

THE RELATIONSHIP BETWEEN STATE BUDGET REVENUES; EXPENDITURES AND INFLATION IN VIETNAM: INSIGHTS FROM QUANTITATIVE ANALYSIS

NGUYEN THI VAN ANH

PhD, University of Labour and Social Affairs. Email: nguyenvananh83@ulsa.edu.vn,
ORCID: 0009-0008-4703-2014

LE THI KIM NHUNG*

PhD, Associate Professor, Thuongmai University.
*Corresponding Author Email: kimnhung2015@tmu.edu.vn

Abstract

The study examines the relationship between government budget revenues and expenditures and inflation in Vietnam. Using a combination of qualitative and quantitative research methods, the research team demonstrates that state budget revenues and expenditures have a certain impact on the inflation rate in Vietnam during the period from 2005 to 2024. Annual data on government budget revenues and expenditures and the inflation rate (represented by the Consumer Price Index – CPI) were collected and analyzed using EViews 12 software. The regression results indicate the following: There is a positive relationship between government expenditure (CNS) and inflation, with a 1% increase in government spending leading to a 2.193227% increase in the CPI; There is an inverse relationship between government revenue (TNS) and inflation, with a 1% increase in government revenue leading to a 1.491342% decrease in the CPI; There is a positive relationship between budget deficit and inflation, with a VND 1,000,000 billion increase in the budget deficit resulting in a 0.974% increase in the CPI. Based on the research findings, the team proposes several policy recommendations for managing fiscal policy and stabilizing inflation, aiming toward overall macroeconomic stability.

Keywords: Relationship, Government Revenue, Government Expenditure, Inflation, Vietnam.

1. INTRODUCTION

In the context of global fluctuations, the management of fiscal policy faces numerous challenges and obstacles. The budget balance is increasingly at risk of becoming unsustainable, potentially leading to a rise in public debt. As an economy with a high degree of openness, Vietnam is inevitably strongly affected by external shocks, compounded by internal pressures. Since 2011, the National Assembly and the Government of Vietnam have consistently prioritized macroeconomic stability as a central goal. Public spending aimed at supporting economic growth and controlling inflation has become a key element of fiscal policy, ensuring the effective implementation of annual and medium-term socio-economic development plans. Therefore, the effective implementation of fiscal and monetary policy solutions, along with support measures to alleviate difficulties for businesses and citizens, plays a decisive role in achieving the objectives of stabilization, maintaining the recovery momentum, and fostering economic growth. (Chinhphu.vn, 2023) In recent years, Vietnam's state budget revenues (NSNN) have faced significant adverse impacts due to the decline in production and business activities of enterprises and citizens. Additionally, government revenue has been reduced

as a result of the implementation of various support measures. Meanwhile, the state budget is still required to cover regular expenditures and provide funding for development investment - particularly the increasing demands for social welfare spending and disease prevention and control efforts. These factors have posed major challenges to balancing the state budget (Song Tra, 2023). As a result, the management of fiscal policy and the formulation of budget revenue-expenditure strategies in Vietnam have not achieved the desired level of effectiveness. Studying the relationship between state budget revenues and expenditures and inflation in the current period not only helps clarify the linkage between these fiscal components and inflation, but also serves as a foundation for further research into broader issues such as the interrelation between budget revenue-expenditure and macroeconomic variables like fiscal decentralization, economic growth, optimal public debt, and the interplay between budget deficits and inflation...

Recognizing the urgency of the issue and the importance of identifying the relationship between state budget revenues and expenditures and inflation in Vietnam in recent years, the research team decided to conduct the study titled: ***“An Analysis of the Relationship Between State Budget Revenues and Expenditures and Inflation in Vietnam During the Period 2005–2024.”*** Based on the findings, the study aims to propose several solutions and recommendations for the management of Vietnam's fiscal policy.

2. THEORETICAL FRAMEWORK AND LITERATURE REVIEW

2.1. Theoretical Framework

- *State Budget Revenue*: State budget revenue (NSNN) is an activity conducted by an organization endowed with public authority, and it is inherently associated with the political functions of the state. It involves the mobilization of a portion of the value of social products, in accordance with legal regulations, to form the state budget fund (Article 5, Law on State Budget, 2015).
- *State budget expenditure*: State budget expenditure (NSNN) refers to the allocation and use of the state budget fund to ensure the fulfillment of the state's functions in accordance with specific principles. It is the process of redistributing financial resources that have been centralized into the state budget and directing them toward designated purposes (Article 5, Law on State Budget, 2015).
- *Inflation and inflation measurement*: Inflation is defined as a sustained increase in the general price level of an economy over time. It can also be understood as a decline in the domestic purchasing power of the national currency. (Hoang Thanh Tung, Luong Xuan Duong, 2019)

The general price level is understood as the average price of all goods and services in the economy. It is typically represented by a price index, such as the Consumer Price Index (CPI) or the GDP (D_{GDP}). The inflation rate in an economy can be calculated using the following formula:

$$\Pi^t = \frac{P^t - P^{t-1}}{P^{t-1}} \times 100\%$$

In which:

Π^t : Inflation rate in period t

P^t : Price level at time t

P^{t-1} : Price level at time $t-1$

- *The Relationship Between State Budget Revenues and Expenditures and Inflation:*

The government budget balance is calculated as the total government revenue received minus total government expenditure on all items during a given period. In other words, the budget balance is computed as net taxes minus government spending on goods and services.

$$BB = (Tx - Tr) - G$$

$$BB = T - G$$

In which:

BB: is the budget balance

Tx: is the total revenue from taxes

Tr: is a transfer of income

G: is government spending on goods and services

T: is net tax

When government spending exceeds its revenue - which has commonly occurred in most countries throughout modern history - the government runs a budget deficit. Conversely, when government revenue equals its expenditures, the government has a balanced budget. (Nguyen Van Cong, 2012).

According to Hoang Thanh Tung and Luong Xuan Duong (2019), in cases where the government budget is in deficit, implementing expansionary fiscal policy becomes challenging. So how can total demand be stimulated while maintaining a constant budget balance? The type of fiscal policy that addresses this goal is referred to as a “budget-constrained fiscal policy.” The essence of this policy is that the government offsets any increase in public spending by simultaneously increasing taxes. To maintain an unchanged budget balance, the expansionary effect on output caused by higher government spending is counteracted by the contractionary effect from higher taxes. As a result, the balanced budget multiplier equals one. This means that increasing both government spending and taxes by one unit leads to an increase of one unit in the equilibrium output. In this case, the purchasing power of the economy still increases, and prices rise, leading the economy to face inflationary pressure.

2.2. Literature Review

Numerous empirical studies, both domestic and international, have examined the relationship between the government budget balance and inflation. The study by Emmanuel Duodu et al. (2022) investigated the long-run impact of money supply, budget deficit, and inflation in Ghana. The article also tested classical, monetary, and fiscal theories of the price level using the Vector Error Correction Model (VECM) with data from 1999Q1 to 2019Q4. The results from the VECM model indicated that the budget deficit has a positive effect on inflation, whereas the money supply has a negative effect on inflation.

The study by Bilin Neyapti (2008), which explored the relationship between budget deficits and inflation using data from 54 developed and developing countries, found that budget deficits lead to inflation when the central bank is independent and financial markets are not sufficiently developed to curb inflation.

The research by S.O. Oladipo and T.O. Akinbobola (2011) also focused on the relationship between budget deficits and inflation. The Granger causality test was employed to examine the connection between the two variables. The findings revealed that inflation does not affect the budget deficit, but the budget deficit has a significant impact on inflation. This implies a one-way causal relationship from budget deficit to inflation in Nigeria. Moreover, the study found that the budget deficit affects inflation both directly and indirectly through exchange rate fluctuations.

In the study by K.P.N. Tharaka Niroshan Devapriya and Masaru Ichihashi (2012), the Vector Autoregression (VAR) model was used. The results indicated a positive relationship between budget deficits and inflation. Additionally, the causality analysis revealed a bidirectional causal structure between the budget deficit and inflation in Sri Lanka. The analysis also showed that the main determinants of the inflation rate are the budget deficit, growth of money supply, interest rates, and the country's real exchange rate. Furthermore, the results demonstrated that domestic borrowing has a stronger positive impact on inflation than foreign borrowing, and that there is a bidirectional causal relationship between domestic borrowing and inflation.

Le, L. (2008) conducted a qualitative study analyzing the correlation between budget deficit and inflation in Vietnam. Using descriptive statistics, the study indicated that the budget deficit is a cause of inflation in Vietnam. The author argued that Vietnam's fiscal policy has been consistently expansionary, leading to an average budget deficit-to-GDP ratio of 5%. Further evidence showed that the Vietnamese Government issued a large amount of long-term Government Bonds to raise capital for large-scale investment projects. This expansionary fiscal policy resulted in monetary growth, as most of the outstanding government bonds were repurchased by the State Bank of Vietnam or commercial banks. Nguyen, H. & Nguyen, T. (2010) conducted an empirical study to examine the determinants of inflation in Vietnam during the 2000–2010 period by interpolating monthly data. They carried out cointegration tests to analyze the long-term impact of the budget deficit on inflation. Additionally, they used a Vector Error Correction

Model (VECM) to analyze short-term dynamics and adjustments toward long-run equilibrium. The research findings indicated that the budget deficit had no impact on inflation in the short term, and its long-term impact remained unclear.

Minh, N.T.T. & Duong, N.T.T. (2017) studied the unidirectional relationship: the impact of the budget deficit on the inflation rate in Vietnam. Prolonged budget deficits and efforts to offset the state budget deficit through various methods had different effects on the inflation rate. This impact was analyzed both qualitatively and quantitatively, using five approaches: (i) The impact of inflation on fiscal policy; (ii) The impact of the level of state budget deficit on inflation; (iii) The impact of financing the budget deficit on inflation; (iv) The independence of monetary policy and its effect on inflation; (v) Inflation and the impact of public spending on inflation.

3. RESEARCH METHODOLOGY

Theoretical research methods

The methods of analysis and synthesis are employed to clarify the theoretical foundations of State budget revenue and expenditure, fiscal policy, inflation, and the relationship between State budget operations and inflation in Vietnam.

The article provides an overview of empirical studies on the relationship between State budget revenue and expenditure and inflation in Vietnam as well as in several other economies around the world. Based on this, it identifies a model to examine the relationship between these macroeconomic variables.

Methods of data collection and processing

Secondary data were collected and analyzed from websites such as the General Statistics Office (GSO), International Financial Statistics, the World Bank (WB), reports from the Ministry of Finance, and other sources related to CPI, inflation, budget revenue and expenditure, and budget deficits. Through this, the study identifies both qualitative and quantitative relationships between State budget revenue and expenditure and inflation in Vietnam during the period 2005–2024. *Regarding the relationship between State budget revenue and expenditure and inflation in Vietnam during the period 2005–2024, the research team developed a general equation:*

$$LCPI = C(1) * LCNS + C(2) * LTNS + C(3) * CCNS + C(4) + e$$

In which:

LCPI is the logarithm of the Consumer Price Index (CPI) in the year of study

LCNS is the logarithm of government budget expenditure

LTNS is the logarithm of government budget revenue

CCNS is the budget balance, representing the difference between government revenue and expenditure

With e is the random error term

Research Hypotheses

Hypothesis H1: Government expenditure (CNS) has a positive relationship with the Consumer Price Index (CPI), implying that coefficient C (1) is expected to be positive.

Hypothesis H2: Government revenue (TNS) has a negative relationship with the Consumer Price Index (CPI), implying that coefficient C (2) is expected to be negative.

Hypothesis H3: Budget balance (CCNS) has a positive relationship with the Consumer Price Index (CPI); as the budget balance gap increases, the CPI is expected to rise, implying that coefficient C (3) is positive.

In order to construct an equation representing the relationship between government revenue and expenditure and inflation in Vietnam during the period 2005–2024 (with inflation represented by the Consumer Price Index – CPI), and to test the proposed research hypotheses, the research team carried out the following steps:

Step 1: Use EViews 12 software to run the model with the collected secondary data.

Step 2: Test the statistical significance of the regression coefficients corresponding to the explanatory variables, as well as the overall statistical significance of the model.

A coefficient is considered statistically significant if:

- Prob < 0.05 (mức ý nghĩa 5%)
- Prob(F-statistic) < 0.05 (mức ý nghĩa 5%)

Step 3: Assess the explanatory power of the model through the R-squared and Adjusted R-squared coefficients. The R-squared and Adjusted R-squared indicators show the extent to which the independent variables explain the variation of the dependent variable in the model.

Step 4: Test for model specification errors (diagnostic checking)

A model is considered good (suitable for analysis) not only when its regression coefficients and the overall model are statistically significant, and the R-squared and Adjusted R-squared values are acceptable, but also when it satisfies the classical assumptions, including the absence of autocorrelation and heteroskedasticity. Moreover, the residuals must follow a normal distribution. In this study, the authors used tools in EViews 12 to test for these violations. Specifically:

- The Breusch–Godfrey test was used to check for autocorrelation. The model is considered free from autocorrelation at a certain lag order if Prob (F-statistic) and Prob (Obs*R-squared) are greater than 0.05 (at a 5% significance level).
- The White test was used to detect heteroskedasticity. The model does not suffer from heteroskedasticity if Prob (F-statistic) and Prob (Obs*Chi-squared) are greater than 0.05 (at a 5% significance level).

- The Jarque–Bera test was applied to examine whether the residuals follow a normal distribution. The residuals are considered normally distributed if Prob (Jarque–Bera) is greater than 0.05 (at a 5% significance level).

When all the above conditions are satisfied, the model estimation and result analysis are then carried out.

4. THE RESEARCH RESULTS

4.1. The Relationship Between Government Budget Revenue and Expenditure and Inflation in Vietnam During the Period 2005–2024

The research team collected data on government revenue, expenditure, and the Consumer Price Index (CPI) of Vietnam for the period 2005–2024 from the website of the Ministry of Finance (MOF) and the International Financial Statistics (IFS) database of the IMF.

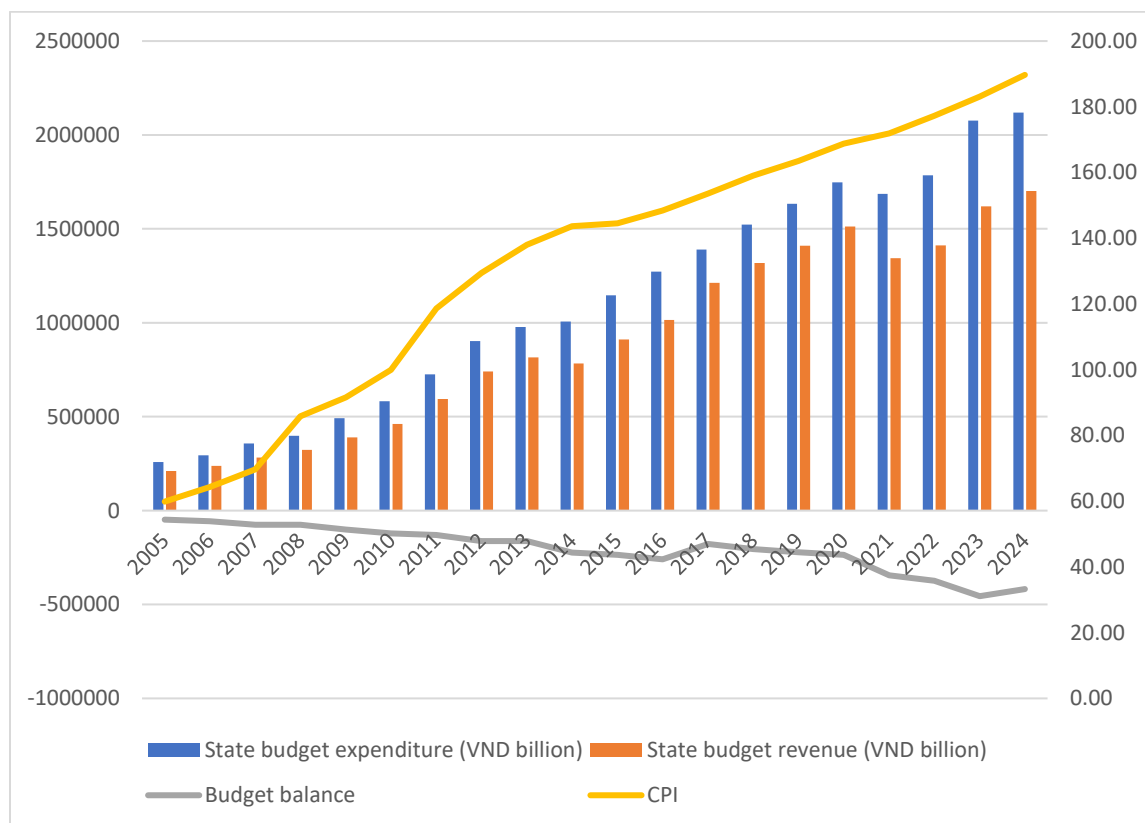


Figure 1: Government Revenue, Expenditure, and CPI in Vietnam (2005–2024)

Source: Compiled from reports by the Ministry of Finance and IFS-IMF

Period 2005–2011

During this period, government revenue showed an upward trend over the years. Specifically, in 2005, State budget revenue reached VND 210.4 trillion (Ministry of

Finance Report, 2005), and by 2011, it had increased to VND 721.804 trillion. On average, government revenue grew by 19.02% per year during the study period (Figure 1). Government expenditure during the period under review also showed an increasing trend over the years. In 2005, State budget expenditure reached VND 258.5 trillion, with an average annual growth rate of approximately 18.87%. By 2011, government expenditure had risen to VND 725.6 trillion. It can be observed that both government revenue and expenditure exhibited an upward trend during the study period. Notably, the average growth rate of government revenue was higher than that of government expenditure. However, the budget balance during the 2005–2011 period remained in a state of deficit. In 2005, the State budget deficit stood at VND 48.1 trillion, and by 2011, it had risen to VND 130.6 trillion. Although both government revenue and expenditure increased during the period, expenditure consistently exceeded revenue, resulting in a persistent budget deficit. In terms of deficit levels, there were fluctuations throughout the period; however, the general trend was an increasing deficit over the years. Regarding the Consumer Price Index (CPI) - used as a proxy for inflation - it showed a gradual increase throughout the period. In 2005, the CPI stood at 59.88 and rose to 118.68 by 2011, indicating an upward inflation trend. Specifically, in 2006, inflation was recorded at 7.4%, and it continued to rise, reaching a peak of 23.11% in 2008 under the impact of the global economic crisis. Although inflation declined in 2009, it surged again and reached 18.7% in 2011 (*Compiled from reports by the Ministry of Finance, IFS-IMF, and the research team's calculations*).

Period 2012 - 2019

The period from 2012 to 2019 continued to show an upward trend in both government revenue and expenditure. In terms of government revenue, it reached VND 740.5 trillion in 2012 and increased gradually over the years, reaching VND 1,411.3 trillion in 2019 (except for 2014, when revenue declined to VND 782.7 trillion). On average, government revenue grew by 19.02% per year during this period. As for government expenditure, the chart also indicates a steadily increasing trend over the years. In 2012, State budget expenditure reached VND 903.1 trillion and gradually increased to VND 1,633.3 trillion by 2019, with an average annual growth rate of approximately 10.83%. During the 2012–2019 period, although the average growth rate of government revenue was significantly higher than that of government expenditure, the budget balance remained in a state of deficit. The deficit levels fluctuated throughout the period. Specifically, the years 2012–2013 saw an increasing deficit, followed by a reduction in 2014. However, the deficit rose again in 2015. From 2016 to 2019, there was a notable improvement in the budget balance, with a sharp decline in the deficit observed in 2017 compared to other years within the study period. It can be observed that government revenue improved significantly during this period, with a considerable average annual growth rate that exceeded the growth rate of government expenditure. However, government spending remained consistently higher than revenue, resulting in a continued budget deficit despite noticeable improvements compared to the previous period. Regarding the Consumer Price Index (CPI), an upward trend was still evident during the period under review. In 2012, the CPI stood at 129.47 and gradually increased to 163.52 by 2019. However, the average inflation rate during this period was approximately 4.3% per year, significantly

lower than in the 2005–2011 period. From 2012 to 2015, inflation showed a downward trend, followed by an increase during 2016–2018. In 2019, inflation decreased again, falling to 2.79%. *(Compiled from reports by the Ministry of Finance, IFS-IMF, and the research team's calculations)*

Period 2020 - 2024

Entering the 2020–2021 period, the COVID-19 pandemic had negative impacts on all aspects of the socio-economic system. During this period, government revenue experienced a decline. Specifically, in 2020, State budget revenue reached VND 1,512.3 trillion; however, in 2021, it dropped to VND 1,343.3 trillion, representing a decrease of 11.175% compared to the previous year. The decline was primarily due to the COVID-19 pandemic, which severely affected the global economy in general and Vietnam in particular. Businesses faced numerous challenges, exports fell sharply as a result of disrupted supply chains, and domestic consumption declined as people tightened their spending during the pandemic.

This led to a decline in tax revenues from sources such as corporate income tax and value-added tax (VAT) compared to previous years. In addition, the Government implemented tax exemption and reduction policies to support businesses and citizens, which further reduced State budget revenue in the short term. Regarding government expenditure, a downward trend was also observed. In 2020, State budget expenditure reached VND 1,747.1 trillion, decreasing to VND 1,687.0 trillion in 2021 - a drop of 3.44%. The main reason was that the Government prioritized adjustments to fiscal policies, reducing public investment expenditures in non-essential sectors in order to concentrate resources on pandemic prevention and control. It can be observed that during this period, both government revenue and expenditure declined due to the pandemic. However, unlike the two previous periods, the reduction in government revenue was significantly greater than that of government expenditure. On the other hand, the budget balance remained in deficit, with the deficit level increasing during this period.

The primary cause was the negative impact of the pandemic: the government had to allocate substantial expenditures for healthcare activities, while the economy stagnated due to social distancing measures and trade restrictions, resulting in government revenue consistently falling below expenditure. Inflation during this period was kept relatively stable. Although inflation in 2020 increased compared to 2019, it declined in 2021 - from 3.22% to 1.83%. This indicates that during the 2020–2021 period, the budget deficit showed a positive correlation with inflation: as the deficit decreased, inflation also tended to decline. *(Compiled from reports by the Ministry of Finance, IFS-IMF, and the research team's calculations).*

Entering the 2022–2024 period, as the economy gradually recovered from the pandemic, positive developments began to emerge. In 2022, both government revenue and expenditure showed an upward trend compared to the previous year; however, expenditure continued to exceed revenue during this period. Specifically, in 2022, State budget revenue increased by 5.09% over the previous year, while expenditure rose by

5.79%. In 2023, State budget revenue reached VND 1,620.744 trillion, representing a 14% increase compared to the same period in 2022. At the same time, government expenditure also increased by 16.34% compared to the previous year, reaching VND 2,076.244 trillion, leading to a higher budget deficit. The reason was that the economy had just begun recovering from the COVID-19 pandemic, requiring the mobilization of resources to address its negative impacts, while economic activities had not yet fully resumed. It was not until 2024 that the economy showed stronger signs of recovery compared to previous years. The growth rate of government revenue exceeded that of expenditure (government revenue increased by 4.95% compared to the previous year, while expenditure grew by only 2.08%). As economic and export activities picked up again, the government expanded its revenue base, and the faster growth in revenue compared to expenditure led to a reduction in the budget deficit. However, the budget balance still remained in deficit, as government spending continued to surpass revenue. In terms of inflation, although the period 2022–2024 witnessed a gradual increase in inflation rates (specifically, 3.15% in 2022, 3.25% in 2023, and 3.63% in 2024), the inflation levels remained within the government's targeted range. *(Compiled from reports by the Ministry of Finance, IFS–IMF, and the research team's calculations).*

4.2. Results from a Quantitative Analysis Perspective

In order to construct an equation representing the relationship between government revenue (TNS) and expenditure (CNS) and inflation in Vietnam during the period 2005–2024 (with inflation represented by the Consumer Price Index – CPI), the research team used EViews 12 software to estimate the model. The estimation results are presented in Table 1.

Table 1: Estimation Results of the Relationship Between Government Revenue and Expenditure and Inflation in Vietnam During the Period 2005–2024

| | | | | |
|-----------------------------------|--------------------|-----------------------|--------------------|--------------|
| Dependent Variable: LCPI | | | | |
| Method: Least Squares | | | | |
| Date: 03/16/25 Time: 13:27 | | | | |
| Sample: 2005 2024 | | | | |
| Included observations: 20 | | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| LTNS | -1.491342 | 0.444141 | -3.357812 | 0.0040 |
| LCNS | 2.193227 | 0.485294 | 4.519380 | 0.0003 |
| CCNS | 9.74E-07 | 2.77E-07 | 3.514802 | 0.0029 |
| C | -4.919717 | 0.702110 | -7.007050 | 0.0000 |
| R-squared | 0.989538 | Mean dependent var | | 4.834622 |
| Adjusted R-squared | 0.987577 | S.D. dependent var | | 0.362848 |
| S.E. of regression | 0.040443 | Akaike info criterion | | -3.401012 |
| Sum squared resid | 0.026170 | Schwarz criterion | | -3.201865 |
| Log likelihood | 38.01012 | Hannan-Quinn criter. | | -3.362136 |
| F-statistic | 504.4718 | Durbin-Watson stat | | 2.146751 |
| Prob(F-statistic) | 0.000000 | | | |

Source: Model estimation results

Model Fit Evaluation

The results in Table 1 show that all regression coefficients are statistically significant, as indicated by the following p-values: Prob (LTNS) = 0.0040 < 0.05; Prob (LCNS) = 0.0003 < 0.05; Prob (CCNS) = 0.0029 < 0.05; and Prob (C) = 0.0000 < 0.05.

The regression model is considered appropriate, given that the Prob (F-statistic) = 0.000000 < 0.05.

The coefficient of determination is R-squared = 0.989538, and the Adjusted R-squared = 0.987577, indicating a high explanatory power of the model.

Breusch–Godfrey Autocorrelation Test

Table 2: Breusch- Godfrey Serial Correlation LM Test (lags = 2)

| Breusch-Godfrey Serial Correlation LM Test: | | | |
|---|----------|----------------------|--------|
| F-statistic | 0.071002 | Prob. F (2,14) | 0.9318 |
| Obs*R-squared | 0.200826 | Prob. Chi-Square (2) | 0.9045 |

Source: Model diagnostic test results

According to the results in Table 2, the values of Prob. F (2,14) = 0.9318 > 0.05 and Prob. Chi-Square (2) = 0.9045 > 0.05 indicate that the model does not suffer from autocorrelation.

Heteroskedasticity Test

Table 3: Heteroskedasticity Test (White)

| Heteroskedasticity Test: White | | | |
|--------------------------------|----------|----------------------|--------|
| F-statistic | 1.492996 | Prob. F (8,11) | 0.2633 |
| Obs*R-squared | 10.41142 | Prob. Chi-Square (8) | 0.2373 |
| Scaled explained SS | 9.279330 | Prob. Chi-Square (8) | 0.3193 |

Source: Model diagnostic test results

The results in Table 3 show that Prob. F (8,11) = 0.2633 > 0.05; Prob. Chi-Square (8) = 0.2373 > 0.05; and Prob. Chi-Square (8) = 0.3193 > 0.05, indicating that the model does not suffer from heteroskedasticity.

Normality Test of Residuals

The residuals of the model follow a normal distribution, as indicated by Prob (Jarque–Bera) = 0.773405 > 0.10 (Figure 2).

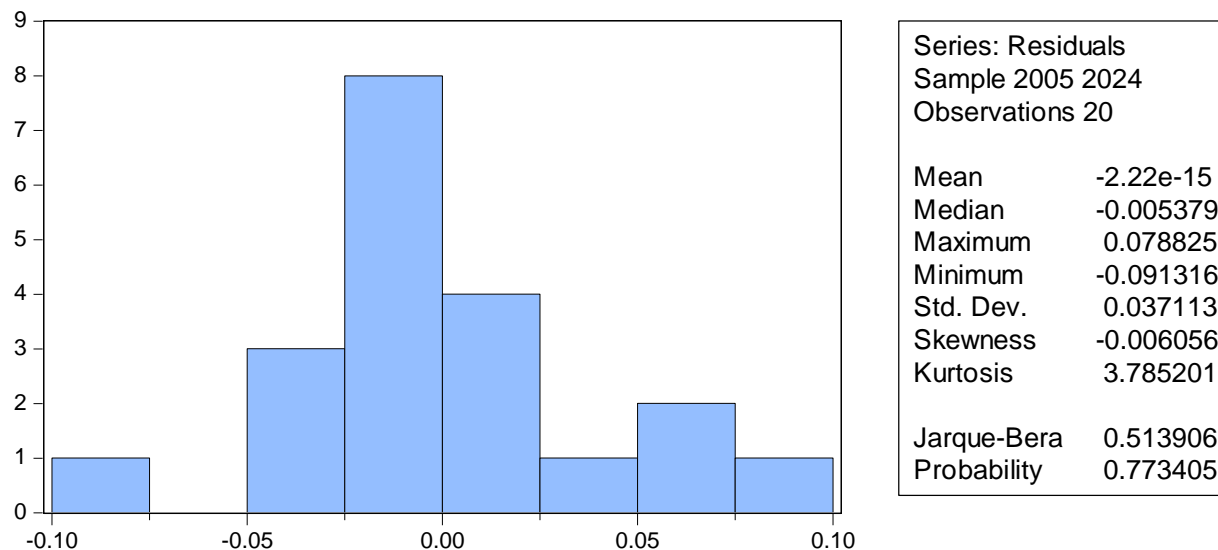


Figure 2: Normally Distributed Residuals

Source: Model diagnostic test results

The Model and Analysis of Estimation Results:

The regression analysis results using EViews 12, as presented in Table 1, reveal the relationship between government revenue and expenditure and inflation in Vietnam during the period 2005–2024, which is expressed in the following equation:

$$\text{LCPI} = 2,193227 * \text{LCNS} - 1,491342 * \text{LTNS} + 9,74\text{E-}0.7 * \text{CCNS} - 4,919717$$

The regression results indicate that:

All explanatory variables in the model are statistically significant at the 5% level (with 95% confidence). The regression results indicate the following: Government expenditure (CNS) has a positive relationship with the inflation rate - when expenditure increases by 1%, the Consumer Price Index (CPI) increases by 2.193227%. Government revenue (TNS) has a negative relationship with inflation - when revenue increases by 1%, the CPI decreases by 1.491342%. The budget deficit also shows a positive relationship with inflation - when the budget deficit increases by VND 1,000 trillion, the CPI increases by 0.974%. These estimation results support the acceptance of research hypotheses H1, H2, and H3. The R-squared value of 0.989538 indicates that Model 1 explains 98.9538% of the variation in LCPI during the period 2005–2024.

5. SOME POLICY IMPLICATIONS

First, it is necessary to enhance the efficiency of government revenue collection in order to support long-term inflation control. The quantitative research results indicate that government revenue has an inverse relationship with inflation - specifically, a 1% increase in revenue leads to a 1.491342% decrease in the Consumer Price Index (CPI). This implies that increasing government revenue not only strengthens fiscal resources but also

helps alleviate inflationary pressures in the economy. Therefore, the government should continue to improve tax policies, broaden the tax base, strengthen revenue administration, reduce tax losses, and accelerate digital transformation in public revenue management to ensure sustainable revenue sources. At the same time, there should be mechanisms to encourage the development of the private sector, expand the scale of formal business activities, thereby broadening the revenue base, reducing the burden of public debt, and contributing to macroeconomic stability.

Second, it is necessary to control the pace and scale of government spending to limit its inflationary impact. The quantitative model analysis shows that government expenditure and the Consumer Price Index (CPI) have a positive relationship -specifically, a 1% increase in expenditure leads to a 2.193227% increase in CPI. This suggests that excessive public spending, especially if focused on recurrent expenditures or used inefficiently, may push aggregate demand beyond the economy's potential supply, thereby creating inflationary pressure. Accordingly, expenditure policy management should prioritize development investment while limiting unnecessary recurrent spending. It is also essential to strengthen monitoring and evaluation of budget use efficiency. In parallel, tightening fiscal and budgetary discipline, and promoting transparency and accountability in public spending, are key to improving effectiveness and minimizing demand-driven inflation risks.

Third, it is essential to focus on controlling the budget deficit and the scale of fiscal imbalances in order to reduce inflationary pressure. The study reveals that the budget deficit has a positive relationship with inflation – specifically, an increase of VND 1,000 trillion in the deficit leads to an approximate 0.974% rise in the Consumer Price Index (CPI). This finding suggests that maintaining a high level of fiscal deficit – particularly when financed through bond issuance or borrowing – can increase the money supply in the economy and exert upward pressure on inflation. Therefore, stronger measures are needed to control the fiscal deficit, ensuring that expenditures remain within revenue capacity and unsustainable borrowing is minimized. In addition, it is necessary to develop a roadmap to gradually reduce the budget deficit-to-GDP ratio while enhancing public debt oversight to avoid placing a fiscal burden on future periods.

Fourth, it is crucial to closely coordinate fiscal policy and monetary policy to control inflation and maintain macroeconomic stability. The relationship between government revenue and expenditure and inflation highlights the importance of policy coordination. In the context where public spending exerts a strong impact on inflation, monetary policy must be adjusted in a flexible and synchronized manner to curb inflation without undermining the momentum of economic recovery.

The State Bank of Vietnam should tightly manage the money supply, interest rates, and credit growth, while the Ministry of Finance must promptly adjust fiscal policies on revenue and expenditure. Coordinated implementation of macroeconomic policies will help stabilize prices, support sustainable growth, and strengthen market confidence.

References

- 1) Chinhphu.vn (2023). Flexible fiscal policy contributes to building an independent and self-reliant economy. <https://www.gso.gov.vn/tin-tuc-khac/2023/02/linh-hoat-chinh-sach-tai-khoa-gop-phan-xay-dung-nen-kinh-te-doc-lap-tu-chu/>
- 2) Song Tra (2023). Fiscal Policy in Support of the Economy. <https://nhandan.vn/chinh-sach-tai-khoa-ho-tro-nen-kinh-te-post764930.html>
- 3) Hoang Thanh Tung, Luong Xuan Duong (2019). Macroeconomics Textbook. University of Labour and Social Affairs. Bach Khoa Publishing House.
- 4) The National Assembly (2015). Law on the State Budget. No. 83/2015/QH13, dated June 25, 2015
- 5) Nguyen Van Cong (2012). Macroeconomics Textbook. Department of Macroeconomics, National Economics University. Labour Publishing House
- 6) Emmanuel Duodu et al (2022). Money supply, budget deficit and inflation dynamics in Ghana: An empirical investigation. *Cogent Business & Management*, 9(1), <https://doi.org/10.1080/23311975.2022.2043810>
- 7) Bilin Neyapti (2008). Budget deficits and inflation: the roles of central bank independence and financial market development. *Contemporary Economic Policy* 21(4), 458-475. <https://doi.org/10.1093/cep/byg025>
- 8) S.O.Oladipo & T.O.Akinbobola (2011). Budget deficit and inflation in Nigeria: a causal relationship. *Journal of Emerging Trends in Economics and Management Sciences* 2(1). <https://hdl.handle.net/10520/EJC133855>
- 9) K.P.N. Tharaka Niroshan Devapriya and Masaru ICHIHASHI (2012). How does the budget deficit affect inflation in Sri Lanka? IDEC Discussion Paper 2012, Hiroshima University
- 10) Le, L., (2008). The linkage between budget deficits and inflation in Vietnam (in Vietnamese). *Journal of Banking*, 18, 24-35.
- 11) Nguyen, H., & Nguyen, T. (2010). Macroeconomic determinants of Vietnam's inflation 2000-2010: Evidence and analysis (VEPR Working Paper WP-09). Retrieved October 30, 2012, from http://www.undp.org.vn/digitalAssets/24/24590_InflationFinalReport-E-formatx.pdf
- 12) Minh, N.T.T & Duong, N.T.T (2017). Effect of budget deficit on inflation rate in Vietnam. *Hue University Journal of Science* Vol. 126, No. 5B, 2017, pp. 117–127. ISSN 1859-1388
- 13) International Financial Statistics (2025). <https://data.imf.org/en/news/accessing%20international%20financial%20statistics>
- 14) General Statistics Office GSO (2024). <https://www.nso.gov.vn/Chinhphu.vn> Chinhphu.vn (2023). Flexible fiscal policy contributes to building an independent and self-reliant economy. <https://www.gso.gov.vn/tin-tuc-khac/2023/02/linh-hoat-chinh-sach-tai-khoa-gop-phan-xay-dung-nen-kinh-te-doc-lap-tu-chu/>
- 15) Song Tra (2023). Fiscal Policy in Support of the Economy. <https://nhandan.vn/chinh-sach-tai-khoa-ho-tro-nen-kinh-te-post764930.html>
- 16) Hoang Thanh Tung, Luong Xuan Duong (2019). Macroeconomics Textbook. University of Labour and Social Affairs. Bach Khoa Publishing House.
- 17) The National Assembly (2015). Law on the State Budget. No. 83/2015/QH13, dated June 25, 2015
- 18) Nguyen Van Cong (2012). Macroeconomics Textbook. Department of Macroeconomics, National Economics University. Labour Publishing House

- 19) Emmanuel Duodu et al (2022). Money supply, budget deficit and inflation dynamics in Ghana: An empirical investigation. *Cogent Business & Management*, 9(1), <https://doi.org/10.1080/23311975.2022.2043810>
- 20) Bilin Neyapti (2008). Budget deficits and inflation: the roles of central bank independence and financial market development. *Contemporary Economic Policy* 21(4), 458-475.
<https://doi.org/10.1093/cep/byg025>
- 21) S.O.Oladipo & T.O.Akinbobola (2011). Budget deficit and inflation in Nigeria: a causal relationship. *Journal of Emerging Trends in Economics and Management Sciences* 2(1).
<https://hdl.handle.net/10520/EJC133855>
- 22) K.P.N. Tharaka Niroshan Devapriya and Masaru ICHIHASHI (2012). How does the budget deficit affect inflation in Sri Lanka? IDEC Discussion Paper 2012, Hiroshima University
- 23) Le, L., (2008). The linkage between budget deficits and inflation in Vietnam (in Vietnamese). *Journal of Banking*, 18, 24-35.
- 24) Nguyen, H., & Nguyen, T. (2010). Macroeconomic determinants of Vietnam's inflation 2000-2010: Evidence and analysis (VEPR Working Paper WP-09). Retrieved October 30, 2012, from http://www.undp.org.vn/digitalAssets/24/24590_InflationFinalReport-E-formatx.pdf
- 25) Minh, N.T.T & Duong, N.T.T (2017). Effect of budget deficit on inflation rate in Vietnam. *Hue University Journal of Science* Vol. 126, No. 5B, 2017, pp. 117–127. ISSN 1859-1388
- 26) International Financial Statistics (2025).
<https://data.imf.org/en/news/accessing%20international%20financial%20statistics>
- 27) General Statistics Office GSO (2024). <https://www.nso.gov.vn/>