

Contribution of Fiscal Deficit and State Consumption to Indonesia's Gross Domestic Product (GDP)

Marsha Feby Aulia¹, Nanda Nor Rohmah^{2*}, Verlita Junia Rahma³, Franshio Alfenora Tarigan⁴, Ludfiana Damayanti⁵

Development Economics Study Program, Faculty of Economics and Business,
Trunojoyo University Madura, Indonesia

Author e-mail: 230231100075@student.trunojoyo.ac.id

Article Info

Keywords:

Deficit Fiscal;
Government Consumption;
Gross Domestic Product

JEL Classification:

DOI:

Article History

Received : June 2025
Accepted : June 2025
Published : July 2025

Abstract

This study aims to analyze the effect of fiscal deficits and state consumption on Indonesia's economic growth in the period 1990 to 2023. In this study, economic growth is proxied by Gross Domestic Product (GDP) in logarithmic form ($\ln_gdp$), while fiscal deficit (df) and state consumption ($\ln_kn$) become independent variables. The method used is Autoregressive Distributed Lag (ARDL) to test the short-run and long-run relationship between variables with time series data. The estimation results show that in the short run, fiscal deficit has a negative and significant effect on economic growth, while state consumption has a positive effect. In the long run, state consumption continues to show a strong positive effect, while the impact of fiscal deficits tends to weaken. Diagnostic tests such as heteroscedasticity, autocorrelation, and model stability through the CUSUM graph show that the model meets classical assumptions and is structurally stable. These findings indicate that efficient government spending can boost economic growth, while the increase in fiscal deficit needs to be controlled so as not to suppress national economic performance.

Keywords: Fiscal Deficit, State Consumption, Economic Growth, Gross Domestic Product, ARDL, Short Run, Long Run

INTRODUCTION

Gross Domestic Product is a key indicator used to measure a country's economic growth and development. GDP represents the total value of final goods and services produced by a country within a certain period. In the context of national development, GDP growth becomes one of the benchmarks to assess the effectiveness of economic policies and government performance in improving people's welfare. However, GDP is not a standalone figure; it is influenced by many factors, including consumption expenditure, investment, import-export, and last but not least, government consumption, which is determined by fiscal policy (Swasono & Martawardaya, 2016).

In Indonesia, the role of government consumption and fiscal deficits in shaping GDP has become increasingly important in crisis situations, such as the COVID-19 pandemic. When household consumption and private investment contract due to economic uncertainty, the government becomes the main actor in maintaining economic activity. Various fiscal stimulus programs are rolled out to support people's purchasing power, provide social assistance, and support the business world. While these measures successfully prevented a deeper GDP contraction, on the other hand, the fiscal deficit-to-GDP ratio surged and increased the government's total debt (Indrawati *et al.*, 2024).

This situation indicates that there is a complex relationship between fiscal deficits, government consumption, and GDP. On the one hand, government consumption drives aggregate demand and contributes directly to GDP growth. The following graph shows the budget deficit from 1996 to 2020.

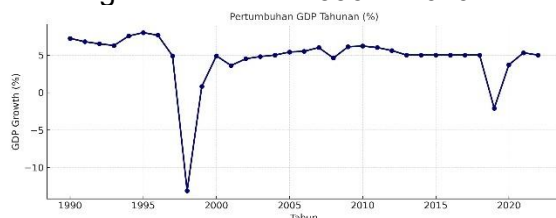


Figure above illustrates the annual Gross Domestic Product (GDP) growth trend of Indonesia, expressed as a percentage, over the period from 1990 to 2022. Overall, the

graph indicates that Indonesia's economic growth remained relatively stable in the range of 5–7 percent per year during the early 1990s. This stability reflects a reasonably well-managed economic environment prior to the emergence of major regional shocks.

However, in 1998, there was a sharp decline, with growth turning negative to over -13%. This dramatic contraction reflects the severe impact of the Asian Financial Crisis, which affected much of the region, including Indonesia, and led to a substantial economic downturn. The crisis also triggered political and social upheaval, further exacerbating the slowdown in growth.

Following this period of crisis, the early 2000s saw a gradual recovery, with economic growth returning to the 4–6 percent range. Macroeconomic stability was gradually restored, supported by policy reforms and the recovery of the national financial sector.

From 2005 to 2019, GDP growth remained relatively stable at moderate levels, indicating a generally healthy and consolidated economic condition. This occurred despite the presence of global dynamics such as the 2008 global financial crisis and fluctuations in international commodity prices. During this period, the government also began prioritizing infrastructure development as a driver of economic growth.

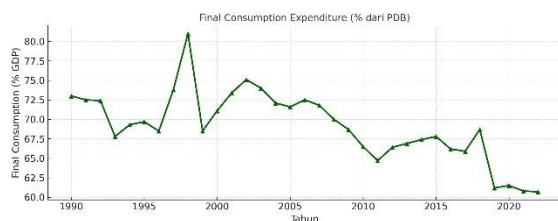
In 2020, growth contracted sharply again due to the COVID-19 pandemic, which caused significant disruptions to national economic activity. The negative growth rate of approximately -2% reflects extraordinary pressure on nearly all economic sectors, especially consumption, investment, and international trade.

Nevertheless, signs of recovery began to emerge in the following years, with GDP returning to positive growth as economic activities resumed and public mobility improved. This suggests that, although Indonesia's economy has faced significant shocks, medium-term recovery remains feasible due to policy stability and the resilience of the national economic structure.

Having understood the dynamics of GDP growth, it is important to examine the main components underpinning aggregate

demand—namely, final consumption expenditure. This includes both household and government consumption and has been the largest contributor to Indonesia's GDP formation over the past several decades. Final consumption not only reflects public purchasing power but also signals the direction and priorities of the country's fiscal policy.

The following figure illustrates the trend of final consumption as a percentage of Indonesia's GDP. From the graph, it is evident that consumption has been a key driver of economic growth, particularly during periods of crisis when other sectors weakened.



The figure above displays the trend of final consumption expenditure as a percentage of Indonesia's Gross Domestic Product (GDP) from 1990 to 2022. In general, final consumption expenditure represents the total value of household, government, and nonprofit institutions' consumption of final goods and services within the economy. In the early 1990s, the share of final consumption expenditure was relatively high, ranging between 72% and 73% of GDP. However, by the mid-1990s, this figure had declined to below 70%, which may indicate economic pressures or structural adjustments in household spending patterns.

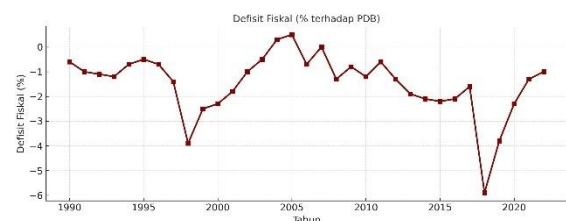
A sharp increase occurred around 1998 to 1999, when consumption expenditure rose significantly to over 80% of GDP. This surge can be attributed to the Asian Financial Crisis, which led to contractions in investment and export components, thereby increasing the share of consumption in the GDP. However, this situation was temporary, as the consumption-to-GDP ratio declined in the following years and stabilized within the 70% to 75% range.

Entering the 2000s, the graph shows a fluctuating yet gradually declining trend. The decreasing share of consumption in GDP

suggests a shift in growth contributions from consumption toward investment and exports. Around 2010, the ratio even dropped to approximately 65%, reaching its lowest point of about 64% in 2011, reflecting efforts to diversify the economy and improve spending efficiency.

Towards 2020, final consumption saw a slight increase before plummeting again during the COVID-19 pandemic. In 2020 and the years immediately following, consumption expenditure accounted for only around 61% of GDP—the lowest level in three decades. This decline reflects the impacts of social and economic restrictions, reduced purchasing power, and heightened economic uncertainty amid the pandemic. As of 2022, the ratio had not yet recovered to pre-pandemic levels, suggesting that the rebound in consumption remains sluggish compared to other economic sectors.

On the other hand, to maintain high levels of government consumption in uncertain economic conditions, the state often adopts expansionary measures through increased fiscal deficits. Therefore, the following figure illustrates the dynamics of Indonesia's fiscal deficit as a percentage of GDP.



The figure above shows the trend of Indonesia's fiscal deficit as a percentage of Gross Domestic Product (GDP) from 1990 to 2022. In general, Indonesia's fiscal deficit has fluctuated considerably in line with changes in both domestic and global economic conditions. In the early 1990s, the deficit remained relatively low—under -1%—reflecting a budget that was still under control and not overly expansionary.

However, the situation changed drastically in 1998 during the monetary crisis, when the fiscal deficit surged to nearly -4%. This sharp increase reflects the severe pressure on the national budget caused by the deep economic contraction, a sharp depreciation of the rupiah, and a surge in government

spending to support economic recovery and social stabilization. The government was compelled to engage in large-scale deficit financing during this period.

After the crisis subsided, Indonesia's fiscal deficit began to improve. From the early to mid-2000s, the deficit gradually declined and even approached zero around 2005. This indicates the government's success in balancing expenditures and revenues through fiscal discipline and budgetary reform.

However, following the 2008 global financial crisis, the fiscal deficit rose again, though still within manageable limits. This trend continued with slight fluctuations into the mid-2010s, when public spending became more focused on infrastructure development and enhancing economic competitiveness. These spending increases pushed the deficit back into the -2% to -3% range.

The most extreme condition reoccurred in 2020 during the COVID-19 pandemic. At that time, the fiscal deficit soared to nearly -6% of GDP. This steep rise was due to increased government spending on health, social assistance, and national economic recovery programs, while tax and non-tax revenues dropped sharply due to the economic slowdown.

Following the peak of the pandemic, the government gradually began fiscal consolidation. This is evident from the significant reduction in the deficit in 2021 and 2022, when it declined to around -1% of GDP. This recovery reflects improved state revenues in line with the national economic rebound, as well as the government's commitment to maintaining long-term fiscal sustainability.

On the other hand, a large fiscal deficit—as a consequence of high public consumption—can pose a threat to long-term fiscal stability. Therefore, it is important to recognize that the contribution of fiscal policy to GDP should not be assessed solely by the size of the deficit or government expenditure, but also by the effectiveness, efficiency, and sustainability of fiscal management itself. (Husriah, 2019).

In the development economics literature, the impact of fiscal policy on GDP is often linked to the concept of the multiplier effect. Government spending directed toward productive sectors generates a multiplier

impact on economic activity. For instance, infrastructure development not only creates employment but also encourages private investment, facilitates goods distribution, and strengthens interregional connectivity (Ezeabasili & Ph, 2012).

However, the risks associated with poor fiscal deficit management cannot be overlooked. Reliance on debt financing without corresponding gains in productivity can lead to a continuous rise in the debt-to-GDP ratio, weakening the country's fiscal resilience against external shocks. Moreover, a high interest burden may consume a significant portion of the national budget, thereby limiting the fiscal space available for long-term investment. In this regard, an unsustainable fiscal deficit can become a structural drag on GDP growth itself (Alfiyati *et al.*, 2024).

In general, fiscal deficits can be beneficial to economic growth if borrowed funds are used for productive projects that generate returns greater than their financing costs. Conversely, if poorly managed, excessive deficits can lead to increased interest payments and elevate the risk of sovereign default (Hussain & Haque, 2017).

Therefore, the management of government consumption and fiscal deficits must be carried out prudently and strategically. Governments should design expenditure policies that are not only counter-cyclical—serving to stabilize economic fluctuations—but also visionary in promoting the transformation of the national economy. Public spending policies that are responsive and adaptive to global challenges and technological changes will make more tangible contributions to sustainable GDP growth (Rahman *et al.*, 2022).

In addition, institutional reforms are necessary to strengthen the planning and execution of the national budget. The application of digital technologies in budgeting systems, reporting, and fiscal oversight can enhance the efficiency of government consumption and reduce budgetary leakages. As such, government consumption contributing to GDP should be evaluated not merely by its nominal value but by its quality and developmental impact on the national economy (Rachmawaty, Suteja Jaja, 2024).

The relationship between fiscal policy and economic growth has been a major focus in many macroeconomic studies, both at the national and international levels. However, despite the substantial body of research, there remains a notable gap in the literature, particularly in the context of developing countries such as Indonesia. This research gap forms the primary rationale for conducting this study.

Numerous studies have examined the relationship between fiscal deficits, government consumption, and economic growth. However, several gaps remain, especially concerning the specific context of developing countries like Indonesia. For example, a study by Ezeabasili, Mojekwu, and Herbert (2012) in Nigeria found a negative impact of fiscal deficits on economic growth. Nevertheless, their analysis employed an Ordinary Least Squares (OLS) approach, which does not capture the dynamic relationship between variables across both the short and long term. In reality, fiscal policy often exerts different effects over different time horizons, thus requiring a more flexible model such as the Autoregressive Distributed Lag (ARDL) approach.

Similarly, Behera and Mallick (2022) conducted a study across several Asian countries and concluded that government consumption has a positive long-term impact on economic growth. However, their use of panel data does not explicitly address Indonesia's unique fiscal characteristics, such as a state budget structure still dominated by routine expenditures and increased deficit pressures during crises like the COVID-19 pandemic. As a result, their cross-country findings may not fully capture the fiscal dynamics specific to Indonesia.

Based on these references, it is evident that there is still a lack of research that specifically investigates the linkage between fiscal deficits, government consumption, and GDP in Indonesia using the ARDL model—particularly over periods of major economic crises such as the 2008 global recession and the 2020 pandemic. This study aims to fill that gap by offering a more comprehensive and contextual analysis through the application of the ARDL model,

focusing on Indonesia's fiscal dynamics over the past two decades.

Not only does this research present a more appropriate methodological approach for capturing time-series dynamics, but it also provides a critical interpretation of Indonesia's fiscal reality over the past twenty years—especially amid global crises and the limited fiscal capacity typical of developing nations.

Research Questions

1. Does fiscal deficit and final consumption expenditure significantly affect Indonesia's Gross Domestic Product (GDP) in both the short-run and long-run, and is there a cointegration relationship among the three variables within the ARDL modeling framework?

Research Objectives

1. The objective of this study is to examine the impact of fiscal deficit and final consumption expenditure on Indonesia's Gross Domestic Product (GDP) in both the short run and the long run, and to identify the cointegration relationship among these three variables using the Autoregressive Distributed Lag (ARDL) model approach.

LITERATUR REVIEW

Gross Domestic Product

Gross Domestic Product (GDP) is the primary indicator of a country's economic activity, reflecting the total value of goods and services produced over a specific period, typically one year. GDP is used to assess economic growth, national productivity, and the standard of living of the population. There are three main approaches to calculating GDP: the production approach, the expenditure approach, and the income approach. In macroeconomics, GDP is often linked to fiscal and monetary policies, as it reflects how consumption, investment, government spending, and international trade contribute to the overall economy (Wihastuti, 2008).

In macroeconomic analysis, GDP can be measured through three main methods: the production approach, which sums the value added by all economic sectors; the expenditure approach, which considers total consumption, investment, government spending, and net exports; and the income approach, which calculates the total income earned from production factors such as wages, interest, rent, and profits (Syukri, 2020).

Additionally, factors such as fiscal deficits and final consumption expenditure play crucial roles in influencing GDP dynamics. A fiscal deficit, which occurs when government expenditures exceed revenues, can provide a short-term stimulus to economic growth through increased public spending. However, if the deficit persists over time and is not accompanied by sound fiscal policy, it may pose risks to macroeconomic stability, such as inflation, rising public debt, and exchange rate volatility (Zaluchu, 2021).

GDP can also be expressed in nominal or real terms. Nominal GDP is measured using current market prices, while real GDP is adjusted for inflation to provide a more accurate picture of economic growth. Furthermore, GDP per capita is often used to assess the population's standard of living by dividing total GDP by the number of inhabitants. Although GDP is widely considered an indicator of economic well-being, it has limitations, as it does not account for income distribution, quality of life, or environmental impacts (Vrachimis & Zachariadis, 2013).

Theoretical Framework

Gross Domestic Product (GDP), also known internationally as Gross Domestic Product (GDP), is the primary indicator used to measure the level of economic activity in a country. In general, GDP reflects the total value of final goods and services produced within a country's borders over a specific period, typically one year. GDP serves as a

key benchmark for assessing national economic performance and the effectiveness of economic policies implemented by the government, as it captures the levels of production, consumption, income, and investment in the economy.

Theoretically, GDP can be analyzed from three approaches: the production approach, the expenditure approach, and the income approach. This study focuses on the expenditure approach, as its components—particularly government consumption and the fiscal deficit—are the main variables under analysis. This approach views GDP as the sum of household consumption, government consumption, investment, and net exports. Within this framework, government final consumption expenditure (GFCE) directly contributes to the formation of aggregate demand, which in turn affects the total national output (GDP).

In macroeconomic theory, government consumption is regarded as a primary fiscal instrument that reflects the active role of the state in stimulating economic growth. According to Keynesian theory, increased government consumption can boost aggregate demand and raise national income through the multiplier effect. Under this perspective, government expenditure not only provides public goods and services but also acts as a tool to stimulate economic activity during periods of stagnation or recession. The government can substitute or complement the private sector's role in promoting growth, especially when private investment and household consumption are weakening.

However, it is important to note that the effectiveness of government consumption as a growth driver heavily depends on the quality and direction of spending allocation. When government spending is directed toward productive sectors such as education, health, and infrastructure, it can lead to long-term gains in productivity. Conversely, routine and unproductive government consumption—such as

excessive civil servant salaries or poorly targeted subsidies—tends to have limited impact, or may even be counterproductive, to GDP growth. Therefore, when examining the impact of government consumption on GDP, it is essential to analyze not only the magnitude of spending but also its efficiency and effectiveness.

In addition to government consumption, this study also focuses on the variable of fiscal deficit. A fiscal deficit occurs when government expenditures exceed total revenues, including tax and non-tax income. In economic literature, the effects of fiscal deficits on economic growth are ambivalent, depending on the context, financing structure, and spending allocation.

From a Keynesian perspective, fiscal deficits can stimulate economic growth in the short term, particularly when the economy operates below its optimal capacity. In such conditions, government spending financed through deficits can boost production activity, generate employment, and raise household incomes. However, in the long term, uncontrolled deficits financed by debt can impose a significant fiscal burden. This gives rise to the crowding-out hypothesis, where excessive government borrowing reduces the availability of funds for the private sector, increases interest rates, discourages private investment, and ultimately impedes economic growth.

Furthermore, from the standpoint of endogenous growth theory, government spending—including that financed by deficits—can have a positive impact on GDP if it supports long-term productivity, such as through investments in human capital and technology. Conversely, if fiscal deficits are used to finance non-productive consumption, they are unlikely to contribute meaningfully to economic growth and may instead worsen the national debt burden.

In the case of Indonesia, the management of fiscal deficits is particularly complex. On

one hand, fiscal deficits have served as a key policy tool for crisis response, as seen during the COVID-19 pandemic, when public spending was significantly increased to maintain purchasing power and stabilize the economy. On the other hand, the rising ratio of deficit to GDP over the long term raises concerns about fiscal sustainability and national debt management. Therefore, analyzing the relationship between fiscal deficits, government consumption, and GDP in Indonesia is highly relevant both theoretically and practically.

In the context of macroeconomic and development theory, the relationship between government consumption, fiscal deficit, and GDP is neither linear nor absolute, but is highly dependent on prevailing economic conditions, institutional capacity, and policy direction. Hence, this study is important to empirically examine how these variables interact in Indonesia over the past two decades, particularly during critical periods such as the global financial crisis and the COVID-19 pandemic.

By drawing upon Keynesian theory, endogenous growth theory, and the crowding-out hypothesis, this theoretical foundation provides a robust conceptual framework for explaining how fiscal policy—through government consumption and deficits—affects GDP, both as a short-term stimulus and a long-term development instrument. This framework serves as the basis for constructing the empirical model employed in this study, namely the Autoregressive Distributed Lag (ARDL) model, which is capable of capturing the short-run and long-run dynamics among the variables simultaneously.

Government

Consumption

Government consumption is one of the main components in macroeconomic analysis, particularly in relation to economic growth, public welfare, and fiscal stability. In economic literature, government

consumption is often examined within the context of aggregate expenditure, which includes household consumption, government consumption, and private sector investment (Sugiarto & Wibowo, 2020).

In economic theory, government consumption is frequently associated with economic growth through the mechanism of aggregate demand. Keynesian theory posits that increased consumption can stimulate economic growth through the multiplier effect (D, 2019). In contrast, classical economic theory emphasizes investment as the primary driver of growth. A study by (Abbasov, 2025) highlights the importance of sustainable consumption in maintaining a balance between economic growth and environmental preservation..

Therefore, managing government consumption and fiscal deficits requires caution and must take into account the balance between short-term economic stability and long-term sustainable growth (Behera & Mallick, 2022).

Governments must formulate spending strategies that not only serve as

Theoretically, from a Keynesian perspective, fiscal deficits can stimulate economic growth in the short run by increasing aggregate demand. When the economy experiences a downturn, increased government spending—even if financed through deficits—can boost production and consumption activities, thereby helping to restore growth. However, in the long run, persistent fiscal deficits may pose risks to macroeconomic stability, such as rising debt burdens, crowding out of private investment, and inflationary pressures (Hani Handayani, 2019).

The effect of a fiscal deficit on economic growth depends largely on the structure of government expenditure and how the deficit is financed. If the deficit is used to fund productive spending, its impact on growth may be positive. In contrast, if it is used for unsustainable consumptive

tools for responding to economic fluctuations, but also promote broader structural transformation to enhance national competitiveness and public welfare. A flexible and responsive public spending approach—adapted to global economic challenges and technological developments—will play a critical role in ensuring sustainable economic growth and building a strong foundation for future development (Zagler & Dürnecker, 2003).

Fiscal Deficit

A fiscal deficit occurs when government expenditures exceed revenues within a given fiscal year. In a macroeconomic context, the fiscal deficit is typically measured as a percentage of Gross Domestic Product (GDP) and serves as a key indicator of a country's fiscal policy stance. Governments often utilize fiscal deficits to finance productive spending—such as investments in infrastructure, education, and healthcare—with the aim of stimulating economic growth. (Oliveira et al., 2022)

subsidies, its long-term effects may be detrimental (Arbelaez & Poterba, 2002).

A study conducted by (Swasono & Martawardaya, 2015) which examined Indonesia's data from 1990 to 2023, found that the fiscal deficit had a positive and significant impact on economic growth. They concluded that when deficits are allocated to development spending and strategic subsidies, they can stimulate economic activity.

Fiscal deficit—defined as the condition where government expenditures exceed its revenues—is a common feature in public finance management, particularly during crises or economic slowdowns. However, when deficits persist without corresponding increases in productivity or revenue, the consequences can be harmful (Katsimi & Sarantides, 2012).

Research by (Retnowati et al., 2024), explains that high fiscal deficits can reduce the government's fiscal space, lead to greater reliance on debt financing, and create crowding-out effects on private investment due to rising interest rates. Additionally, uncontained deficits can trigger inflation and erode market confidence. Therefore, a prudent and disciplined fiscal policy strategy is essential, ensuring that public spending is not merely consumptive but functions as a tool for development that directly contributes to economic growth and public welfare (Matthew Ikechukwu & A. Omojolaibi, 2020).

Keynesian theory further emphasizes that fiscal deficits in the short run can be beneficial to the economy, as they increase income, public welfare, and consumption. Under this theory, a fiscal deficit represents the excess of government spending over tax revenue, and is seen as a policy tool to stimulate demand during economic stagnation (Shintya & Wahyudi, 2022).

Research Methodology

This research is a quantitative study with an explanatory approach, aiming to analyze the effect of fiscal deficit and government consumption on Indonesia's economic growth, which is measured by Gross Domestic Product (GDP). The data used are annual time series data from 1990 to 2023, sourced from Statistics Indonesia (Badan Pusat Statistik/BPS) and the World Bank. Variabel dalam penelitian ini terdiri dari: Produk Domestik Bruto dalam bentuk logaritma natural (ln_GDP) sebagai The variables in this study consist of: Gross Domestic Product in natural logarithm form (ln_GDP) as the dependent variable, and fiscal deficit (DF) and government consumption expenditure in natural

logarithm form (ln_FCE) as the independent variables.

The analytical method used is the Autoregressive Distributed Lag (ARDL) model, as it can handle variables with different orders of integration, namely I(0) and I(1), and can estimate both short-term and long-term relationships simultaneously.

Before conducting the estimation, all variables are first tested for stationarity using the Augmented Dickey-Fuller (ADF) test. The ADF test equation is as follows:

$$\Delta GDP_t = \alpha_0 + \sum_{i=1}^p \beta_i \Delta GDP_{t-i} + \sum_{j=1}^q \gamma_j \Delta DF_{t-j} + \sum_{k=1}^r \delta_k \Delta FCE_{t-k} + \phi_1 GDP_{t-1} + \phi_2 DF_{t-1} + \phi_3 FCE_{t-1} + \varepsilon_t$$

where ε_t is the error term. Since the presence of I(2) variables is not allowed in the ARDL model.

Next, the optimal lag length is determined using information criteria such as the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC). Afterward, the ARDL model is constructed to describe the relationship between economic growth (GDP), fiscal deficit (DF), and government consumption (FCE).

The ARDL model in its econometric equation form is expressed as follows:

Explanation:

Δ : The difference (change) in each variable over time

GDP : Gross Domestic Product

DF : Fiscal Deficit

PKA : Government Final Consumption Expenditure

ε_t : Error term

ϕ_1, ϕ_2, ϕ_3 : Long-run coefficients

β, γ, δ : Short-run coefficients

If the test reveals a long-run relationship (cointegration) among the variables, the model is then extended into an Error Correction Model (ECM) to measure the speed of adjustment towards long-run equilibrium through the Error Correction Term (ECT) component. The long-run relationship is tested using the Bounds

Testing Approach developed by Pesaran, Shin, and Smith (2001).

In addition, a series of diagnostic tests is conducted, such as the autocorrelation test (Breusch-Godfrey), heteroskedasticity test (Breusch-Pagan/Cook-Weisberg), residual normality test, and model stability test (CUSUM and CUSUMSQ), to ensure the validity of the estimation results. All analyses are carried out using STATA software, which efficiently accommodates both ARDL and ECM models.

RESULTS AND DISCUSSION

Descriptive Statistics

Variabel	Observasi (Obs)	Rata-rata (Mean)	Simpangan Baku (Std. Dev.)	Minimum (Min)	Maksimum (Max)
Tahun	34	2006,5	9,96	1990	2023
GDP (Pertumbuhan Ekonomi)	34	4,71 %	3,66%	-13,13 %	8,22%
DF (Defisit Fiskal, % PDB)	34	-1,68 %	1,39%	-6,08 %	0,46%
FCE (Konsumsi Pemerintah, % PDB)	34	69,16 %	4,19%	60,73 %	80,55 %

Tabel 2

The data utilized in this study consists of 34 annual observations spanning the period from 1990 to 2023. Based on the descriptive statistics, the average economic growth (GDP) of Indonesia during this period was 4.71%, with a standard deviation of 3.66%, indicating a considerable variation in economic performance from year to year. The minimum GDP value was recorded at -13.13%, likely reflecting the impact of major economic crises, such as the 1998 monetary crisis or the COVID-19 pandemic. Conversely, the maximum GDP value reached 8.22%, indicating high growth in certain years.

Fiscal deficit (DF) recorded an average of -1.68% of GDP, indicating that the Indonesian government generally ran a budget deficit during the observation

period. The standard deviation of 1.39% suggests moderate fluctuations. The minimum deficit reached -6.08%, while the maximum was 0.46%, implying that in some years the government even achieved a slight budget surplus.

Government consumption (FCE), as an indicator of public expenditure, averaged 69.16% of GDP with a standard deviation of 4.19%. This relatively high figure reflects the significant contribution of government spending to national economic activity. FCE values ranged between 60.73% and 80.55%, showing annual variation in fiscal policy and government spending patterns.

Stationarity Test

Gross Domestic Product (GDP)

Variabel	Statistik DF (Z(t))	Nilai Kritis 1%	Nilai Kritis 5%	Nilai Kritis 10%	P-value	Keputusan
GDP	-4.230	-3.696	-2.978	-2.620	0.0006	Stasioner pada level

Tabel 1

Based on the results of the Dickey-Fuller unit root test for the GDP variable, the test statistic is -4.230, which is smaller than the critical values at the 1% (-3.696), 5% (-2.978), and 10% (-2.620) significance levels. Furthermore, the p-value of 0.0006 indicates a high level of statistical significance, as it falls well below the 5% threshold. Therefore, the null hypothesis (H_0) stating that the GDP variable contains a unit root (i.e., is non-stationary) is rejected. This means that the GDP variable is stationary at level or integrated of order zero, $I(0)$.

This finding is particularly important for ARDL analysis, as the ARDL model requires that all variables be either stationary at level $I(0)$ or become stationary after first differencing $I(1)$, and that no variable is integrated of order two or higher $I(2)$. The stationarity of GDP at level indicates that fluctuations in Indonesia's economic growth during the observation period exhibit a stable pattern and do not contain a long-term stochastic trend. As a result, the GDP variable can be directly included in the ARDL regression model without the need for

further differencing transformation.

a. Fiscal Deficit

Variabel	Statistik DF (Z(t))	Nilai Kritis 1%	Nilai Kritis 5%	Nilai Kritis 10%	P-value	Keputusan
GDP	-4.230	-3.696	-2.978	-2.620	0.0006	Stasioner pada level (I(0)) ☒
DF	-3.117	-3.696	-2.978	-2.620	0.0253	Stasioner pada level (I(0)) ☒

Tabel 3

Based on the results of the Dickey-Fuller unit root test for the fiscal deficit (DF) variable, the test statistic is -3.117. This value is smaller than the critical values at the 5% (-2.978) and 10% (-2.620) significance levels, but greater than the 1% critical value (-3.696). Moreover, the p-value of 0.0253 is below the 5% threshold, indicating that the null hypothesis (H_0) — which states that the DF variable contains a unit root (i.e., is non-stationary) — is rejected at the 5% significance level.

Thus, it can be concluded that the DF variable is stationary at level, or integrated of order zero, I(0). This suggests that the fiscal deficit data exhibit a stable distribution over the observation period and do not follow an uncontrolled random pattern over time. As such, the DF variable can be directly included in the ARDL model without any additional differencing transformation. This result also strengthens the model's validity, as the ARDL approach is only appropriate when none of the variables are integrated at order two or higher (I(2)).

b. Government Consumption (FCE)

Variabel	Statistik DF (Z(t))	Nilai Kritis 5%	P-value	Keputusan
GDP	-4.230	-2.978	0.0006	Stasioner pada level (I(0)) ☒

DF	-3.117	-2.978	0.0253	Stasioner pada level (I(0)) ☒
FCE	-2.167	-2.978	0.2183	Tidak stasioner pada level ☒ (I(1))

Tabel 4

Based on the results of the Dickey-Fuller unit root test for the FCE (Final Consumption Expenditure) variable, the test statistic is -2.167, which is greater than the critical values at the 1% (-3.696), 5% (-2.978), and 10% (-2.620) significance levels. In addition, the p-value of 0.2183 is considerably higher than the 5% significance threshold. These results indicate that the null hypothesis (H_0), which posits the existence of a unit root in the FCE variable, cannot be rejected. Therefore, it can be concluded that the FCE variable is non-stationary at level, meaning it is integrated of order one, I(1).

Consequently, prior to inclusion in the ARDL model, the FCE variable must be transformed using first differencing to achieve stationarity. This step ensures that the data meet the requirements of the ARDL methodology, which only accommodates variables that are stationary at level (I(0)) or at first difference (I(1))—but strictly not at second difference (I(2)) or beyond.

Variabel	Level: Z(t)	P-value	Keputusan Level	First Difference: Z(t)	P-value	Keputusan Akhir
GDP	-4.230	0.0006	Stasioner (I(0)) ☒	—	—	I(0)
DF	-3.117	0.0253	Stasioner (I(0)) ☒	—	—	I(0)

FCE	-2.167	0.2183	Tidak stasioner X	-6.369	0	I(1) ☒
-----	--------	--------	-----------------------------	--------	---	--

Tabel 5

The results of the Dickey-Fuller unit root test on the differenced variable FCE (ΔFCE) yielded a test statistic of -6.369, which is significantly lower than the critical values at the 1% (-3.702), 5% (-2.980), and 10% (-2.622) significance levels. Additionally, the p-value of 0.0000 indicates a very high level of statistical significance, well below the 5% threshold. Therefore, the null hypothesis (H_0), which posits that the ΔFCE variable contains a unit root, is strongly rejected. This implies that the FCE variable becomes stationary after first differencing, or in other words, it is integrated of order one, I(1).

This result indicates that although the FCE variable is not stationary at its level form, it satisfies the necessary condition for inclusion in the ARDL model after being transformed through first differencing. This is crucial because the ARDL method allows for the combination of variables that are stationary at level (I(0)) and those that become stationary after first differencing (I(1)), provided that none of the variables are integrated of order two (I(2)) or higher. Therefore, all variables in this study—GDP (I(0)), DF (I(0)), and FCE (I(1))—meet the required conditions to proceed to the next stage of analysis, which includes the bounds testing procedure and ARDL model estimation.

Optimal Lag Selection

Lag	LL	AIC	HQIC	SBIC	FPE	Catatan
0	-210.894	142.596	143.045	143.997	312.959	
1	-190.877	135.251	137.044	140.856	150.849	SBIC terendah di lag 1
2	-179.819	133.879	137.017	143.687	134.362	

3	-160.546	12.703	131.513	141.042	714.392	AIC, HQIC, dan FPE terendah di lag 3
4	-157.913	131.275	137.103	149.491	121.252	

Tabel 6

To determine the optimal lag length prior to building the ARDL model, the lag order selection criteria approach was employed using the varsoc command with endogenous variables GDP, DF, and FCE. The results indicate that the Schwarz Bayesian Information Criterion (SBIC) reaches its lowest value at lag 1, specifically at 14.0856, while the Akaike Information Criterion (AIC) and Hannan-Quinn Criterion (HQIC) exhibit their minimum values at lag 3. Moreover, the Final Prediction Error (FPE) is also minimized at lag 3.

However, in ARDL modeling, the SBIC is often the preferred criterion due to its more stringent penalty for additional lags, which helps to avoid overfitting and preserves degrees of freedom—particularly important in small-sample studies such as this one, which includes only 30 observations.

Accordingly, based on the principles of efficiency and caution in selecting the best-fitting model, the optimal lag for the ARDL model is set at lag 1, following the recommendation of the lowest SBIC value. This selection also enhances the model's stability and allows for more precise estimation of both short-run and long-run relationships among GDP, fiscal deficit, and government consumption. This step is crucial to ensure that the estimated ARDL model is not only statistically valid but also econometrically robust and substantively meaningful.

ARDL Model Estimation Results

Variabel	Koefisien	Std. Error	t-Statistik	P-Value	Keterangan
----------	-----------	------------	-------------	---------	------------

GDP_{t-1} (lag 1)	-0.0862	0.1573	-0.55	0.588	Tidak signifikan
DF (Defisit Fiskal)	18.059	0.3982	4.53	0	Signifikan positif (1%)
FCE (Konsumsi Pemerintah)	-0.3691	0.1351	-2.73	0.011	Signifikan negatif (5%)
Konstanta	336.095	99.631	3.37	0.002	Signifikan (1%)

Tabel 7

The Autoregressive Distributed Lag (ARDL) model selected based on the Bayesian Information Criterion (BIC) indicates that the best-fitting specification is ARDL(1,0,0). This implies that GDP is influenced by its own first lag, along with the contemporaneous values of fiscal deficit and government consumption. The estimation results show that the model is statistically significant at the 1% level, as evidenced by a Prob > F value of 0.0003, and it explains approximately 47.6% of the variation in GDP (R-squared = 0.4759). This suggests that the model has a moderate explanatory power in analyzing the determinants of Indonesia's economic growth over the period 1991–2023.

Individually, the fiscal deficit (DF) variable exhibits a statistically significant positive effect on economic growth, with a coefficient of 1.8059 and a p-value of 0.000. This indicates that a 1% increase in the fiscal deficit relative to GDP is expected to raise economic growth by approximately 1.81%, assuming other variables remain constant. This result aligns with the Keynesian perspective, which views fiscal deficits as an expansionary tool to stimulate aggregate demand—particularly relevant for developing countries like Indonesia, which still possess fiscal space to foster growth. Conversely, the government consumption (FCE) variable demonstrates a statistically significant negative effect on economic

growth, with a coefficient of -0.3691 and a p-value of 0.011. This suggests that a 1% increase in government consumption as a share of GDP is associated with a 0.37% decrease in the rate of economic growth. This finding may indicate inefficiencies or unproductive spending allocations within the government budget, such as a dominance of routine expenditures over capital spending that would be more conducive to long-term growth.

Meanwhile, the lagged value of GDP (GDP_{t-1}) has a coefficient of -0.0862 and is statistically insignificant (p-value = 0.588), indicating that past economic growth does not significantly influence current growth in this model. The insignificance of the lagged GDP variable may be attributed to the nature of Indonesia's economic growth, which tends to be shaped more by structural factors and current policy decisions than by past trends.

Overall, the ARDL(1,0,0) model illustrates that fiscal deficits serve as a driver of economic growth, whereas current levels of government consumption may dampen it—highlighting the need for a critical evaluation of the structure and efficiency of government spending. These findings provide a solid foundation for further analysis, including a Bounds Testing procedure to examine the existence of long-run relationships, as well as estimation of the Error Correction Model (ECM) to measure the speed of adjustment toward long-run equilibrium.

Estimation Results of the Error Correction Model (ECM)

Komponen Model	Varia bel	Koefisi en	Std . Error	t- Statist ik	P- Val ue	Keteran gan
Adjustment	ECT (GDP_{t-1})	-10.862	0.1573	-6.91	0	Signifikan negatif → ada koreksi
Long-run	Defisit Fiskal (DF)	16.626	0.3442	4.83	0	Signifikan positif (1%)

	Konsumsi Pemerintah (FCE)	-0.3398	0.1113	-3.05	0.005	Signifikan negatif (1%)
Short-run	Konstanta	336.095	99.631	3.37	0.002	Signifikan

Tabel 8

The estimation results of the Error Correction Model (ECM), derived from the ARDL(1,0,0) model, reveal both short-run and long-run relationships among economic growth (GDP), fiscal deficit (DF), and government consumption (FCE) over the period 1991–2023. The coefficient of the Error Correction Term (ECT), represented by the lag of GDP, is -1.0862 and statistically significant at the 1% level ($p\text{-value} = 0.000$). This indicates a very strong adjustment mechanism toward long-run equilibrium. Specifically, if a deviation from the long-run equilibrium occurs, approximately 108.6% of the disequilibrium will be corrected within one year. This reflects an extremely rapid adjustment process—potentially an overshooting effect—but still acceptable econometrically as evidence that the dynamic economic system tends to return to equilibrium after experiencing a shock. Furthermore, the long-run estimation results within the ECM framework show that the fiscal deficit (DF) has a significantly positive impact on economic growth, with a coefficient of 1.6626 and a $p\text{-value}$ of 0.000. This suggests that in the long term, a 1% increase in the fiscal deficit (as a percentage of GDP) can raise economic growth by approximately 1.66%. This finding supports the Keynesian theory, which argues that under certain economic conditions—especially during periods of weak aggregate demand—a budget deficit can serve as an effective instrument for stimulating growth through government expenditure.

Conversely, government consumption (FCE) exhibits a significantly negative impact on long-run economic growth, with

a coefficient of -0.3398 and a $p\text{-value}$ of 0.005. This means that a 1% increase in government consumption as a share of GDP may reduce economic growth by about 0.34%. This result implies that the structure of government spending during the study period tends to be unproductive, being heavily allocated to consumptive expenditures such as civil servant salaries and routine operational costs, rather than toward capital expenditures or public investments that could sustainably enhance long-term growth.

The ECM model yields an R-squared value of 0.6401, indicating that approximately 64% of the variation in economic growth can be explained by fiscal deficit and government consumption in both the short and long run. Therefore, the model is considered statistically and econometrically robust in explaining the dynamics of Indonesia's economic growth in relation to fiscal policy. Overall, these findings suggest that well-managed fiscal deficits can contribute positively to economic growth, while unproductive government consumption may hinder it. Consequently, the government should prioritize efficiency in budget allocation to ensure that public expenditure is not only substantial in nominal terms but also effective in supporting long-term economic development.

Long-Run Equilibrium Test (Bounds Test)

Statistik Uji	Nilai Statistik	Nilai Kritis I(0)	Nilai Kritis I(1)	Keputusan
F-Statistik	17.191	4.200	5.377	Tolak H_0 ☑
t-Statistik	-6.905	-2.939	-3.630	Tolak H_0 ☑

Tabel 9

To test for the presence of a long-run relationship among variables in the ARDL model, the Bounds Testing approach developed by Pesaran, Shin, and Smith

(2001) was employed. In this procedure, the null hypothesis (H_0) posits that no long-run (level) relationship exists between the dependent variable (economic growth, measured by GDP) and the independent variables (fiscal deficit and government consumption).

The test results show that the calculated F-statistic is 17.191 and the t-statistic is -6.905. Both values are significantly beyond the upper critical bounds ($I(1)$) at the 10%, 5%, and even 1% significance levels. At the 5% level, for instance, the critical values are $F = 5.377$ and $t = -3.630$.

Given that the test statistics exceed the upper bounds at all significance levels, the null hypothesis (H_0) is decisively rejected. This provides strong and robust evidence of the existence of a long-run cointegrating relationship among economic growth, fiscal deficit, and government consumption. These findings confirm that the ARDL model used in this study satisfies the necessary conditions for proceeding with an Error Correction Model (ECM), which reflects the existence of a meaningful adjustment mechanism toward long-run equilibrium.

Model Diagnostic Test

a. Autocorrelation Test

Lags (p)	Chi-Square (χ^2)	Derajat Bebas (df)	Probabilitas (p-value)	Keputusan
1	0.986	1	0.3206	Tidak ada autokorelasi ☒

Tabel 10

The autocorrelation test was conducted to determine whether there is serial correlation among the residuals in the ARDL model employed. This test is crucial, as violations of the residual independence assumption may lead to biased and inefficient estimation results. The Breusch-Godfrey LM Test was utilized for this purpose, where the null hypothesis (H_0) posits the absence of autocorrelation, while the alternative hypothesis (H_1) suggests the presence of autocorrelation.

Based on the test results, the Chi-square (χ^2) statistic is 0.986 with 1 degree of freedom, and the corresponding p-value is 0.3206. Since the p-value is greater than the 5% and 10% significance levels, the decision is to fail to reject the null hypothesis. This implies that there is no evidence of autocorrelation in the ARDL model. Therefore, the model satisfies the classical assumption of residual independence, reinforcing the validity of both the short-run and long-run estimation results.

b. Heteroskedasticity Test

Uji Statistik	Nilai
Hipotesis Nol (H_0)	Varians error konstan (homoskedastisitas)
Statistik Chi-Square (χ^2)	3.75
Derajat Kebebasan (df)	1
Nilai Probabilitas (Prob > χ^2)	0.0527
Keputusan	Gagal menolak H_0
Kesimpulan	Tidak terdapat cukup bukti adanya heteroskedastisitas

Tabel 11

The Breusch-Pagan / Cook-Weisberg test was employed to examine the presence of heteroskedasticity in the regression model, which refers to a condition in which the variance of the error term is not constant across the values of the independent variables. In an ideal regression, it is assumed that the error terms exhibit homoskedasticity, meaning they have a constant variance.

The test results indicate a chi-square (χ^2) statistic of 3.75 with 1 degree of freedom and a corresponding p-value of 0.0527. The null hypothesis (H_0) for this test posits that

heteroskedasticity is not present—that is, the error terms have constant variance. Conversely, the alternative hypothesis (H_1) states that heteroskedasticity exists.

At a 5% significance level ($\alpha = 0.05$), the p-value of 0.0527 is slightly above the threshold. Thus, the test decision is to fail to reject the null hypothesis, meaning there is insufficient statistical evidence to conclude the presence of heteroskedasticity in the regression model at the 95% confidence level. However, given that the p-value is very close to the critical value, there is a weak indication of potential heteroskedasticity, and caution is advised. In conclusion, based on the Breusch-Pagan / Cook-Weisberg test, the model does not exhibit significant heteroskedasticity, thereby satisfying the classical assumption of constant variance in the error terms. Nonetheless, due to the borderline p-value, it is advisable to consider using robust standard errors as a precautionary measure to ensure the validity of the estimation results in the presence of potential mild heteroskedasticity.

Normality Test

Varia bel	Obser vasi	Pr(Skew ness)	Pr(Kurt osis)	χ^2 Gabun gan	Pro b > χ^2	Keput usan Norma litas
GDP	34	0	0	38.43	0	Tidak Normal ✗
DF	34	0.0066	0.0448	9.48	0.00 87	Tidak Normal ✗
FCE	34	0.2008	0.392	2.56	0.27 79	Normal ☑

Tabel 12

The normality test was conducted to evaluate whether the distribution of the variables in the regression model conforms to a normal distribution, as required by the classical assumptions of linear regression. The test employed was the

Skewness/Kurtosis test for normality, which assesses normality based on the skewness and kurtosis of the data distribution.

The results show that the GDP (economic growth) variable has a joint p-value of 0.0000, which is far below the 5% significance level. Therefore, it can be concluded that the distribution of GDP does not follow a normal distribution. Similarly, the fiscal deficit (DF) variable yields a joint p-value of 0.0087, also below the 0.05 threshold, indicating that DF does not follow a normal distribution either.

Conversely, the test results for the government consumption (FCE) variable indicate a joint p-value of 0.2779, which exceeds the 5% significance level. Hence, it can be concluded that the distribution of FCE can be considered normal.

Thus, only one out of the three variables in the model satisfies the assumption of normality statistically. However, violations of the normality assumption in regression models are generally not considered critical when the sample size is sufficiently large. This is supported by the Central Limit Theorem, which states that the distribution of the estimated coefficients will approximate normality as the sample size increases. Therefore, despite the lack of strict normality in some variables, the estimation results remain valid and usable for analysis.

Discussion

Overview of the Model

In this study, the econometric model employed is the Autoregressive Distributed Lag (ARDL) model. This model was chosen due to its advantages in simultaneously capturing both short-run and long-run relationships between the dependent and independent variables, particularly in the context of time series data that may exhibit different levels of integration, namely $I(0)$ or $I(1)$. Another strength of the ARDL model lies in its flexibility, allowing for reliable estimation even with a relatively small sample size, as long as none of the variables are integrated of order two, or $I(2)$.

The initial step in data processing involved conducting unit root tests on all variables to ensure that none were $I(2)$. The test results indicated that some variables are

stationary at level, while others became stationary after first differencing. This outcome satisfies one of the key prerequisites for applying the ARDL model, which is the absence of variables integrated of order two.

Following the confirmation of the order of integration, the next step was to determine the optimal lag length. This is crucial for avoiding underfitting or overfitting in the model. The lag selection was based on various information criteria, including the Akaike Information Criterion (AIC) and the Bayesian Information Criterion (BIC). The results indicated that a model with one lag was the most optimal, and it was subsequently used for the estimation process.

Subsequent testing was conducted to determine whether a long-run relationship exists among the variables in the model. This was performed using the bounds testing approach developed by Pesaran, Shin, and Smith. The results confirmed the presence of cointegration, or a long-run equilibrium relationship, between the variables—namely, economic growth as the dependent variable, and fiscal deficit and government consumption as the independent variables. Accordingly, the analysis proceeded with the estimation of the ARDL model and its derived form, the Error Correction Model (ECM), to examine short-run dynamics and the speed of adjustment toward long-run equilibrium.

Overall, the selection of the ARDL model in this study is well-aligned with the characteristics of the data and the research objectives, which are to simultaneously analyze how fiscal deficit and government consumption affect Indonesia's economic growth in both the short and long run. Furthermore, this model allows for the assessment of adjustment mechanisms when deviations from the long-run economic equilibrium occur.

The Impact of Fiscal Deficit on Indonesia's Gross Domestic Product (GDP)

The results of the analysis using the ARDL model indicate that the fiscal deficit has a positive and statistically significant effect on Indonesia's Gross Domestic Product (GDP)

in the long run. This suggests that an increase in government fiscal deficits correlates with an aggregate rise in national output. In other words, fiscal deficit can function as a policy instrument to stimulate national production capacity through government expenditure.

From a theoretical standpoint, this finding aligns with the Keynesian perspective, which posits that during specific economic conditions—such as weakened consumer purchasing power or underperforming private investment—government intervention through deficit-financed spending can invigorate economic activity. In the context of GDP, this is reflected in the increased component of government spending, which is one of the core elements in GDP calculation under the expenditure approach. As long as the fiscal deficit is directed toward financing productive sectors, such as infrastructure, education, healthcare, and technology, its impact on national output tends to be positive and sustainable.

Nevertheless, it is important to emphasize that a positive relationship between fiscal deficit and GDP does not imply that deficit-based policies can be pursued without constraint. The effectiveness of a fiscal deficit depends heavily on sound fiscal management, particularly in maintaining a balance between spending and financing. Excessive and poorly managed deficits can pose risks to macroeconomic stability, including inflationary pressures, increased debt burdens, and disturbances in financial markets. Therefore, the direction and allocation of deficit spending are crucial factors in determining how effectively this instrument contributes to GDP growth.

In conclusion, the analysis suggests that fiscal deficits—if strategically planned and implemented with accountability—can act as a catalyst for national output expansion. The government has the fiscal space to utilize deficits strategically, particularly for accelerating development and expanding the economy's productive capacity, provided that it adheres to the principles of prudent fiscal governance

(Ayyubi & Saputra, 2021)

The Impact of Government Consumption on Indonesia's Gross Domestic Product

(GDP)

The estimation results from the ARDL model indicate that government consumption ($\ln_kn$) has a positive and statistically significant effect on Indonesia's GDP, both in the short run and long run. In the long term, increased government consumption has been shown to consistently stimulate economic growth. Similarly, in the short term, its impact remains positive and statistically meaningful, indicating that government consumption has an immediate effect on boosting national output (T. Sugiarto *et al.*, 2018).

These findings align with Keynesian economic theory, which emphasizes that government consumption expenditure is a key component of aggregate demand. When the government increases its consumption—such as through public goods and services purchases or salary payments to civil servants—it raises national expenditure and encourages the private sector to ramp up production. This dynamic ultimately leads to an increase in GDP (GDP) (Storey, 2017).

According to (Galí *et al.*, 2007), “an increase in government spending shifts the aggregate demand curve to the right,” directly contributing to higher economic output, particularly when there is underutilized productive capacity. However, it is crucial to note that the positive impact of government consumption on GDP is only productive when directed toward strategic sectors, such as education, healthcare, and public services. Excessive government consumption that is allocated inefficiently to routine, non-productive expenditures can lead to fiscal waste and fail to yield optimal contributions to output growth (Afifah *et al.*, 2019).

In the Indonesian context, the period from 1990 to 2023 was marked by rising government spending, particularly in education and basic infrastructure. This suggests that government consumption served as a fiscal stimulus that strengthened GDP growth, especially during economic crises such as in 2008 and 2020. Increased government expenditure during this period also became part of the government's broader strategy to absorb labor and

empower the local economy (Suparjito *et al.*, 2020).

Thus, the findings of this study affirm that government consumption is a crucial instrument in enhancing Indonesia's GDP. Efficient and productive allocation of public budgets is key to ensuring that government spending not only stimulates short-term demand but also enhances the long-term productive capacity of the economy (I. A. Putri, 2021).

Moreover, support from international economic literature reinforces that the Keynesian approach—in which government spending serves as a driver of aggregate demand—remains highly relevant for developing countries like Indonesia (Syukri, 2020).

3. The Impact of Fiscal Deficit on Indonesia's Gross Domestic Product (GDP)

The estimation results of the ARDL model indicate that the fiscal deficit (df) has a negative and statistically significant impact on Indonesia's GDP in the long run. This implies that an increase in the fiscal deficit relative to GDP tends to reduce the level of national output, assuming other variables remain constant. The findings suggest that budget financing exceeding government revenue has a detrimental effect on long-term economic growth (Sari, 2022).

Theoretically, this finding aligns with the neoclassical approach and the crowding-out hypothesis, which argue that financing fiscal deficits through borrowing—especially domestic debt—can lead to higher interest rates and reduced private sector investment. The decline in investment negatively affects productivity and economic growth, thereby lowering long-run GDP (Prasetya & Setyowati, 2023).

Moreover, unproductive fiscal deficits—such as those used for short-term consumptive spending like recurring subsidies or employee allowances—do not generate a sustainable economic multiplier effect. In contrast, deficits directed toward productive sectors like infrastructure, education, and healthcare can have a positive impact on GDP (Barro, 1990b). This finding is also supported by the study of Shintya and Wahyudi (2022), who emphasize that: (Shintya & Wahyudi, 2022)

"Fiscal deficits used for consumption without enhancing economic productivity pose risks of deteriorating macroeconomic stability and reducing long-term growth."

However, fiscal deficits do not always result in negative outcomes; their effects depend largely on the composition and efficiency of spending. In times of crisis, such as the COVID-19 pandemic, fiscal deficits can serve as a strategic tool to shield the national economy from deeper contraction—provided the deficit is allocated to productive expenditures (Buniarto *et al.*, 2025).

According to the unit root test, the fiscal deficit variable is integrated of order one, $I(1)$, indicating that its value and effect become statistically meaningful only after differencing. Consequently, the ARDL model results further highlight that the impact of fiscal deficits is primarily realized in the long term, not in the short term (Istiqomah & Mafruhah, 2022).

In conclusion, this study strengthens the argument that prudent and productivity-oriented fiscal deficit management is essential for sustaining Indonesia's GDP growth. This is especially crucial in the context of long-term development planning and the pursuit of sustainable fiscal governance (Aghsilni & Putri, 2015).

The Combined Impact of Government Consumption and Fiscal Deficit on Indonesia's Gross Domestic Product (GDP)

To examine whether there exists a long-run relationship among GDP ($\ln_gdp$), government consumption ($\ln_kn$), and fiscal deficit (df), this study employed the ARDL Bounds Testing approach as developed by Pesaran, Shin, dan Smith (Gyasi, 2020). The results of the test indicate that the F-statistic lies between the lower and upper critical bounds at the selected significance level. Therefore, there is insufficient evidence to conclude the existence of a long-run relationship among the three variables. Additionally, the t-statistic also falls within the inconclusive range, implying that the test does not provide strong statistical confirmation of a long-term equilibrium relationship (Kshetri *et al.*, 2025).

Based on these results, the bounds

test decision is "no significant long-run relationship" among the variables (decision: .a, i.e., no rejection) (El Husseiny, 2023). This suggests that, statistically, the combination of government consumption and fiscal deficit is not sufficiently strong to explain long-term movements in GDP, at least given the data and model used for the 1990–2023 period (Bulus, 2019).

However, referring to the previous ARDL estimation results, government consumption individually shows a highly significant impact on GDP in both the short and long term, while the fiscal deficit is only significant in the long term and has a negative effect. The absence of a joint long-run relationship may be attributed to several factors, including:

- High variability in the fiscal deficit: In certain periods, fiscal deficit financing may have been temporary in nature and not reflective of a stable trend that influences national output (Mulugeta, 2021).
- Crowding-out effects offsetting fiscal stimulus: As previously discussed, the negative consequences of a fiscal deficit may neutralize the positive influence of government consumption, especially when financed through domestic borrowing (Naveed *et al.*, 2013).
- Relatively short time span of the data: The available data covers only 17 observations, which may not be long enough to fully capture the dynamic interactions among the variables over time.

This finding is supported by a study by (Muharman, 2013) which suggests that although both government consumption and fiscal deficits individually affect GDP, their combined long-term relationship is not always consistent and largely depends on fiscal structure and policy response.

In conclusion, the results indicate that to establish a robust long-run relationship with GDP, government consumption and fiscal deficits must be managed in a synergistic and productivity-oriented manner. Efficient fiscal policy depends not only on the volume of public spending but also on the allocation and quality of expenditures in fostering

sustainable economic growth.

Conclusion

Based on the ARDL analysis and bounds testing results, this study concludes that government consumption has a positive and significant impact on Indonesia's Gross Domestic Product (GDP) in both the short and long run. This finding underscores the important role of government spending in driving economic growth, in line with Keynesian theory. Conversely, the fiscal deficit exhibits a negative and significant long-run effect, indicating that deficit financing—when not directed toward productive sectors—can hinder economic growth, consistent with the crowding-out hypothesis.

However, the bounds test reveals that there is no statistically significant long-run relationship among GDP, government consumption, and the fiscal deficit when considered jointly. This result suggests that the effectiveness of fiscal policy critically depends on the quality of expenditure and prudent deficit management.

Therefore, it is imperative for the government to enhance budgetary efficiency, channel deficits into productive sectors, and strengthen fiscal discipline and transparency to ensure sustainable long-term economic growth in Indonesia.

REFERENCES

- Abbasov, R. (2025). *Government Budgeting and Expenditure: A Multifaceted Analysis of Economic Growth, Fiscal Sustainability, and Social Impact*. 17(1), 32–55. <https://doi.org/10.4236/ib.2025.171002>
- Afifah, A. T., Juliprijanto, W., & Destiningsih, R. (2019). Analysis of the Effect of Government Consumption Expenditure and Household Consumption Expenditure in Indonesia in 1988-2017. *Directory Journal of Economic*, 1(2), 12–22.
- Aghsilni & Putri, 2020. (2015). *Analisis Pengaruh Defisit Fiskal Terhadap Pertumbuhan Ekonomi Indonesia* Aghsilni Darvi Mailisa Putri.
- Alfiyati, M., Laila, A. N., & Amalia, F. (2024). Peran Kebijakan Fiskal dalam Menstabilkan Ekonomi Selama Krisis Ekonomi Global: Studi Kasus di Indonesia pasca Covid-19. *JEKP (Jurnal Ekonomi Dan Keuangan Publik)*, 11(1), 49–56. <https://doi.org/10.33701/jekp.v11i1.4479>
- Arbelaez, M. A., & Poterba, J. (2002). *Debt and Deficits: Colombia's Unsustainable Fiscal Mix*. July, 1–39.
- Ayyubi, M. S. Al, & Saputra, P. M. A. (2021). Indonesian government's primary balance and debt. *Jurnal Ekonomi Dan Bisnis*, 24(1), 133–152. <https://doi.org/10.24914/jeb.v24i1.3770>
- Barro, R. J. (1990a). Government Spending in a Simple Model of Endogeneous Growth. *Journal of Political Economy*, 98(5, Part 2), S103–S125. <https://doi.org/10.1086/261726>
- Barro, R. J. (1990b). Government Spending in a Simple Model of Endogeneous Growth. *Journal of Political Economy*, 98(5, Part 2), S103–S125. <https://doi.org/10.1086/261726>
- Behera, B. K., & Mallick, H. (2022). Does Fiscal Deficit Matter for Economic Growth Performance of Indian States? *Indian Public Policy Review*, 3(6 (Nov-Dec)), 16–44. <https://doi.org/10.55763/ippr.2022.03.06.002>
- Bulus, D. (2019). *PUBLIC DOMESTIC DEBT AND INTEREST RATE IN NIGERIA*: 6(1), 111–143.
- Buniarto, E. A., Umasugi, M., Musyarofah, A., & Setiawan, J. (2025). *Analysis of the Long-Term Impact of Public Debt Policy on Macroeconomic Stability in Indonesia*. 4(1). <https://doi.org/10.55299/ijec.v4i1.1292>
- D, N. C. P. (2019). Do Fiscal Deficits Stimulate Economic Growth in Nigeria?

- A Disaggregated VAR Analysis. *Journal of Economics and Sustainable Development*, 10(11), 23–35. <https://doi.org/10.7176/jesd/10-11-03>
- de Oliveira, U. R., Gomes, T. S. M., de Oliveira, G. G., de Abreu, J. C. A., Oliveira, M. A., da Silva César, A., & Aprigliano Fernandes, V. (2022). Systematic Literature Review on Sustainable Consumption from the Perspective of Companies, People and Public Policies. *Sustainability (Switzerland)*, 14(21). <https://doi.org/10.3390/su142113771>
- El Husseiny, I. A. (2023). The relative effectiveness of fiscal and monetary policies in promoting Egypt's output growth: an empirical investigation using an ARDL approach. *Journal of Economic Structures*, 12(1). <https://doi.org/10.1186/s40008-023-00298-8>
- Ezeabasili, V. N., & Ph, D. (2012). *ECONOMIC GROWTH AND FISCAL DEFICITS: Empirical Evidence from Nigeria*. 2(6), 85–96.
- Galí, J., López-Salido, J. D., & Vallés, J. (2007). Understanding the effects of government spending on consumption. *Journal of the European Economic Association*, 5(1), 227–270. <https://doi.org/10.1162/JEEA.2007.5.1.227>
- Gyasi, G. (2020). The Impact of Fiscal Deficit on Economic Growth: Using the Bound test Approach in The case of Morocco. *Munich Personal REPEC Archive*, 96228, 1–21.
- Hani Handayani, A. S. (2019). Jurnal Ilmiah Jurnal Ilmiah. *Jurnal Ilmiah Aset*, 7(1), 24–33.
- Husriah. (2019). Pengaruh Defisit Anggaran Pendapatan Dan Belanja Negara Terhadap Pertumbuhan Ekonomi Di Indonesia. *Jurnal Economix*, 7, 17–24.
- Hussain, M. E., & Haque, M. (2017). Fiscal deficit and its impact on economic growth: Evidence from Bangladesh. *Economies*, 5(4). <https://doi.org/10.3390/economies5040037>
- Indrawati, S. M., Satriawan, E., & Abdurrohman. (2024). Indonesia's Fiscal Policy in the Aftermath of the Pandemic. *Bulletin of Indonesian Economic Studies*, 60(1), 1–33. <https://doi.org/10.1080/00074918.2024.2335967>
- Istiqomah, N., & Mafruhah, I. (2022). Economics Development Analysis Journal The Effect of Budget Deficit in Indonesia: A Comparative Study Article Information. *Economics Development Analysis Journal*, 1, 110–119.
- Katsimi, M., & Sarantides, V. (2012). The impact of fiscal policy on profits. *Economic Inquiry*, 50(4), 1050–1068. <https://doi.org/10.1111/j.1465-7295.2011.00408.x>
- Kshetri, T., Thapa, S. S., & Thapa-parajuli, R. (2025). *Budget Deficit and Economic Growth in Nepal: ARDL Bound Test Analysis. December 2023*. <https://doi.org/10.3126/ejon.v46i3-4.73399>
- Matthew Ikechukwu, O., & A. Omojolaibi, J. (2020). Interrelationship Between Fiscal Deficit, Aggregate Savings and Investment: A Test of Ricardian Equivalence Hypothesis in Nigeria. *Tanzanian Economic Review*, 10(1), 53–70. <https://doi.org/10.56279/ter.v10i1.55>
- Muharman, B. (2013). Analisis Dinamis Pengaruh Instrumen fiskal Terhadap PDB dan Inflasi di Indonesia. *Jurnal Ilmiah Mahasiswa FEB Universitas Brawijaya*, 1(2), 1–16.
- Mulugeta, E. T. (2021). Macroeconomic Determinants of External Debt Accumulation in Ethiopia: An ARDL Bound Testing Approach. *African*

- Journal of Economics and Sustainable Development*, 4(2), 1–28.
<https://doi.org/10.52589/ajesd-5chik2tr>
- Naveed et al. (2013). [WIP] Mp r a. *Economic Policy*, 2116, 0–33.
- Prasetya, G. B., & Setyowati, E. (2023). Determinants of the Budget Deficit in Indonesia for the Period 1996-2021. *Medan International Conference Economics and Business*, 1(January), 1222–1230.
- Putri, I. A. (2021). Analisis Perngaruh Konsumsi, Investasi, Dan Inflasi Terhadap Produk Domestik Bruto Di Indonesia Tahun 2000-2019. *Jurnal Ekonomi Dan Bisnis UMS Surakarta*, 7(5), 25–35.
- Putri, M. A. K., Utama, C., & Mokoginta, I. S. (2022). the Impact of Fiscal Space on Indonesia'S Fiscal Behavior. *Buletin Ekonomi Moneter Dan Perbankan*, 25(2), 235–256.
<https://doi.org/10.21098/bemp.v25i2.1845>
- Rachmawaty, Suteja Jaja, H. A. (2024). *INDONESIAN TREASURY REVIEW ARE MONETARY AND FISCAL POLICIES EFFECTIVE IN CONTROLLING*.
- Rahman, Y., Rahmayani, D., & Hapsoro, B. (2022). *Debt Sustainability Measurement Model in Indonesia using Fiscal Diagnostics*.
<https://doi.org/10.4108/eai.27-7-2021.2316847>
- Retnowati, D., Purnomo, S. D., Jati, D., Zumaeroh, Z., Adhitya, B., Fatmawati, A., & Kencana, H. (2024). Fiscal Policy, Monetary Policy and Economic Growth in Indonesia. *MIMBAR: Jurnal Sosial Dan Pembangunan*, 79, 44–53.
<https://doi.org/10.29313/mimbar.vi.3424>
- Sari, V. K. (2022). Debt and Economic Growth: The Case of Indonesia. *Journal of Developing Economies*, 7(2), 198–207.
<https://doi.org/10.20473/jde.v7i2.25722>
- Shintya, F., & Wahyudi, D. (2022). Pengaruh Ekspor, Impor, Defisit Fiskal, Dan Utang Luar Negeri Terhadap Pertumbuhan Ekonomi Di Indonesia Periode 2017 – 2020. *Kompak :Jurnal Ilmiah Komputerisasi Akuntansi*, 15(2), 358–369.
<https://doi.org/10.51903/kompak.v15i2.769>
- Steve Hatfield-Dodds, R. N. and D. C. (2007).
- Storey, J. (2017). Theories of consumption. *Theories of Consumption*, 108215, 1–144.
<https://doi.org/10.4324/9781315559209>
- Sugiarto, S., & Wibowo, W. (2020). Determinants of Regional Household Final Consumption Expenditure in Indonesia. *Jejak*, 13(2), 332–344.
<https://doi.org/10.15294/jejak.v13i2.25736>
- Sugiarto, T., Madu, L., Subagyo, A., Sugiyanto, & Achmadi. (2018). International application model short-long term between GDP and consumption: Case study Indonesia. *ECONOMICS - Innovative and Economics Research Journal*, 6(1), 81–90. <https://doi.org/10.2478/eoik-2018-0004>
- Suparjito, S., Sarungu, J. J., Soesilo, A. M., Samudro, B. R., & Hasanah, E. U. (2020). The Effect of Government Consumption and Government Investment as Intervening Variables to Growth in Indonesia. *Jurnal Ekonomi Pembangunan: Kajian Masalah Ekonomi Dan Pembangunan*, 20(2), 193–207.
<https://doi.org/10.23917/jep.v20i2.6822>
- Swasono, D. A., & Martawardaya, B. (2015). Pengaruh Defisit Fiskal terhadap

- Pertumbuhan Ekonomi di Indonesia Periode 1990-2012. *Jurnal Ekonomi Dan Pembangunan Indonesia*, 15(2), 144–157.
<https://doi.org/10.21002/jepi.v15i2.03>
- Syukri, A. U. (2020a). Causality Between Gross Domestic Product, Exports, Imports, Foreign Exchange Reserves, and Foreign Debt in Indonesia. *Journal of Developing Economies*, 5(2), 107.
<https://doi.org/10.20473/jde.v5i2.18275>
- Vrachimis, K., & Zachariadis, M. (2013). A contribution to the empirics of welfare growth. *B.E. Journal of Macroeconomics*, 13(1), 213–244.
<https://doi.org/10.1515/bejm-2012-0042>
- Widiyanti, M. (2011). the Impact Fiscal Deficit and the Impact of Macroeconomic Variables on Inflation Rates in Indonesia. *Proceeding of the Malaysia-Indoensia International Conference on Economics, Management, and Accounting 2011*, 224–238.
- Wihastuti, L. (2008). PERTUMBUHAN EKONOMI INDONESIA: Determinan dan Prospeknya. *Jurnal Ekonomi & Studi Pembangunan*, 9(1), 30660.
- Zagler, M., & Dürnecker, G. (2003). Fiscal policy and economic growth. *Journal of Economic Surveys*, 17(3), 397–418.
<https://doi.org/10.1111/1467-6419.00199>
- Zainal, M., Insukindro, I., & Makhfatih, A. (2022). Fiscal Cyclicity Under State Finances Law in Indonesia. *Jurnal Ekonomi Dan Studi Pembangunan*, 14(1), 109.
<https://doi.org/10.17977/um002v14i12022p109>
- Zaluchu, S. E. (2021). *Analisis Pengaruh Pengeluaran Pemerintah, Defisit Fiskal, Utang Luar Negeri Terhadap Produk Domestik Bruto (Pdb) Indonesia Tahun 1989-2019*. 3(March), 6.