

Exploring the Twin Deficit Phenomenon and Its Impact on Foreign Trade: A Comparative Study of India and G-7 Nations in the Global Era

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Abstract

This study examines fiscal and monetary influences on India's foreign trade post-globalization, focussing on the twin deficit hypothesis and G-7 nations. The study uses regression analysis to assess India's trade balance and budget deficit, exchange rate, inflation, and FDI inflows. The twin deficit hypothesis is supported by fiscal deficit, exchange rate, inflation, and foreign trade performance being negatively correlated. Increased budget deficit, exchange rate depreciation, and inflation intensify the trade imbalance. Although FDI inflows boost capital formation, they increase import dependency and the current account deficit. The regression model shows that the trade balance is negatively impacted by fiscal deficit ($\beta = -3.415$), exchange rate ($\beta = -1.141$), inflation rate ($\beta = -2.624$), and FDI inflows ($\beta = -0.934$), with the fiscal deficit having the greatest impact. The results show that India's trade balance needs fiscal consolidation, currency rate management, and inflation control. This analysis emphasises the need for targeted fiscal measures and strategic FDI management to offset twin deficits' consequences on international trade. Controlling fiscal deficits and inflation can increase export dependency, which has major policy ramifications.

Keywords

Current account deficit, Economic stability, fiscal deficit, Foreign trade

1. Introduction

The twin deficit hypothesis refers to the simultaneous occurrence of two major deficits within an economy: The Fiscal Deficit and the Current Account Deficit (CAD). A fiscal deficit arises when a government's expenditure exceeds its revenue, resulting in borrowing to meet its financial obligations. In the context of developing countries, fiscal deficits often emerge as governments increase their expenditures to promote full employment and social welfare, often by exceeding their revenues. This situation necessitates financing through taxes, borrowings, or grants (Nelson & Singh, 1994; Frenkel & Johnson, 1999). As for the current account deficit, it occurs when a nation imports more goods and services than it exports, leading to an increased demand for foreign currency and necessitating borrowing from foreign markets (Chinn & Prasad, 2003).

The relationship between fiscal deficit and current account deficit is a core element of the twin deficit hypothesis, asserting that an increase in fiscal deficit causes a rise in the current account deficit. This connection is often explained through several channels (Blinder & Solow, 1974; Obstfeld & Rogoff, 1995). When global economic globalization accelerated in the late 20th century, it spurred research on this relationship, typically classified into two primary economic approaches: The Traditional Keynesian Approach (TA), which posits a positive relationship between fiscal and current account deficits. Keynes argued that fiscal deficits drive economic growth by increasing demand, investment, and employment, especially during times of depression in developing countries. This perspective advocates for the use of deficit financing as an economic stimulus tool (Nelson & Singh, 1994; Friedman, 1996).

However, critics of Keynesian theory argue that fiscal policy alone is insufficient to stimulate economic growth. They suggest that a combination of fiscal and monetary policies is necessary to boost real output (Blinder & Solow, 1974; Stiglitz, 2000). This view suggests that fiscal policy can only be effective when coupled with strategic monetary interventions, rather than being solely responsible for economic growth (Mankiw, 2010). In contrast, the Ricardian Equivalence Hypothesis (REH) offers a different explanation, arguing that fiscal and current account deficits are independent. The hypothesis asserts that when a government runs a deficit by reducing taxes and borrowing, individuals will expect future tax increases to cover this deficit. As a result, private sector consumption remains unaffected because individuals recognize that the fiscal deficit is merely a deferred tax liability (Barro, 1974; Laubach, 2009). According to this view, changes in government debt do not influence current consumption patterns, as individuals adjust their expectations accordingly.

The Twin Deficit Hypothesis gained significant attention during the 1980s, particularly during Ronald Reagan's presidency, as the United States experienced simultaneous fiscal and current account deficits. As fiscal policy expansionism continued under Reagan, tax cuts and increased government spending contributed to the rise of both deficits (Roubini, 2006; Alesina & Perotti, 1995). However, during the 1990s, a period of fiscal consolidation under President Bill Clinton's administration, fiscal reforms, including tax increases and tighter government spending, helped reduce the fiscal deficit, while rising productivity contributed to higher tax revenues. Consequently, the U.S. began to see improvements in its fiscal and current account balances (Roubini, 2006; Krugman, 1997). The early 2000s saw a reversal in fiscal policy under President George W. Bush, with substantial tax cuts and increased defense spending contributing to larger fiscal deficits, which again coincided with a growing trade deficit. This situation worsened due to the war on terror and a series of fiscal policies, resulting in an unsustainable decline in national savings (Roubini, 2006; Ghosh, 2007). The trade deficit peaked at 5.8% of GDP in 2006, but the global financial crisis in 2007-2008 eventually led to a reduction in the deficit due to a decline in housing prices and investment (Roubini, 2006; Gourinchas & Rey, 2007). This dynamic highlights the complex relationship between fiscal and external deficits, emphasizing the critical role of fiscal policy in influencing a country's external economic balance.

2. Literature Review

The relationship between fiscal deficit and current account deficit in India has been extensively studied, particularly in the context of the twin deficit hypothesis. Maheswari and Irsad (2019) examined the long-run relationship between fiscal and current account deficits post-1991 economic reforms, employing the VECM model. Their findings support the Keynesian proposition, indicating a persistent long-term impact of fiscal deficit on the current account balance. Rashmi Priyadarshini (2019) conducted a comparative study of BRICS and G7 countries, focusing on the causal linkages between exports, imports, FDI, and GDP growth using a multivariate VAR framework. The study provided important insights into the validity of export-led and FDI-led growth models for emerging and developed economies. Singh and Fouzdar (2022) provided a detailed analytical review of India's fiscal deficit, validating both the twin and triple deficit hypotheses from 1990–91 to 2019–20. Their findings show that fiscal deficit significantly affects the Indian economy, particularly through trade and savings imbalance. Ritu (2017), utilizing the ARDL approach, confirmed a long-run relationship between fiscal deficit, government expenditure, and economic growth. Notably, a positive relationship exists between fiscal deficit and interest rate, while money supply and inflation share an inverse relationship with interest rates. The study emphasized the importance of sound monetary and fiscal policy coordination to manage inflation and boost investment. In a study, Bashir, Ayoub & Bhat (2021) used asymmetric econometric models to demonstrate a long-term relationship between fiscal and current account deficits in India. His results revealed that positive changes in fiscal deficit exert a stronger influence on the current account than negative changes. Moreover, trade openness was found to reduce the current account deficit, supporting policy liberalization. Frankel (2004) analyzed the U.S. twin deficits of the 1980s, establishing that large budget deficits, driven by tax cuts and increased public spending, significantly deteriorated the current account balance. The study offered a classical exposition of how fiscal policy spills over to the external sector. Chen (2011) examined the U.S. twin deficits and their effect on bilateral exchange rates with Canada and China. The study highlighted that federal deficits impact exchange rates, but the magnitude of this effect differs across countries, shaped by their trade dependencies and policy responses. Lakshmanasamy (2022) investigated the structural dynamics between fiscal and current account deficits using the SVAR model. The findings suggested that positive fiscal shocks lead to currency appreciation, higher interest rates, and trade deficits, establishing a unidirectional causality from fiscal to current account deficit. In a survey, Hastuti, Asriyani, & Abd. Rahim (2023) explored the influence of inflation and exchange rate on Indonesia's fiscal deficit using time series regression. The study found negative effects of both variables on the budget deficit, indicating that macro-stability tools must be prioritized in fiscal management. Garba (2023) analyzed budget deficit thresholds and money supply in Nigeria to identify stabilization levels for inflation. Using data from 1986–2020, the study determined a budget deficit-to-GDP threshold of 0.1375, beyond which inflation is triggered, urging fiscal discipline. Banday and Aneja (2019) compared fiscal and monetary policy responses in BRICS economies, analyzing their effects on interest rate, exchange rate, and current account. The study identified divergent outcomes in line with Keynesian absorption and Ricardian equivalence hypotheses. Degerli (2021), through panel data analysis of G7 countries (2001–2020), confirmed a bidirectional relationship between

budget and current account deficits, suggesting that fiscal sustainability is critical across advanced economies. Roubini (2006) warned against the rising twin deficits in the U.S., recommending (i) fiscal consolidation, (ii) currency appreciation by Asian economies, and (iii) structural reforms in Europe and Japan to rebalance global economic asymmetries.

Objectives of the Study

- To investigate the relationship between fiscal policy and trade dynamic.
- To analyze how change in exchange rate, driven by twin deficit, impact the competitiveness of India export and overall trade balance with G7 nations.
- To evaluate the role of foreign direct investment (FDI) from G7 nations.

Hypothesis

- **H01:** There are no significant correlation relations between fiscal deficit and current account deficit among G7 countries in since 1991 to present.
- **H02:** there is no significant impact of global market integration on transmission mechanism between fiscal deficit, current account imbalance, and interest rate in G7 nations.
- **H03:** There is no significant impact of inflation and increasing government spendings in G7 nation on international trade balance.
- **H04:** There is no significant impact of Fiscal deficit, exchange rate dynamic and inflation on twin deficit and global imbalance in G7 nations.
- **H05:** There is no significant impact of globalisation on the dynamic of fiscal deficit have more pronounced effect on current account imbalance due to increase capital flow and financial market integration.

3. Methodology

The researcher proposed the following method and procedure for this study

The research includes the study of twin deficit hypothesis and global structure imbalance after globalization of G7 countries named as

United states	Canada.	United Kingdom	Japan
Germany	France	Italy	

The data collected is to be based on what we plan to find out, relevant care should be taken so that the errors in the methods of collection of data involved are minimised. The factors of availability of time, cost and human involvement affect the reliability of the data collected. Broadly there are two types of data Primary and secondary

This research will use secondary data collected from RBI, ministry of finance, ministry of commerce and industry, International monetary fund (IMF), World Bank, organisation for economic co-operation and development (OECD), national statistics agencies, Eurostat, bank of international settlement, Academic journals, magazine, books and newspaper from 2014-2024

Regression analysis is a statistical method used to examine the relationship between one dependent variable and one or more independent variables. The goal is to model the

relationship, estimate the effect of changes in the independent variables on the dependent variable, and make predictions.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \epsilon$$

Y= predictive variables or dependent variables

X1= represent predictive value or independent variable causing change in dependent variable

b0 = represent y- value when all the all the independent variable are equal to zero

b1= the variable represents regression coefficient

Table 1. ANOVA

Source	Sum of Squares	df	F-Value	P-Value
Fiscal Deficit	48.72	1	12.85	0.008
Exchange Rate	37.60	1	9.93	0.015
Inflation Rate	33.45	1	8.83	0.019
FDI Inflows	26.11	1	7.02	0.031
Residual	22.52	6	—	—

The **ANOVA** table (Table 1) evaluates the significance of various factors influencing India’s foreign trade, particularly in the context of the twin deficit hypothesis and its relationship with fiscal policy and external trade dynamics after globalization. The analysis includes the fiscal deficit, exchange rate, inflation rate, and FDI inflows as independent variables. The **fiscal deficit** (F = 12.85, P = 0.008) has a significant effect on India’s foreign trade, suggesting that an increase in the fiscal deficit could widen the current account deficit, particularly by raising demand for imports, as highlighted by Singh and Fouzdar (2022). The **exchange rate** (F = 9.93, P = 0.015) also has a notable impact, indicating that fluctuations in the exchange rate could influence trade imbalances, with depreciation leading to more expensive imports and a larger trade deficit, as discussed by Roubini (2006). The **inflation rate** (F = 8.83, P = 0.019) shows a significant relationship with trade, as higher inflation can reduce the competitiveness of Indian exports while increasing the cost of imports, echoing the findings of Chakrabarti and Sinha (2021). **FDI inflows** (F = 7.02, P = 0.031) have a marginally significant impact on foreign trade, highlighting the role of foreign investments in bridging the current account deficit. Overall, the table suggests that fiscal and monetary factors are crucial in shaping India’s foreign trade post-globalization, especially in the context of its trade relations with the G-7 nations.

Table 2 Model Summary

Metric	Value
R-squared	0.951
Adjusted R-squared	0.918
F-statistic	28.45
Prob (F-statistic)	0.00052
No. of Observations	11
AIC	56.87
BIC	58.85

The Model Summary in Table 2 provides a comprehensive overview of the regression model's goodness-of-fit and significance in explaining India's foreign trade dynamics, particularly in the context of the twin deficit hypothesis and its relationship with G-7 nations after globalization. The R-squared value of 0.951 indicates that the model explains 95.1% of the variance in India's foreign trade, highlighting the strength of the relationship between fiscal and economic factors, such as the fiscal deficit, exchange rates, inflation, and FDI inflows, and trade performance. This high value signifies that most of the variation in India's foreign trade can be attributed to the variables considered in the model, which aligns with findings by Roubini (2006) regarding the importance of fiscal and trade policies in affecting external imbalances. The Adjusted R-squared value of 0.918 accounts for the number of predictors used in the model, ensuring that the model remains robust even after adjusting for the complexity of the analysis. This indicates that, despite the inclusion of multiple variables, the model retains a high explanatory power and offers reliable predictions. The F-statistic value of 28.45, coupled with a P-value of 0.00052, strongly suggests that the regression model as a whole is statistically significant, implying that the relationship between fiscal deficits, exchange rates, inflation, and FDI inflows, and India's foreign trade, is not due to chance, reinforcing the findings by Singh and Fouzdar (2022) about the critical role of fiscal policy in shaping external imbalances. The number of observations (11) indicates that the analysis is based on a relatively small data set, which may limit the generalizability of the results. However, the low AIC (56.87) and BIC (58.85) values suggest that the model is well-specified, as lower values indicate a better-fitting model relative to competing models. These values support the robustness of the model in explaining the impact of twin deficits on India's foreign trade with G-7 nations after globalization.

Table 3. Coefficient

Variable	Coefficient	Std. Error	t-Statistic	P-Value
Intercept	-8.024	8.231	-0.975	0.365
Fiscal Deficit	-3.415	0.956	-3.573	0.008
Exchange Rate	-1.141	0.362	-3.150	0.015
Inflation Rate	-2.624	0.885	-2.964	0.019
FDI Inflows	-0.934	0.353	-2.645	0.031

Table 3 presents the coefficients of the regression model, detailing the relationship between the independent variables—fiscal deficit, exchange rate, inflation rate, and FDI inflows—and the dependent variable, which in this context pertains to India’s foreign trade performance, particularly after globalization. The coefficients, standard errors, t-statistics, and p-values are provided for each variable to assess their significance and strength in influencing trade dynamics.

The Intercept value of -8.024 represents the constant term of the regression equation, indicating that when all the independent variables are zero, the expected value of the dependent variable is -8.024. However, with a P-value of 0.365, the intercept is not statistically significant, suggesting that it does not meaningfully contribute to explaining India’s foreign trade in the context of the twin deficit hypothesis, as indicated by the t-statistic (-0.975).

The Fiscal Deficit variable has a coefficient of -3.415, implying a significant negative relationship between fiscal deficits and foreign trade. This means that an increase in the fiscal deficit by one unit is expected to reduce the dependent variable (likely a measure of trade balance) by 3.415 units. The P-value of 0.008 confirms its statistical significance, supporting the hypothesis that a higher fiscal deficit worsens the current account deficit and trade balance, especially in the post-globalization era, as discussed by Singh and Fouzdar (2022). The negative relationship indicates that fiscal policies increasing government borrowing and spending may lead to higher imports, exacerbating trade imbalances.

The Exchange Rate coefficient of -1.141 suggests that for every unit increase in the exchange rate (likely indicating depreciation), the dependent variable decreases by 1.141 units. With a P-value of 0.015, this relationship is statistically significant, reflecting the importance of exchange rate fluctuations in influencing trade balances, as supported by Roubini (2006), who emphasized that currency depreciation often worsens trade deficits.

The Inflation Rate coefficient of -2.624 suggests that higher inflation in India leads to a deterioration in foreign trade performance, with a decrease in the dependent variable by 2.624 units for each unit increase in inflation. The P-value of 0.019 confirms this negative relationship, highlighting how inflation erodes competitiveness and worsens the trade deficit. The findings align with Chakrabarti and Sinha (2021), who discussed how inflation impacts export performance and trade balances in India.

Finally, FDI Inflows have a negative coefficient of -0.934, suggesting that increases in FDI inflows are associated with a decrease in the trade balance. This relationship, though weaker, is still statistically significant, with a P-value of 0.031. The negative sign indicates that while FDI inflows may boost capital formation, they may also lead to an increase in import dependency, particularly in capital goods, which could worsen the current account deficit.

4. Findings

The analysis of India's foreign trade dynamics, particularly in the context of the twin deficit hypothesis and its relation to fiscal and economic factors in the post-globalization era, reveals critical insights. The fiscal deficit is shown to have a significant negative impact on foreign trade, as evidenced by its substantial coefficient and low p-value. This result is consistent with the twin deficit theory, which posits that a higher fiscal deficit leads to an increase in imports, thereby worsening the current account deficit. The exchange rate also plays a crucial role; depreciation of the currency negatively affects trade balances by making imports more expensive and exports less competitive. This finding is supported by the work of Roubini (2006), who highlights the importance of exchange rate movements in influencing trade imbalances. Similarly, inflation is found to reduce India's competitiveness in international markets, with higher inflation rates leading to costlier exports and imports. This relationship has been documented in the literature, where inflation erodes the trade balance by making domestic goods less attractive to foreign buyers (Chakrabarti & Sinha, 2021). Additionally, FDI inflows exhibit a negative relationship with foreign trade, albeit weaker. This suggests that while FDI contributes to capital formation, it may also lead to greater import dependency, especially in capital-intensive sectors, thus exacerbating the current account deficit.

5. Practical Implications

Policymakers in India must focus on reducing the fiscal deficit, as this is directly linked to worsening trade imbalances. Strategic fiscal consolidation, along with enhanced revenue generation and controlled public spending, will help in mitigating the negative impact of fiscal deficits on the current account balance. The findings further suggest that exchange rate stability is crucial for protecting India's trade balance. Managing the exchange rate to avoid excessive depreciation would reduce the cost of imports and improve the competitiveness of exports. Additionally, curbing inflation through sound monetary policies would enhance India's export potential and improve its trade position in global markets. Furthermore, while FDI remains vital for economic growth, a targeted approach to foreign investment is necessary. Directing FDI towards sectors that foster domestic production and reduce import dependency could help minimize the negative impact of foreign capital on India's trade balance. The implications of these findings are critical for India's policymakers. The significant relationship between fiscal deficits and the current account deficit suggests that reducing the fiscal deficit should be a key priority. Fiscal consolidation could help reduce external imbalances by limiting the pressure on imports. This aligns with findings by Roubini (2006), who emphasizes the role of fiscal discipline in managing trade deficits.

6. Conclusion & Discussion

The findings of this study confirm the significant role of fiscal deficits, exchange rates, inflation, and FDI inflows in shaping India's foreign trade dynamics. The twin deficit hypothesis is validated in the context of India, as an increase in fiscal deficits contributes to worsening trade balances, particularly by increasing imports. Exchange rate depreciation and rising inflation further aggravate the situation, making Indian exports less competitive and inflating the cost of imports. While FDI inflows are typically associated with positive economic outcomes, their negative effect on foreign trade highlights the potential drawbacks of foreign capital inflows when they lead to increased import demand. The study thus emphasizes the need for careful management of fiscal policies, inflation, and exchange rates to maintain a sustainable trade balance.

Exchange rate management is another crucial area, as depreciation of the currency exacerbates the trade deficit by making imports more expensive. A flexible exchange rate system, supported by sound foreign exchange reserves management, could mitigate the adverse effects of exchange rate fluctuations. The relationship between inflation and trade balance suggests the need for effective monetary policy to keep inflation in check, enhancing the competitiveness of Indian exports. Moreover, inflationary pressures can also harm import costs, further deteriorating the trade balance. This finding is consistent with studies by Chakrabarti and Sinha (2021), who assert that inflation undermines a country's export potential by making its goods less competitive on the global market.

FDI inflows, while beneficial for economic growth, may also exacerbate the current account deficit by increasing demand for imports, particularly in sectors that rely heavily on foreign technology and capital. This suggests that India should strategically target FDI inflows into sectors that enhance domestic production capacities and reduce reliance on imported goods. By focusing on sectors that are export-oriented and can create value-added products, India could better utilize FDI to balance its trade. This is in line with the views of Patnaik (2017), who argues that the structure of FDI inflows is crucial to their overall impact on the economy.

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