive impact of fiscal shortfall on GDP expansion in both the near and extended future in Bangladesh. Additionally, Emana (2021) and Alam, Sadekin et al. (2022) conducted separate studies to examine the effect of fiscal shortfall on GDP expansion in Bangladesh through time series data. And various analytical approaches.

Apart from the specific examination of the budget deficit, additional research has developed into the broader implications of broader economic indicators on GDP growth in Bangladesh. Chowdhury, Hamid et al. (2019) analysed the impact of various aggregate economic variables, including GDP expansion, inflation, actual interest rates, currency exchange rates, and increases in household consumption expenditures, on economic growth in Bangladesh. Additionally, Hossin (2023) investigated the correlation among the deregulation of interest rates, the advancement of financial systems, and the economic expansion in Bangladesh. The impact of budget deficits on economic growth is not yet confined to Bangladesh. Research conducted in other nations, including Ethiopia and Nigeria, has explored this correlation (Sirah 2020, Umeh, Ochuba et al. 2021). These investigations provide valuable insights into the mixed effects of fiscal shortfalls on GDP expansion from different country perspectives.

The relationship between budget deficits and economic growth remains a subject of significant debate, particularly in developing economies like Bangladesh, where fiscal policy plays a crucial role in maintaining economic stability. Empirical studies yield mixed results, with some indicating deficits stimulate growth and others warning of long-term harms. Bangladesh's unique economic context amplifies this complexity. This study aims to reconcile these conflicting views and deepen the understanding of the impact of budget deficits on Bangladesh's growth. Existing literature often overlooks the dynamic interactions of foreign direct investment, trade openness, and inadequately explores Keynesian and Neoclassical theories. Thus, a comprehensive and methodologically robust analysis tailored to Bangladesh is

needed. Employing an ARDL approach, this study examines the relationship between the budget deficit and growth in Bangladesh. The ARDL model's ability to manage different integration orders and capture both long- and short-term dynamics makes it ideal for this analysis. Besides, Hossain, Mahadi et al. (2025) highlight that Zakat and Islamic microfinance are vital in improving livelihoods and addressing financial struggles, significantly contributing to Bangladesh's sustainable economic growth. The study aims to reassess the theoretical and practical understanding of the budget deficit-growth nexus and inform sustainable development policy, with the objectives of exploring the theoretical relationship and the empirical nexus in Bangladesh, based on the findings.

After the introductory section, this paper is structured as follows: Section 2 offers an overview of the existing research and identifies research gaps. In Section 3, the methodology. Subsequently, in Section 4, we empirically tested the connection between fiscal deficit and economic growth using the ARDL approach, incorporating residual diagnostic tests to ensure the reliability of the findings. Section 5 synthesizes the findings, discusses policy implications, and suggests directions for future research. Finally, the conclusion is followed by policy suggestions in Section 6.

2. Literature Review

Theoretically, the study on the economic nexus between budget deficits and economic growth in Bangladesh is grounded in both Keynesian and Neoclassical theories. Keynesian theory, as articulated by Chambers, Dimson et al. (2015), posits a positive relationship, advocating for increased government spending during downturns to stimulate economic growth by boosting demand and economic activity. Conversely, the Neoclassical perspective, as detailed by Canterbery (2009), suggests a negative relationship, arguing that persistent deficits raise interest rates, thereby crowding out private investment and hindering long-run economic growth. This theoretical dichotomy underscores the multifaceted effects of fiscal policies on economic growth, thereby setting the stage for an empirical examination of the Bangladesh economy over time.

Numerous academic research papers have examined the relationship between budget deficits and economic growth using various analytical methods. Studies covering multiple countries, like those by Nazari, Asadi et al. (2023) on OPEC countries and Tung (2018) on Vietnam, often find negative impacts, suggesting that deficits can lead to unsustainable debt levels and hinder economic performance. Conversely, findings from Shah (2023) on Pakistan and Arif and Arif (2023) across 66 countries reveal mixed effects, where political

stability, quality of governance, and the nature of deficit financing can turn the economic outcomes positive.

In addition, Islamic finance, especially Zakat and microfinance, is vital for empowering communities and fighting poverty, directly shaping the economic growth of Bangladesh (Khan Md Abdus Subhan 2022). Such variability emphasizes the complexity of fiscal policy impacts, where the specific context of deficit usage and economic conditions play a crucial role (Tung 2018, Arif and Arif 2023, Nazari, Asadi et al. 2023, Shah 2023).

On the contrary, studies such as those by Hussain and Haque (2017) and Rana and Wahid (2017) report a generally negative impact of budget deficits on growth, suggesting crowding-out effects and higher interest rates that hinder private investment, other studies offer a contrasting positive perspective. For instance, Biplob (2019) and Alam (2022) found a beneficial impact from budget deficits on economic growth, suggesting that under certain conditions, such as low private investment levels and high unemployment, deficit spending can stimulate economic demand and growth. This duality in findings suggests a nuanced economic landscape where the impact of fiscal policy is contingent upon broader economic conditions and policies (Hussain and Haque 2017, Biplob 2019, Alam 2022).

Despite extensive studies, a gap remains in understanding the conditional factors that influence the effectiveness of deficit spending. Most studies focus on direct correlations without investigating the mechanisms through which budget deficits affect economic variables, such as investment and consumption, in different economic contexts. Furthermore, there is a lack of consensus on the long-term effects of budget deficits on economic growth, with studies showing both positive and negative outcomes. This indicates a need for more detailed research that considers varying economic conditions, the nature of government spending, and its direct impacts on different sectors of the economy.

3. Methodology

3.1 Data and Source

The research utilized time series data obtained from the World Development Indicators (Bank 2016) and the Bangladesh Economic Review (BER 2022). The sample size for Bangladesh was selected over the period from 1980 to 2022. The dependent variable is selected as GDP growth Table 1.

Table 1: Variables and data source

Variable Acronym	Variable name	Data	Data source
GDP	GDP Per Capita	GDP per capita (current US$)	WDI
FDI	Foreign Direct Investment	Foreign direct investment, net inflows (BoP, current US$)	WDI
TO	Trade Openness	Trade as a percentage of GDP	WDI
BD	Budget Deficit	Budget Deficit	Bangladesh Economic Review

3.2 Nature of Analysis

The research employs the Autoregressive Distributed Lag (ARDL) regression to analyse the effects of Foreign Direct Investment (FDI), Budget Deficit (BD), and Trade Openness (TO) on GDP per capita, a proxy for economic growth, in Bangladesh over the temporal period from 1980 to 2022. The dependent variable, GDP Per Capita, is regressed against these key economic indicators, with FDI and BD expected to have a positive influence on economic growth. At the same time, Trade Openness is hypothesized to have a detrimental impact. The model's goodness of fit is evaluated using the R-squared statistic, and the F-statistic tests the overall significance of the regression model. The robustness of the results is assessed with standard errors and t-statistics to confirm the significance of the coefficients.

3.1 Theoretical Framework

The theoretical framework examines the Keynesian economic model, which advocates for increased government spending during recessions to stimulate demand Chambers, Dimson et al. (2015), with the Neoclassical perspective that cautions against long-term risks associated with budget deficits, such as higher interest rates that may displace private investment (Barro 1989, Canterbery 2009). The contrasting perspectives highlight the complexity of how fiscal policy influences economic growth.

3.2 Econometric Model

The association between the dependent variable and the independent variables is expressed in the following equation.

$$GDP_t = \alpha + \beta_1 GDP_{t-1} + \sum_{i=1}^{n=4} \gamma_i FDI_{t-i} + \Delta BD_t + \theta_1 TO_{t-1} + \epsilon_t \text{----------} (1)$$

Here, GDP_t is the GDP per capita as a proxy of economic growth at time *t*. GDP_{t-1} is the lag of GDP per capita by one period. FDI_{t-i}, where $i =$

$1, 2, 3, and\ 4$, are the foreign direct investment levels lagged by periods, respectively. BD_t is the budget deficit at time *t* (current period, no lag). TO_{t-1} is the trade openness lagged by one period. α is the intercept, and $\beta_1, \gamma\ \ , \Delta$ and θ_1 are the coefficients of the respective variables. ϵ_t is the error term at time *t*.

4. Result Analysis

4.1 Descriptive Statistics

The descriptive statistics of the data in Table 2 indicate that the GDP per capita (GDP PC) exhibits a higher mean value compared to the median, suggesting a skewed distribution with outliers or extremely high values. The significant difference between the mean and median, combined with a high standard deviation, points to substantial variability in GDP per capita. The skewness and kurtosis values, along with a significant Jarque-Bera test, further corroborate that the GDP per capita data are typically distributed and exhibit a right-skewed distribution, with a long tail on the higher end of the values.

Table 2: Descriptive statistics

	GDP PC	FDI	BD	TO
Mean	730.9535	7.25E+08	-5.878140	29.03372
Median	410.0485	1.90E+08	-5.300000	27.88006
Maximum	2688.306	2.83E+09	-3.400000	48.11092
Minimum	193.4094	-6660000.	-9.300000	16.68780
Std. Dev.	686.4391	9.06E+08	1.751530	9.202492
Skewness	1.548262	0.951856	-0.778808	0.496466
Kurtosis	4.161308	2.502386	2.445098	2.246727
Jarque-Bera	19.59563	6.936871	4.898570	2.783054
Probability	0.000056	0.031166	0.086355	0.248695
Sum Sq. Dev.	19790345	3.45E+19	128.8501	3556.806

Source: The authors' calculations

For Foreign Direct Investment (FDI), the descriptive statistics reveal a similar pattern of right-skewness, with the mean much greater than the median, and a high standard deviation. This indicates a wide variation in investment levels. The negative minimum value suggests that there were years with net outflows of FDI, while the high maximum indicates years of significant inflows. The FDI data deviate from a normal distribution, as evidenced by the Jarque-Bera test. The budget deficit (BD) data present a contrasting picture, where the mean is less than the median, suggesting a distribution that is skewed to the left. The extensive spread between the minimum and maximum values of the budget deficit highlights extreme fluctuations over the years. High kurtosis points towards the presence of outliers, and the Jarque-Bera test confirms that

the distribution is not normal. Trade Openness (TO) exhibits a more moderate variation, with the mean slightly higher than the median, indicating a less pronounced skewness. However, the standard deviation relative to the mean suggests variability, albeit less extreme than that for GDP PC or FDI. The Jarque-Bera test result for TO also indicates a departure from normality. However, the skewness and kurtosis values are not as high as those for GDP or BD, indicating a comparatively less skewed distribution.

Overall, the data for all variables demonstrate significant skewness and kurtosis, implying that the economic series are not normally distributed and have pronounced tails, which is typical in financial time series data. This non-normality and presence of outliers in the data sets may influence econometric modeling and inferential statistics.

4.1. Unit Root Test Result

Table represents the result of the unit root tests. The Augmented Dickey-Fuller (ADF) test indicates that all variables are stationary at the first difference, suggesting they are integrated of order one (I(1)) except GDP per capita. The test indicates non-stationarity at the original level, with a very high t-statistic and a probability of 1.0000. However, it becomes stationary at the second difference, as indicated by a significant t-statistic and a probability of 0.0000. This leads to the conclusion that GDP is I(2). These findings suggest that, although the variables exhibit varying levels of integration, the ARDL method for cointegration is suitable for estimating the long-term relationships among them.

Table 3: Unit-Root Test using Augmented Dicky-Fuller Test

Variable	At Level		At 1st difference		At 2nd difference		Decision
	t-statistic	Probability	t-statistic	Probability	t-statistic	Probability	
GDP PC	7.476	1.0000	-1.245	0.6452	-10.148	0.0000*	I (2)
FDI	-0.131	0.9382	-3.020	0.0424	-3.497	0.0140*	I (1)
BD	-0.829	0.8001	-4.374	0.0012	-7.852	0.0000*	I (1)
TO	-1.225	0.6547	-4.561	0.0009	-7.727	0.0000*	I (1)

Note: * denotes rejection of the null hypothesis at 5% level of significance (p-value).

Source: The authors' calculations

4.2. Regression Analysis

The ARDL estimation in Table 4 offers insights into the relationship between GDP growth and several lagged independent variables.

Table 4: Regression Analysis

ARDL Long Run Form and Bounds Test				
Conditional Error Correction Regression				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	144.7594	41.47229	3.490509	0.0016
GDP_PC(-1)*	0.023554	0.029209	0.806381	0.4266
FDI(-1)	5.62E-08	2.11E-08	2.666328	0.0124
BD**	12.75236	3.096269	4.118622	0.0003
TO(-1)	-2.521447	1.001213	-2.518393	0.1476
D(FDI)	-1.85E-08	1.84E-08	-1.007138	0.3222
D(FDI(-1))	6.67E-09	2.77E-08	0.240871	0.8114
D(FDI(-2))	-3.58E-08	2.58E-08	-1.390266	0.1750
D(FDI(-3))	1.12E-07	2.22E-08	5.066000	0.0000
D(TO)	-7.828393	1.597958	-4.898999	0.0000
* p-value incompatible with t-Bounds distribution.				
** Variable interpreted as Z = Z(-1) + D(Z).				

Source: The author's calculations

Lagged GDP PC

The coefficient of 0.023554, while positive, does not achieve statistical significance at conventional levels (p-value = 0.4266), suggesting that the previous period's GDP per capita does not have a strong predictive power for the current period in the long run.

Lagged Foreign Direct Investment

The coefficient 5.62E-08 is statistically significant (p-value = 0.0124), indicating that past values of Foreign Direct Investment have a positive long-term impact on GDP per capita. For FDI lag, FDI (-3), is positive and highly significant, indicating that FDI three years prior negatively impacts current GDP growth.

Budget Deficit

The coefficient of 12.75236 is statistically significant (p-value = 0.0003), indicating a positive and strong connection between the fiscal deficit and GDP per capita in the long run. Besides, the BD coefficient in the model is 12.75236. This suggests a positive correlation between the budget deficit (BD) and the dependent variable (presumably GDP growth or a similar economic indicator). Specifically, the coefficient value means that a one-unit increase in the budget deficit variable is associated with an increase of approximately 12.75236 units in the dependent variable, holding all other factors constant. The significance of this coefficient, as indicated by the low p-value (0.0003), suggests that the relationship between BD and economic growth is statistically

significant. This means that changes in the budget deficit have a meaningful impact on the dependent variable, according to this model. This suggests that the budget deficit variable may be modelled in a manner that considers both its level and change over time, thereby capturing its cumulative effect on the dependent variable.

Trade Openness

It has a detrimental and statistically meaningful impact on economic growth, where the coefficient, (-7.382393), with a significant p-value (0.0000), implying that an increase in trade openness from the previous year is associated with lower GDP growth in the current year for the Bangladesh Economy. The R-squared value of 0.982307 indicates that the model explains approximately 98.23% of the variation in GDP growth, which is exceptionally high. The adjusted R-squared value of 0.979843, which adjusts for the number of predictors, also shows a perfect fit. The F-statistic is highly significant (p-value: 0.0000), confirming that the overall model is statistically significant.

These results indicate that FDI has both immediate and delayed effects on GDP growth, with varying impacts depending on the lag. The strong negative relationship with trade openness may warrant further investigation into the nature of trade activities and their actual effect on economic growth. The model's strength is demonstrated by its high R-squared values and significant F-statistic. However, given the high R-squared value, these results should be interpreted with caution due to the possibility of overfitting.

4.3. Residual Diagnostic Tests

To ensure the reliability of the result, we conducted various diagnostic tests, the outcomes of which are presented in Table . According to the Breusch-Godfrey Serial Correlation LM Test, there is no notable serial correlation in the residuals of the ARDL model up to 2 lags.

Table 5: Diagnostic Tests

	Test Statistic	**Value**	**P-value**
Serial Correlation LM test	F-statistic	0.229333	0.7966
Heteroskedasticity Test	Chi-Square	1.830313	0.1051

The findings of the Breusch-Pagan-Godfrey test for heteroskedasticity are not statistically significant, suggesting that the null hypothesis of no heteroskedasticity in the model cannot be rejected. Put differently, there is no indication of heteroskedasticity in the model.

4.4. Stability Test

In our study, we employed the Cumulative Sum (CUSUM) test, as illustrated in Figure 3, to evaluate the stability of the model parameters over time. The CUSUM test indicates that the model parameters remain stable throughout the sample period. This stability is indicated by the plot staying within the 5% significance bounds, confirming that the coefficients consistently estimate the relationships between variables without structural breaks.

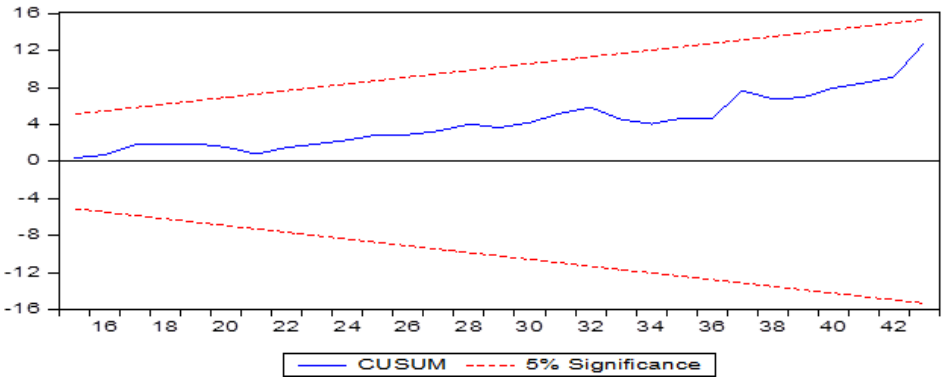


Figure 3: Recursive Residuals Cumulative Sum

5. Discussions

The detailed results and methodological accuracy of this study provide fresh insights into the longstanding discussion on the effects of budget deficits on economic growth in Bangladesh, using the ARDL framework for estimation over the period from 1980 to 2022. This approach provides a more comprehensive understanding than previous studies, such as those by Hussain and Haque (2017) and Biplob (2019), which primarily focused on shorter time frames or employed less dynamic econometric models.

The current findings align with the Keynesian perspective, as articulated by Chambers, Dimson et al. (2015), which suggests that budget deficits can stimulate economic activity under specific conditions in the short term. This aligns with Biplob (2019), who suggests that budget deficits could foster growth under scenarios of low private investment. However, the long-term effects provide a critical counterpoint, revealing where sustained deficits might lead to higher interest rates, crowding out private investment, and echoing the Neoclassical concerns raised by (Canterbery 2009). This dual effect emphasizes the conditional influence of fiscal policies, a distinction that is more thoroughly depicted in this study compared to prior research.

Furthermore, integrating FDI and TO into the analysis presents a new dimension that has not been thoroughly explored in earlier studies of Bangladesh. This study uniquely illustrates how these factors interact with budget deficits to influence economic growth, providing a significant extension of the existing literature that often isolates budget deficits without considering concurrent economic variables. In terms of empirical methodology, core test results enhance the reliability of the findings compared to some prior studies that did not perfectly address these aspects. For instance, the ARDL model's ability to estimate variables integrated at different orders provides a robust framework for understanding both long- and short-term relationships.

Finally, the research not only confirms some of the established theories regarding fiscal policy and economic growth but also refines them by presenting a more nuanced view of the economic impacts of budget deficits over the periods. The inclusion of comprehensive diagnostic tests ensures the robustness of the results, providing a better foundation for future research. This nuanced examination and methodological precision underscore the unique contributions of this study to the economic literature on fiscal policy and development in developing nations, such as Bangladesh.

6. Conclusion

This study thoroughly scrutinized the relationship between budget deficits and economic growth in Bangladesh, revealing a complex interplay influenced by Keynesian and Neoclassical economic theories. Findings suggest that budget deficits can, under certain conditions, stimulate economic growth by boosting aggregate demand, particularly during periods of low private investment and high unemployment. However, the possibility of higher interest rates and the displacement of private investment underscore the risks linked with long-term deficit financing. These insights underscore the need for sophisticated fiscal policy strategies to strike a balance between short-term economic stimulation and long-term fiscal sustainability. It is recommended to balance the fiscal approach, where government spending is carefully planned and executed to maximize economic benefits without compromising financial stability under a deficit budget. Strategic investments in infrastructure and human capital development are crucial, as these can significantly enhance the economy's productive capacity. At the same time, maintaining fiscal discipline is vital to prevent adverse long-term consequences, such as high inflation and unsustainable debt levels. The primary limitation of this study is its reliance on historical data, which may not accurately capture the complex responses of the economy to future fiscal policies or unexpected global economic changes.

Additionally, while the ARDL model is robust, it may not fully account for dynamic interactions or structural breaks within the economic variables, which could affect the precision of the forecasting. These constraints suggest the need to incorporate more sophisticated modelling techniques and up-to-date data in future research.

7. References

Abdullah, S., et al. (2018). "Budget deficit and growth: In search of ceiling for Bangladesh." *Business and Economic Horizons 14*(4): 743-765.

Alam, M. M., et al. (2022). "Effect of deficit financing on economic growth in Bangladesh: Cointegration and VECM approach." *FIIB Business Review 11*(2): 174-188.

Alam, M. M., et al. (2022). "The impact of macroeconomic variables on the budget deficit in Bangladesh: an econometric analysis." *South Asian Journal of Business Studies 11*(2): 216-234.

Alam, M. M. S., Md Nazmus Islam, Rabiul Moudud-Ul-Huq, Syed (2022). "Effect of deficit financing on economic growth in Bangladesh: Cointegration and VECM approach." *FIIB Business Review 11*(2): 174-188.

Arif, A. and U. Arif (2023). "Institutional approach to the budget deficit: an empirical analysis." *SAGE Open 13*(2): 21582440231171297.

Bank, W. (2016). *World Development Indicators,* World Bank.

Barro, R. J. (1989). "The Ricardian approach to budget deficits." *Journal of Economic perspectives 3*(2): 37-54.

BER (2022). *Bangladesh Economic Review*.Bangladesh Bank

Biplob, M. N. K. (2019). "Does budget deficit impede economic growth? Evidence from Bangladesh." *Journal of Management, Economics, and Industrial Organization 3*(2): 66-94.

Canterbery, E. R. (2009). Making Of Economics, The -Vol Iii: The Radical Assault, World Scientific Publishing Company.

Canterbery, E. R. (2009). "New Radical Economics: The Left." *World Scientific Book Chapters*: 99-117.

Chambers, D., et al. (2015). "Keynes the stock market investor: a quantitative analysis." *Journal of Financial and Quantitative Analysis 50*(4): 843-868.

Chirwa, T. G. and N. M. Odhiambo (2016). "Macroeconomic determinants of economic growth: A review of international literature." *The South East European Journal of Economics and Business 11*(2).

Chowdhury, A., et al. (2019). "Impact of macroeconomic variables on economic growth: Bangladesh perspective." *Information Management and Computer Science 2*(2): 19-22.

Chowdhury, S. B. K., et al. (2024). "Role of Budget Deficit on Real Economic Growth in Bangladesh: A Systematic Literature Review." *International Journal of Ethics in Social Sciences 8*.

de Mendonça, H. F. and A. C. Baca (2022). "Fiscal opacity and reduction of income inequality through taxation: Effects on economic growth." *The Quarterly Review of Economics and Finance 83*: 69-82.

Dey, S. R. and M. Tareque (2022). "Twin deficits hypothesis in Bangladesh: an empirical investigation." *International Journal of Emerging Markets 17*(9): 2350-2379.

Emana, D. (2021). "The relationship between budget deficit and economic growth: Evidence from ethiopia." *Applied Journal of Economics, Management and Social Sciences 2*(2): 10-15.

Hossain, M. E., et al. (2025). "Islamic Social Finance for Sustainable Economic Growth in Bangladesh." *Journal of Islamic Finance 14*(1): 85-97.

Hossin, M. S. (2023). "Interest rate deregulation, financial development and economic growth: Evidence from Bangladesh." *Global business review 24*(4): 690-703.

Hussain, M. E. and M. Haque (2017). "Fiscal deficit and its impact on economic growth: Evidence from Bangladesh." *Economies 5*(4): 37.

Khan Md Abdus Subhan, S. A. B. S., Mohammad Enayet Hossain (2022). "THE SIGNIFICANCE OF ISLAMIC FINANCE AND BANKING FOR THE SOCIO-ECONOMIC DEVELOPMENT IN BANGLADESH." *PalArch's Journal of Archaeology of Egypt/Egyptology 19*(1): 360-373.

Marpaung, G. N. and T. N. Dahana, Pitaloka, Lola Kurnia, Widia, Syam, Setiawan, Avi Budi, Kumala, Sepviana Nur (2023). "Implementation Of Tax Amnesty Policy on The Indonesia Economic Development." *Quality-Access to Success 24*(195).

Mavodyo, E. (2023). "The impact of budget deficit on economic growth and its channels in South Africa." *African Journal of Economic and Management Studies 14*(4): 509-523.

Musa, K., et al. (2023). "Does the Effectiveness of Budget Deficit Vary between Welfare and Non-Welfare Countries?" Sustainability 15(5): 3901.

Nazari, M., et al. (2023). "Uncertainty, budget deficit and economic growth in OPEC member countries." *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects 45*(2): 3519-3529.

Okafor, S. N., et al. (2022). "Testing the triple deficit hypothesis for sub-Saharan Africa: Implications for the African Continental Free Trade Area." *African development review 34*(1): 142-153.

Pelsa, I. and S. Balina (2022). Development of economic theory–from theories of economic growth and economic development to the paradigm of

sustainable development. DIEM: Dubrovnik International Economic Meeting, Sveučilište u Dubrovniku.

Rana, E. A. and A. N. Wahid (2017). "Fiscal deficit and economic growth in Bangladesh: A time-series analysis." *The American Economist 62*(1): 31-42.

Ravinthirakumaran, N., et al. (2016). "The twin deficits hypothesis in the SAARC countries: an empirical investigation." *Journal of the Asia Pacific Economy 21*(1): 77-90.

Roy, A. and S. D. Gupta (2013). "An empirical investigation of budget and trade deficits: the case of Bangladesh." *International Journal of Economics and Financial Issues 3*(3): 570-579.

Sadat, S. S., et al. (2022). "The Impact of Budget Deficit on Economic Growth of Afghanistan." *Journal of Economic Cooperation & Development 43*(3): 1-20.

Sadekin, M. N., et al. (2020). "Analysis of trend and sources of government budget deficit financing in Bangladesh." *Journal of International Studies 16*: 129-144.

Shah, S. S. A., Jadoon, Sarmad, Afridi, Muhammad Asim (2023). "Relevance of twin deficit hypothesis in the presence of structural breaks: an evidence from Pakistan." *Quality & Quantity 57*(4): 3305-3320.

Sirah, E. S. (2020). "Budget Deficit and Economic Growth in Ethiopia: Evidence from ARDL-VAR Model Approach."

Tran, O. K. T. (2022). "Does there exist an optimal budget balance to improve economic growth? empirical evidence from Asian countries." *Cogent Economics & Finance 10*(1): 2114174.

Tung, L. T. (2018). "The effect of fiscal deficit on economic growth in an emerging economy: Evidence from Vietnam." *Journal of International Studies 11*(3).

Umeh, C. A., et al. (2021). "Impact of government budget deficits on public health sector output in Nigeria." *World Journal of Advanced Research and Reviews 11*(02): 350-364.