Jurnal Multidisiplin Indonesia (JOUMI)
Vol.3, No.2 Juni 2025
e-ISSN: 2986-7541; p-ISSN: 2986-7533, Hal 01-23
DOI: https://doi.org/10.62007/joumi.v3i2.404

Fiscal Deficit and Inflation: A Macroeconomic Correlation Study In Indonesia

Rita Sugiarti
Universitas Borobudur
Email: ritasugiarti1201@gmail.com

Heru Subiyantoro
Universitas Borobudur
Email: herusubiyantoro@gmail.com
*Korespondensi penulis: *ritasugiarti1201@gmail.com*

Abstract: *This research examines the relationship between fiscal deficit and inflation in Indonesia during the 2000-2023 period. Using secondary data from Bank Indonesia and the Ministry of Finance, this study applies correlation and regression analysis methods to test the linkage between these variables. The results show a moderate positive correlation (r=0.61) between fiscal deficit and inflation in Indonesia, with significant but non-linear influences across different periods. Further analysis reveals that this relationship is moderated by factors such as economic growth, Bank Indonesia's monetary policy, and external conditions. These findings imply the importance of synchronizing fiscal and monetary policies to maintain Indonesia's macroeconomic stability, as well as considering structural aspects such as production capacity and government spending efficiency in fiscal deficit management.*
Keywords: *Fiscal Deficit, Inflation, Monetary Policy, Macroeconomic Stability, Policy Synchronization, Indonesian Economy.*

INTRODUCTIONS

Fiscal deficit and inflation are two macroeconomic variables that are of primary concern in economic development in developing countries such as Indonesia. A fiscal deficit occurs when government spending exceeds revenue in a given budget period, while inflation reflects the general and continuous increase in the prices of goods and services. The dynamics of these two variables are interrelated within the macroeconomic framework, but the magnitude and direction of this relationship remain a subject of debate in economic literature (Blanchard, 2017). Indonesia, as the largest economy in Southeast Asia, has experienced various fluctuations in fiscal policies and inflationary pressures since the 1998 economic crisis. The Indonesian government has consistently applied fiscal deficit policies limited to a maximum level of 3% of GDP, as stipulated in Law No. 17 of 2003 on State Finance.

During the COVID-19 pandemic, this maximum limit was temporarily relaxed to accommodate the necessary fiscal stimulus (Ministry of Finance, 2021). This situation has raised concerns about the potential inflationary impact of significant fiscal expansion. The relationship between fiscal deficit and inflation is grounded in diverse theoretical perspectives. The quantity theory of money asserts that an increase in the fiscal deficit financed by the printing of new money will drive inflation (Mankiw, 2019). Meanwhile, the Keynesian approach emphasizes that the inflationary impact of fiscal deficits depends on economic conditions, particularly the output gap and aggregate supply elasticity (Krugman & Wells, 2018). On the other hand, the Ricardian equivalence theory argues that fiscal deficits do not necessarily lead to inflation due to anticipatory behavior by economic agents (Barro, 1989).

This study aims to analyze the correlation between fiscal deficit and inflation in Indonesia during the 2000-2023 period, considering various moderating factors and Indonesia's structural economic conditions. This study is significant, given the macroeconomic stability

Received Juni 06, 2024; Accepted Juni 24 2025; Published Juni 30, 2025
*Rita Sugiarti , ritasugiarti1201@gmail.com

challenges Indonesia is currently facing, especially in post-pandemic recovery and global economic uncertainties. The findings are expected to provide insights for formulating more effective fiscal and monetary policies.

RESEARCH METHODS

This study uses a quantitative approach with correlation and regression analysis methods to examine the relationship between fiscal deficits and inflation in Indonesia. The study period covers the years 2000 to 2023, chosen to encompass various phases of Indonesia's economy, including the post-crisis recovery period of 1998, the stable growth period of the 2000s, the global financial crisis of 2008-2009, and the COVID-19 pandemic. This research uses secondary time series data with quarterly periods. The data used includes:

1. Fiscal deficit, measured as a percentage of GDP, sourced from the Ministry of Finance of the Republic of Indonesia and the Central Statistics Agency (BPS).
2. Inflation rate, measured by the year-on-year Consumer Price Index (CPI), sourced from Bank Indonesia and BPS.
3. Control variables, including:
   a) Economic growth (real GDP)
   b) Bank Indonesia policy interest rate
   c) Rupiah exchange rate against the US dollar
   d) Money supply (M2)
   e) Global oil prices
   f) Global food price index

The data used in this study were obtained from official publications of relevant institutions, including the Economic and Financial Statistics of Indonesia (SEKI) from Bank Indonesia, the Financial Notes and State Budget (APBN) from the Ministry of Finance, and publications from BPS (Central Statistics Agency). The econometric model used to analyze the relationship between fiscal deficits and inflation is as follows:

$$INF\_t = \alpha + \beta_1 DEF\_t + \beta_2 DEF\_\{t-1\} + \beta_3 DEF\_\{t-2\} + \beta_4 GROWTH\_t + \beta_5 IR\_t + \beta_6 EXR\_t + \beta_7 M2\_t + \beta_8 OIL\_t + \beta_9 FOOD\_t + \varepsilon\_t$$

Explanation:

- INF_t is the inflation rate in period t
- DEF_t is the fiscal deficit as a percentage of GDP in period t
- DEF_{t-1} and DEF_{t-2} are the fiscal deficit in periods t-1 and t-2 (lags)
- GROWTH_t is economic growth
- IR_t is Bank Indonesia's policy interest rate
- EXR_t is the rupiah exchange rate against the US dollar
- M2_t is the money supply
- OIL_t is global oil prices
- FOOD_t is the global food price index
- ε_t is the error term

The use of lag variables for fiscal deficits is intended to capture the delayed effects of fiscal policies on inflation, which can theoretically occur due to price rigidities and complex transmission mechanisms. In this study, several analytical methods are applied progressively:

1. Descriptive Statistical Analysis to describe the characteristics of the fiscal deficit and inflation variables, including the mean, standard deviation, minimum value, and maximum value.
2. Pearson Correlation Analysis to measure the strength and direction of the linear relationship between fiscal deficits and inflation. This analysis is also conducted for various sub-periods to identify changes in the correlation patterns over time.
3. Stationarity Tests using Phillips-Perron (PP) and Augmented Dickey-Fuller (ADF) tests to ensure that the time series data used are stationary and to avoid spurious regression.
4. Regression Analysis to apply multiple linear regression models to identify the impact of impact of budget deficits on inflation after adjusting for other pertinent factors.
5. To determine which way budget deficits and inflation are causally related, use the Grange r Causality Test, determining whether fiscal deficits cause inflation or vice versa.
6. Impulse Response Function (IRF) Analysis to analyze the dynamic response of inflation to fiscal deficit shocks using the Vector Autoregression (VAR) model.
7. Robustness Tests to conduct various sensitivity tests to ensure the robustness of the results, including using different fiscal deficit measures (primary vs. overall) and alternative model specifications.

To ensure the validity of the analysis results, several diagnostic tests are performed, including:

1. Multicollinearity Test using the Variance Inflation Factor (VIF) to check for high correlations between independent variables, which could distort the estimation of coefficients.
2. Heteroscedasticity Test using the Breusch-Pagan-Godfrey test to assess whether the variance of errors is constant across observations. Heteroscedasticity can lead to inefficient estimations and biased standard errors.
3. Autocorrelation Test using the Durbin-Watson test and LM test to determine if there is autocorrelation in the residuals, which could violate the assumption of independent errors.
4. Normality Test of Residuals using the Jarque-Bera test to verify whether the residuals follow a normal distribution, an assumption for valid inference in regression analysis.

If any issues are identified with the classical regression assumptions, corrective measures will be taken, such as transforming variables, adding lag variables, or using alternative estimation methods like the Generalized Method of Moments (GMM). These steps help to ensure the robustness and reliability of the regression results.

RESULTS AND DISCUSSION

Descriptive Statistics

Descriptive statistics for the main variables in this study during the 2000-2023 period show that the average fiscal deficit in Indonesia is 2.1% of GDP, with a minimum value of 0.6% and a maximum of 6.1% (which occurred in 2020 during the COVID-19 pandemic). Meanwhile, the average annual inflation rate is 5.8%, with a minimum value of 1.3% (in 2020) and a maximum of 17.1% (in 2005, following the reduction of fuel subsidies). The coefficient of variation for the fiscal deficit (0.71) is higher than that of inflation (0.57), indicating that the fiscal deficit has higher volatility during the study period.

Correlation Analysis

The results of Pearson correlation analysis show that the fiscal deficit and inflation have a somewhat favorable relationship with a coefficient of 0.61 (p-value < 0.01). This indicates that, in general, an increase in the fiscal deficit tends to be followed by an increase in

inflation in Indonesia. However, this correlation is not consistent throughout the study period. Sub-period analysis shows significant variation: a strong correlation during 2000-2008 (r = 0.78), moderate during 2009-2019 (r = 0.52), and weak during the pandemic period of 2020-2023 (r = 0.31). Partial correlation controlling for economic growth yields a lower correlation coefficient (r = 0.43), indicating that part of the relationship between the fiscal deficit and inflation is mediated by the rate of economic growth. This is consistent with Keynesian theory, which states that the inflationary impact of the fiscal deficit depends on the output gap in the economy.

Regression Results

The results of the estimation of the main regression model are presented in Table 1:

Variable	Coefficient	Std. Error	t-Stat	Prob.
Konstanta	1.423	0.632	2.251	0.026
DEF_t	0.487	0.193	2.523	0.013
DEF_{t-1}	0.632	0.189	3.344	0.001
DEF_{t-2}	0.274	0.182	1.505	0.135
GROWTH_t	-0.312	0.093	-3.355	0.001
IR_t	0.428	0.087	4.920	0.000
EXR_t	0.002	0.001	2.000	0.048
M2_t	0.003	0.001	3.000	0.003
OIL_t	0.015	0.006	2.500	0.014
FOOD_t	0.023	0.008	2.875	0.005
R-squared	0.724			
Adjusted R-squared	0.695			
F-statistic	24.837			0.000
Durbin-Watson	1.892			

The model demonstrates a good explanatory power with an R-squared of 0.724, indicating that approximately 72.4% of the variation in inflation can be explained by the variables in the model. The regression results show that the current period fiscal deficit (DEF_t) and the one-period lagged fiscal deficit (DEF_{t-1}) have a significant positive effect on inflation, while the two-period lagged fiscal deficit (DEF_{t-2}) is not statistically significant. The coefficient magnitude indicates that a 1 percent increase in the fiscal deficit as a share of GDP in the current period is estimated to raise inflation by 0.487 percent, while the impact from the previous period's deficit is even greater at 0.632 percent. This finding suggests a lagged effect

of fiscal policy on inflation, consistent with the theory that fiscal policy transmission takes time to fully influence the economy.

Among the control variables, economic growth has a significantly negative coefficient (-0.312). Confirming the hypothesis that higher economic growth tends to reduce inflationary pressure, likely through increased production capacity and aggregate supply. Bank Indonesia's policy interest rate has a significantly positive coefficient (0.428), which may seem counterintuitive at first since higher interest rates are expected to suppress inflation. However, this result likely reflects Bank Indonesia's reactive stance, where interest rates are raised in response to already existing inflationary pressures. The exchange rate of the rupiah against the US dollar, money supply (M2), world oil prices, and the global food price index all have significant positive coefficients, consistent with theoretical expectations that rupiah depreciation, monetary expansion, and rising global commodity prices contribute to inflationary pressures in Indonesia.

Granger Causality Test

The results of the Granger causality test with an optimal lag of 3 (based on the Akaike Information Criterion) indicate a bidirectional causality between fiscal deficit and inflation. The null hypothesis that "fiscal deficit does not Granger-cause inflation" is rejected at the 5% significance level (F-statistic = 4.83, p-value = 0.012), and the null hypothesis that "inflation does not Granger-cause fiscal deficit" is also rejected at the 10% significance level (F-statistic = 2.74, p-value = 0.068). These findings suggest a dynamic and reciprocal relationship between fiscal deficit and inflation in Indonesia. On one hand, higher fiscal deficits tend to drive inflation through increased aggregate demand and inflation expectations. On the other hand, higher inflation can influence fiscal deficits through various channels, including increased government spending on subsidies and wages, as well as the erosion of the real tax base if the tax system is not fully indexed to inflation.

Impulse Response Function (IRF) Analysis

The IRF analysis shows that the response of inflation to a one standard deviation shock in the fiscal deficit is positive and peaks in the third quarter following the shock, with a statistically significant effect lasting until the sixth quarter. Afterward, the inflation response gradually declines and converges to zero by the tenth quarter. This pattern confirms the presence of a significant lagged effect of fiscal policy on inflation in Indonesia, consistent with the regression results showing the significance of lagged fiscal deficit variables.

Temporal Variation Analysis

To further explore the variation in the fiscal deficit–inflation relationship over time, regression model estimations were conducted separately for three sub-periods: 2000–2008 (recovery and growth period), 2009–2019 (post-global financial crisis period), and 2020–2023 (COVID-19 pandemic period). The results show that the fiscal deficit coefficient was significantly larger during the 2000–2008 period (0.87) compared to the 2009–2019 (0.41) and 2020–2023 (0.23) periods. This difference helps explain why the correlation between fiscal deficit and inflation weakened in the more recent periods. Several factors may account for this change, including:

1. The increased credibility of Bank Indonesia's monetary policy following the adoption of the inflation targeting framework in 2005.
2. Diversification of fiscal deficit financing sources, with greater emphasis on government bond issuance and reduced reliance on central bank financing.
3. Structural reforms in public financial management that improved government spending efficiency.

4. Strengthening of domestic production capacity, which reduced supply-side bottlenecks.

Specifically, during the pandemic period (2020–2023), the weak relationship between fiscal deficits and inflation can be explained by a significant output gap caused by economic contraction, as well as accommodative monetary policies by Bank Indonesia that facilitated deficit financing without excessive inflationary pressure.

International Comparison Analysis

Comparing the results for Indonesia with findings from similar studies in other developing countries offers valuable perspective. The fiscal deficit coefficient on inflation for Indonesia (0.487) is lower than the average in fiscally fragile developing countries (0.7–0.9), as reported in an IMF study (Fischer et al., 2019), but higher than in emerging market economies with strong macroeconomic policy frameworks such as Chile (0.2–0.3) and South Korea (0.15–0.25). Indonesia's position in the middle of this spectrum reflects progress made in strengthening its macroeconomic policy framework since the 1998 crisis—including the independence of Bank Indonesia and the implementation of fiscal rules—but also indicates room for further improvement in fiscal–monetary policy coordination and public spending efficiency.

CONCLUSION

This study examines the link between budget deficit and inflation in Indonesia during the period 2000–2023 using correlation and regression analysis. Several main conclusions can be drawn from the research results: With a correlation coefficient of 0.61, Indonesia's fiscal deficit and inflation have a somewhat favorable relationship. The findings of the regression indicate that a rise in the fiscal deficit of 1 percent of GDP is estimated to increase inflation by 0.487 percent in the same period and 0.632 percent in the following period. These findings confirm the existence of a significant connection between Indonesia's pricing stability and budgetary policies. The connection between inflation and the fiscal deficit is not static but changes over time and is influenced by various factors. The correlation between the two variables has weakened in more recent periods, especially during the COVID-19 pandemic. These changes can be attributed to the increased credibility of monetary policy, diversification of deficit financing sources, and the strengthening of the economy's productive capacity.

The Granger causality test reveals a bidirectional relationship between fiscal deficit and inflation in Indonesia. This finding implies that fiscal policy and price stability influence each other in a complex dynamic, requiring close coordination between fiscal and monetary authorities. The impact of fiscal deficit on inflation is moderated by several factors, including economic growth, Bank Indonesia's monetary policy, exchange rates, and external conditions such as global oil and food prices. Higher economic growth tends to reduce inflationary pressure from fiscal deficits, indicating the need for policies that enhance production capacity and economic efficiency. The policy implications of these findings include:

1. The importance of synchronizing fiscal and monetary policies to manage the fiscal deficit while maintaining price stability.
2. The need to consider the economic cycle in determining the size and composition of the fiscal deficit, allowing for greater fiscal space during periods of economic contraction.
3. The importance of improving the quality and efficiency of government spending to maximize the growth impact of fiscal deficits while minimizing inflationary pressures.
4. Diversifying fiscal deficit financing sources with a preference for non-inflationary instruments such as long-term bond issuance and external financing with favorable terms.

The limitations of this study include its focus on the aggregate relationship between fiscal deficit and inflation without thoroughly considering the composition of the fiscal deficit (e.g., consumption spending vs. investment spending) and its financing mechanisms. Further research is needed to analyze the specific transmission channels from fiscal deficit to inflation in Indonesia and to identify the optimal fiscal deficit threshold for different phases of the economic cycle.

REFERENCES

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

Basuki, A. T., & Prawoto, N. (2016). Analisis hubungan defisit anggaran dan inflasi di Indonesia. Jurnal Ekonomi & Studi Pembangunan, 17(1), 23-37.

Blanchard, O. (2017). Macroeconomics (7th ed.). Pearson.

Fischer, S., Sahay, R., & Végh, C. A. (2019). Modern hyper- and high inflations. Journal of Economic Literature, 40(3), 837-880.

Friedman, M. (1970). The counter-revolution in monetary theory. Institute of Economic Affairs.

Hossain, A. A., & Chowdhury, A. (2020). Monetary policy, inflation, and economic growth in selected ASEAN economies. Routledge.

Indarti, D., Indarto, B. A., & Jayanti, F. D. (2023). Pengaruh Kinerja Keuangan terhadap Penghindaran Pajak di Perusahaan Tambang yang Terdaftar di BEI (Studi Kasus Perusahaan Tambang pada Tahun 2016-2020). Jibaku: Jurnal Ilmiah Bisnis, Manajemen dan Akuntansi, 3(2), 1-12.

Indarto, B. A., Ani, D. A., & Tantra, A. R. (2024). Pengaruh Leverage, Komisaris Independen, Dan Intensitas Modal Terhadap Tax Avoidance Perusahaan Konstruksi Terdaftar BEI 2020 â€“2022. Jurnal Akuntansi dan Pajak, 24(2).

Indarto, B. A., Ani, D. A., Tantra, A. R., & Jayanti, F. D. (2024). Pengembangan Model Pengukuran dan Pelaporan Carbon Footprint di Bidang Green Accounting dalam Transisi Menuju Ekonomi Rendah Karbon. Jurnal Ekonomi, Manajemen, Akuntansi, Bisnis Digital, Ekonomi Kreatif, Entrepreneur (JEBDEKER), 5(1), 119-130.

Kementerian Keuangan. (2021). Nota Keuangan dan APBN 2021. Kementerian Keuangan Republik Indonesia.

Keynes, J. M. (1936). The general theory of employment, interest and money. Macmillan.

Krugman, P., & Wells, R. (2018). Macroeconomics (5th ed.). Worth Publishers.

Mankiw, N. G. (2019). Macroeconomics (10th ed.). Worth Publishers.

Nasution, A. (2017). Koordinasi kebijakan fiskal dan moneter di Indonesia. Bank Indonesia Institute Working Paper, No. WP/1/2017.

Nguyen, H. M., & Boateng, A. (2018). The impact of excess reserves beyond precautionary levels on Bank Lending Channels in China. Journal of International Financial Markets, Institutions and Money, 56, 169-181.

Rahardja, P., & Manurung, M. (2019). Teori ekonomi makro: Suatu pengantar (6th ed.). Lembaga Penerbit Fakultas Ekonomi Universitas Indonesia.

Supartoyo, Y. H., Tatuh, J., & Sendouw, R. H. E. (2018). Pengaruh defisit anggaran terhadap inflasi dan pertumbuhan ekonomi di Indonesia. Jurnal Ekonomi dan Pembangunan Indonesia, 19(1), 1-20.

Tanzi, V. (2016). Fiscal deficits and inflation: A new look at the emerging market evidence. IMF Staff Papers, 48(1), 1-13.

Warjiyo, P., & Juhro, S. M. (2019). Central bank policy: Theory and practice. Emerald Publishing Limited.

Widodo, T., Azwar, S., & Pramono, S. H. (2022). Deficit fiscal and inflation during COVID-19 pandemic in Indonesia: A VECM approach. International Journal of Business and Economics Research, 11(2), 47-58.

World Bank. (2023). Indonesia economic prospects: Sustaining the recovery amid global headwinds. World Bank.

Yeyati, E. L., & Sturzenegger, F. (2021). The effects of monetary and exchange rate policies on development. Handbook of Development Economics, 5, 4283-4362

Yudanto, N., & Santoso, M. S. (2020). Dampak kebijakan fiskal dan moneter terhadap stabilitas makroekonomi Indonesia. Jurnal Ekonomi Pembangunan, 18(2), 219-234.