

A Dynamic Analysis of Twin Deficits in South Asian Economies

Naveed Munir¹, Muhammad Atiq-ur-Rehman², Rizwan Ahmed Satti³ and Rashid Ahmad⁴

<https://doi.org/10.62345/jads.2025.14.3.139>

Abstract

Developing countries have been consistently facing budget and current account deficits (twin deficits). South Asia is the second-largest region globally with heavy twin deficits. This study examines the presence of twin deficits in South Asian economies, including Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan, and Sri Lanka, for the period 1997-2024. We employed the pooled mean group autoregressive distributive lag (PMG-ARDL) approach for estimation. The empirical verdicts provide strong evidence of twin deficits in the South Asian economies. A significant budget deficit increases the current account deficit, while long-run GDP growth reduces it.

Keywords: Current Account Deficit, Budget Deficit, Twin Deficits.

Introduction

The connection between current account deficits and budget imbalances demands the keen attention of policymakers at the national level (Darrat, 1988; Abell, 1990). The study surprisingly finds that a drastic rise in the budget deficit (BD) leads to the current account deficit (CAD). Economists are tempted to take a keen interest in the mechanism by which budgetary disturbances are translated into current account imbalances. Both of these deficits threaten the economy by deteriorating macroeconomic conditions, such as rising inflation, eroding purchasing power, and increasing internal and external debt burdens, which eventually raise debt service costs and decrease an economy's reserves. This co-movement of these deficits is termed the twin deficits hypothesis (TDH). The hypothesis posits that a disturbance in the budget balance will be reflected in an economy's current account. Simply put, large budget imbalances will result in larger current account imbalances.

Theoretically, TDH holds that an increase in BD is associated with tax cuts or higher public expenditures. In the Keynesian view, a rise in the BD must be supplemented by an increase in the current account discrepancies. The Keynesian proposition expresses a positive nexus between budget and current account deficits. According to this concept, every economy with a flexible exchange rate system faces low aggregate domestic savings because public expenditures exceed government tax revenues. This will raise the country's interest rate relative to the average global

¹Lecturer, Higher Education Department, Punjab, Lahore, Pakistan. Email: naveedmunir0420@gmail.com

²Assistant Professor, Higher Education Department Punjab & Adjunct Faculty, Superior University, Lahore, Pakistan. Email: atiq164@live.com

³Lecturer, Department of Economics, Allama Iqbal Open University, Islamabad. Email: rizwan.ahmed@aiou.edu.pk

⁴Assistant Professor, School of Economics, Bahauddin Zakariya University, Multan.
Email: rashidahmad@bzu.edu.pk



rate. So, an increase in domestic interest rates will provide an incentive for overseas investors to invest in the country and earn higher returns than in the global market, thereby increasing capital inflows. An increase in capital inflows into the country will push the domestic currency higher. This upward movement in the domestic currency will make domestic goods more expensive in the international market, and foreign goods or imports will become cheaper. For this reason, net exports decrease, and the country faces a current account deficit. Many empirical works have examined the causal nexus between the twin deficits, yielding mixed results; hence, the twin deficit hypothesis remains inconclusive. South Asia is the region where historical deficits are common across all countries. According to the IMF, South Asia's budget deficit is the 2nd-largest in the world, at 4.4 per cent of its GDP, after North Africa and the Middle East. At the same time, CAD in the area is expected to rise to about 1.78 per cent of GDP in 2018. South Asian countries have been facing current account deficits alongside budget deficits for many years. Numerous empirical studies have examined the association between these deficits, but the findings have been inconclusive. This motivates us to gain deeper insight into the association between these deficits and their determinants and to provide a better understanding through empirical methodologies. Since 1990, the SAARC region has witnessed a continuous increase in both budget deficit and current account deficits. South Asia's budget deficit is considered the second-largest in the world relative to its GDP. There, several factors, namely political instability, fertiliser and fuel subsidies, a narrow tax net (resulting in lower revenues), several social programs, and natural disasters, contribute to the twin deficits. This distortion in fiscal balances increased the region's debt burden. The pivotal objective of this study is to assess the existence of the twin deficit hypothesis in the South Asian countries.

Literature Review

According to the TDH, a rise in a country's budget deficit leads to a higher current account deficit. Empirical evidence of the TDH may vary from country to country. The findings depend on the economic conditions, the econometric techniques, and the data coverage. Many researchers have empirically tested the TDH. Empirically, the literature history sheds light on the mixed results. Some researchers confirm that the hypothesis is valid; however, others cannot prove the existence of the TDH.

Starting with developed economies, Darrat (1988) also observes an underlying association between BD and the current account imbalance for the USA, using quarterly time series for the period 1960-1984. Using Granger multivariate causality tests along with the Akaike final error prediction criterion, the study finds a two-way nexus between BD and CAD. Bernheim (1988) also analysed the same data sample to investigate the TDH for the USA with its trading partners. By employing the ordinary least squares (OLS) regression technique, the author surprisingly obtains results that differ from those of Darrat (1988) and confirms the twin deficit hypothesis, but finds a one-way association moving from BD to CAD.

Rosenweig and Tallman (1991) used a VAR model for the USA and found results that supported the Keynesian proposition that disturbances in BD lead to CAD. Zietz and Pemberton (1990) also confirm the validity of the TDH. On the contrary, some studies in the US also reject the rationality of Keynesian propositions. Enders and Lee (1990) test the TDH and the Ricardian equivalence proposition for the USA using the same VAR technique on quarterly data from 1947 to 1987. The authors argued that Ricardian equivalence cannot be rejected within the set. This study finds that the current account imbalances and BD are independent of each other. The same results were supported by the study of Dewald and Ulan (1990).

Feldstein (1992) is of the view that it is mistaken to generalise that trade deficits and budget deficits are two sides of the same coin. After that, Normandian (1999) examines the effect of BD on trade deficits for the US and Canadian economies and confirms its positive influence on the external deficit. Yanik (2006) used quarterly utilisation data for 1988-2005 and applied the VAR method to examine the long-run nexus between BD and CAD. Daly and Siddiki (2009) examine the TDH in the G7 nations and find that twin deficits are less prevalent in states with a more widespread financial structure.

Empirical study of Pattichis (2004) for Lebanon by the ECM and Granger causality, which depicts a unidirectional causal nexus moving from BD to trade discrepancies. Margani and Ricciuti (2004) employed panel static and dynamic estimators to examine this association and found mixed results. Panel static estimates support the Ricardian equivalence hypothesis while dynamic estimates suggest that the Keynesian proposition holds. Magazzino (2012) tests the twin deficit using two different sample periods (1970-1991 and 1992-2010). By employing various estimation techniques, including fixed effects, random effects, GMM, PMG, and DOLS, the empirical work confirms the existence of TDH in Europe. Ratha (2012) empirically tests the validity of the TDH in India using monthly and quarterly data from 1998-1 to 2009-9 and 1998-Q1 to 2009-Q1, respectively.

Tufail et al. (2014) use annual data on Pakistan from 1972 to 2011 and employ Johansen cointegration, the ECM, and causality testing to provide support for the Keynesian notion in the long run. Nguyen (2014) used the GMM on yearly data for the period 1985 to 2012 and found twin divergences between budget deficits and current account deficits for Asian countries. Ravinthirakumaran et al. (2016) use the yearly data from 1980 to 2012. By employing the cointegration-based queue, results indicate cointegration for Sri Lanka, while for Nepal and India the Ricardian Equivalence hypothesis holds (REH). Additionally, unidirectional causality is found for Bangladesh, in which current account deficits affect budget deficits.

Wirasti et al. (2017) for Indonesia employed the ARDL and ECM test to test this hypothesis. The author suggests that BD positively affects CAD, thereby confirming the validity of the Keynesian view. Rajakaruna (2021) uses a panel vector autoregressive model to observe dynamic relationships between CAD and fiscal imbalances in South Asian economies. The empirical findings show that budgetary loosening tends to worsen current account balances in most South Asian economies. Mehta (2023) uses a panel dataset across developing countries to examine the determinants of CAD. Empirical estimates using fixed and random effects suggest that fiscal deficits and trade openness are significant determinants of current account deficits, while exchange rates and external shocks mediate this relationship.

Arif et al. (2024) use pooled mean group estimators to examine the short- and long-run nexus between twin and triple deficits in D-8 and G-7 economies. After checking the cross-sectional dependence, estimation techniques such as MG and PMG are employed. In general, the findings do not support the TDH notion. Ren and Liu (2024) utilise a panel data set from developed and developing nations to test the TDH. The military expenditures are used as an instrumental variable in this regard. The empirical findings suggest that BD cause CAD in both developed and developing countries.

Methodology

To test the TDH, we specify the empirical relationship as given below

$$CAD_{it} = f(BD_{it}, RI_{it}, GDP_{it})$$

Where:

CAD_{it} = Current account deficit as a percentage of GDP

BD_{it} = Budget deficit as a percentage of GDP

RI_{it} = Real interest rate (%)

GDP_{it} = Real GDP growth rate (%)

We denote country with 'i' and time with 't'.

The corresponding ARDL (p, q1, q2, q3) model can be written as:

$$CAD_{it} = \alpha_i + \sum_{j=1}^p \lambda_{ij} CAD_{i,t-j} + \sum_{k=0}^{q_1} \beta_{ik} BD_{i,t-k} + \sum_{m=0}^{q_2} \gamma_{im} RI_{i,t-m} + \sum_{n=0}^{q_3} \delta_{in} GDP_{i,t-n} + \varepsilon_{it}$$

The error correction representation may be written as

$$\begin{aligned} \Delta CAD_{it} = & \phi_i (CAD_{i,t-1} - \theta_1 BD_{i,t-1} - \theta_2 RI_{i,t-1} - \theta_3 GDP_{i,t-1}) + \sum_{j=1}^{p-1} \lambda_{ij} \Delta CAD_{i,t-j} \\ & + \sum_{k=0}^{q_1-1} \beta_{ik} \Delta BD_{i,t-k} + \sum_{m=0}^{q_2-1} \gamma_{im} \Delta RI_{i,t-m} + \sum_{n=0}^{q_3-1} \delta_{in} \Delta GDP_{i,t-n} + \varepsilon_{it} \end{aligned}$$

The p, q1, q2, and q3 are the lag lengths of variables in pooled mean group method of ARDL specifications given above. The ARDL requires proper lag length for each variable to be included in the regression. The study uses the Akaike Information criterion (AIC) for the selection of an optimal lag length.

The study employed the ARDL with pooled mean group (PMG) to examine the short run and long run connection between the BD and CAD. These estimators have their own advantages and disadvantages which we have already discussed in the methodology chapter. Before employing the ARDL model we choose an optimal lag for each variable in all three models.

Empirical Results

The empirical findings of this study are shown in the following tables.

Table 1: Panel Unit root

Variables	Im, Pesaran and Shin (IPS)		Levin, Lin & Chu (LLC)	
	Level	1 st difference	Level	1 st difference
CAD	-1.521 (0.0736)	- 5.769*** (0.0000)	- 2.243 (0.0891)	- 7.607*** (0.0000)
BD	-3.6431*** (0.0001)	--- (0.000)	-6.630*** (0.0000)	--- (0.00)
RI	-1.511 (0.1406)	-8.544*** (0.0000)	-1.321 (0.1804)	- 4.497*** (0.000)
GDP	-4.122*** (0.0000)	---	-5.713*** (0.0000)	---

***, ** represents significant level at 1% and 5% respectively. P-values are given in the brackets

Table 2: PMG Estimators Results

Dependent variable: CAD		
Period: 1997-2024		
Long-run coefficients		
BD	0.551**	(0.239)
RI	0.0750	(0.1104)
GDP	-0.9545**	(0.234)
ECT	-0.391***	(0.011)
Short-run coefficients		
BD	0.422*	(0.219)
RI	0.225	(0.083)
GDP	0.054	(0.138)
Note: *** is for $p < 0.001$ ** indicates $p < 0.05$, and * indicates $p < 0.1$.		

Interpretations and Findings

In this study, we used the current account deficit (CAD) as the dependent variable, with the budget deficit (BD), real interest rate (RI), and gross domestic product (GDP) as regressors. The panel unit root test findings are presented in Table A, while the PMG-ARDL results are presented in Table B. The mixed order of integration leads us to apply the PMG-ARDL to obtain short- and long-run estimates.

The empirical findings suggest that, in the long run, the impact of BD on the CAD is positive but weak, whereas in the short run, BD has a strong positive effect on the CAD. This validates the TDH hypothesis, which posits a positive association between BD and CAD. Further GDP growth has a negative influence on the current account deficit, implying that as higher GDP growth strengthens the economy, it lessens liquidity constraints and, hence, reduces the current account deficit in the long run. GDP growth significantly explains the CAD in the long run. However, the impact of GDP growth remains insignificant in the short run. The effect of the real interest rate remains insignificant in both the short- and long-run.

For the validity of the long-run relation among the variables, the ECT coefficient needs to be negative and statistically significant. In our PMG-ARDL model results, the error correction term (ECT) is -0.39, which is statistically significant at the one per cent level. It means that a 39 per cent adjustment or convergence towards the long-run equilibrium is taking place each period.

Conclusion

This work investigates the existence of the TDH in South Asian economies for the period 1997-2024. The PMG-ARDL technique is used for panel data estimation. The empirical results indicate the existence of TDH in the South Asian economies. A budget deficit significantly increases the current account deficit, while long-run GDP growth reduces it.

The South Asian countries face deficits due to huge non-development expenditure. The unproductive non-development expenditures should be controlled. The austerity measures can work well in this regard. There is a lack of coordination between the fiscal and monetary authorities in South Asian countries, which leads to policy failures and twin deficits. So, these authorities should work in coordination. Monetary authorities are responsible for financial and price stability in the country, while fiscal authorities aim to stabilise significant macroeconomic variables, including employment and economic growth. If the monetary authorities adopt a tight monetary

policy to reduce inflationary pressures, the influence of fiscal policy may be diminished or even vanish. Therefore, these authorities should coordinate and collaborate on policy design and implementation to address the twin deficit problem.

References

- Abell, J. D. (1990). Twin deficits during the 1980s: An empirical investigation. *Journal of macroeconomics*, 12(1), 81-96.
- Arif, U., Latif, M., & Arif, A. (2024). Assessing the triple deficit hypothesis in G-7 and D-8 countries: An evidence from heterogeneous panel methods. *International Journal of Economic Policy Studies*, 18(2), 497-527.
- Bernheim, B. D. (1988). Budget deficits and the balance of trade. *Tax policy and the Economy*, 2, 1-31.
- Daly, V., & Siddiki, J. U. (2009). The twin deficits in OECD countries: cointegration analysis with regime shifts. *Applied Economics Letters*, 16(11), 1155-1164.
- Darrat, A. F. (1988). Have large budget deficits caused rising trade deficits? *Southern Economic Journal*, 879-887.
- Enders, W., & Lee, B. S. (1990). Current account and budget deficits: twins or distant cousins?. *The Review of economics and Statistics*, 373-381.
- Feldstein, M. (1992). Analysis: The Budget and Trade Deficits Aren't Really Twins. *Challenge*, 35(2), 60-63.
- Feldstein, M., & Horioka, C. (1980). Domestic Saving and International Capital Flows *The Economic Journal* vol. 90.
- Khalid, A. M., & Guan, T. W. (1999). Causality tests of budget and current account deficits: Cross-country comparisons. *Empirical Economics*, 24(3), 389-402.
- Khan, M. S., & Knight, M. D. (1983). Determinants of current account balances of non-oil developing countries in the 1970s: an empirical analysis. *Staff Papers*, 30(4), 819-842.
- Levin, A., Lin, C. F., & Chu, C. S. J. (2002). Unit root tests in panel data: asymptotic and finite-sample properties. *Journal of econometrics*, 108(1), 1-24.
- Liu, H., & Ren, J. (2024). Do budget deficits cause current account deficits? a re-evaluation utilizing military expenditures as an instrumental variable. *PloS one*, 19(10), e0311664.
- Liu, H., & Ren, J. (2024). Do budget deficits cause current account deficits? a re-evaluation utilizing military expenditures as an instrumental variable. *PloS one*, 19(10), e0311664.
- Magazzino, C. (2012). Fiscal policy, consumption and current account in the european countries. *Economics Bulletin*, 32(2), 1330-1344.
- Marashdeh, H., & Saleh, A. S. (2006). Revisiting budget and trade deficits in lebanon: a critique. *University of Wollongong, Faculty of Commerce - Economics Working Papers*, 06-07.
- Mehta, D., & Mallikarjun, M. (2023). Impact of fiscal deficit and trade openness on current account deficit in India: new evidence on twin deficits hypothesis. *Economia*, 24(2), 172-188.
- Mukhtar, T., Zakaria, M., & Ahmed, M. (2007). An empirical investigation for the twin deficits hypothesis in Pakistan. *Journal of Economic Cooperation Among Islamic Countries*, 28(4).
- Nelson, C. R., & Plosser, C. R. (1982). Trends and random walks in macroeconomic time series: some evidence and implications. *Journal of monetary economics*, 10(2), 139-162.
- Normandin, M. (1999). Budget deficit persistence and the twin deficits hypothesis. *Journal of International Economics*, 49(1), 171-193.

- Pattichis, C. (2004). Budget and trade deficits in Lebanon. *Applied Economics Letters*, 11(2), 105-108.
- Pesaran, M. H., & Smith, R. (1995). Estimating long-run relationships from dynamic heterogeneous panels. *Journal of econometrics*, 68(1), 79-113.
- Rajakaruna, I., & Suardi, S. (2021). The dynamic linkages between current account deficit and budget balance deficit in the South Asian region. *Journal of Asian Economics*, 77, 101393.
- Ratha, A. (2010). Twin deficits or distant cousins? Evidence from India, St. Cloud State University. *Economics Faculty Working Papers*, 5.
- Ravinthirakumaran, N., Selvanathan, S., & Selvanathan, E. A. (2016). The twin deficits hypothesis in the SAARC countries: an empirical investigation. *Journal of the Asia Pacific Economy*, 21(1), 77-90.
- Ricciuti, p. m. e. r. (2004). equivalenza ricardiana in economia aperta: un'analisi empirica. *SIEP Working Paper*, 390
- Rosensweig, J. A., & Tallman, E. W. (1993). Fiscal policy and trade adjustment: are the deficits really twins?. *Economic Inquiry*, 31(4), 580-594.
- Saleh, A. S. (2006). Long-run linkage between budget deficit and trade deficit in Lebanon: Results from the UECM and Bounds tests. *International Journal of Economics, Management and Accounting*, 14(1).
- Tufail, M. K., Anwar, S., Raza, S. H., & Abbas, K. (2014). Effect of budget deficit on trade deficit in Pakistan (a time series analysis). *Journal of Finance and Economics*, 2(5), 145-148.
- Wirasti, A., & Widodo, T. (2017). Twin Deficit Hypothesis and Feldstein-Horioka Hypothesis: Case Study of Indonesia. *MPRA Paper* 77442
- Yanik, Y (2006). The Twin Deficits Hypothesis: an Empirical Investigation. *Middle East Technical University. MS thesis, Turkey*.
- Zietz, J., & Pemberton, D. K. (1990). The US Budget and Trade Deficits: A Simultaneous Equation Model. *Southern Economic Journal*, 57(1).