

Impact of Domestic and Foreign Output Gaps and Exchange Rate Misalignment on Current Account Imbalances: Panel Evidence from Selected SAARC Economies

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Abstract

The study explores the relationships among the four macroeconomic imbalances, namely current imbalance, real exchange rate misalignment, domestic output gap, and foreign output gap for selected SAARC countries for the period 1990 to 2023. Having set a theoretical relationship of the said variables, based on both absorption approach to current account balances and elasticity approach to exports and imports, the study primarily employs a fixed effect model to establish empirical relationship among candidate variables. The empirical results suggest an inverse relation between current account with exchange rate misalignment and domestic output gap, while a positive relation with foreign output gap. To check the robustness of the model, Common Correlated Effect (CCE) model is applied yielding similar results. The findings have important policy implications.

Keywords: Current account imbalance; Domestic and foreign output gap; Exchange rate misalignment; Common Correlated Effect

1. Introduction

A crucial indicator of a nation's stable macroeconomic position and external economic strength is its current account balance (CA). It encompasses activities involving international trade in commodities and services, capital flows, and exchanges with the rest of the world, as well as the disparity between a country's savings and investments (Altayligil and Çetrez (2020). Long-term current account deficits enhance the chance of balance-of-payments crisis, increase dependency on foreign capital inflows, and expose economies to external risks. On the other hand, prolonged surpluses can be a sign of both structural imbalances in domestic demand and high global competitiveness (Dunaway, 2009). Accordingly, implementing successful macroeconomic and exchange rate policies calls for an understanding of the parameters that affect the current account balance.

Exchange rate misalignment and output gaps are key factors affecting the current account balance which have attracted a lot of attention in empirical as well as theoretical literature. The current account balance tends to deteriorate when an overvalued exchange rate boosts imports and lowers the competitiveness of exports (Nasir & Jackson, 2019). A devalued exchange rate, on the other hand, may stimulate exports and strengthen external balances (Umeaduma and Dugbartey, 2023). The effects of exchange rate misalignment are more critical for emerging economies, where export performance and external financing limitations are essential to economic growth.

Exchange rate fluctuations and cyclical movements in economic activity have a significant effect on current account balances (Malik et al., 2024; Balakrishnan, 2026; Kushwaha and Padmanabhan, 2026). National saving and investment are influenced by the internal output gap; during boom periods of the economy, rising consumption and income may be reflected in higher imports and larger current account deficits. On the contrary, economic recessions often result in declining import demand and improved current account positions. Export demand is affected by the external output imbalance, which describes the state of the economies of trading partners (Kolerus, 2021; Kang and Shambaugh, 2016). Strong growth across these nations could raise developing economies' demand for exports, improving their current account balances.

Over the past few decades, economies like Pakistan, India, Bangladesh, and Sri Lanka have realized varied degrees of current account imbalances due to changes in exchange rate rules,

macroeconomic policies, trade rules and regulations, and exposure to global shocks. Pakistan and Sri Lanka frequently suffer from prolonged current account deficits and foreign exchange issues, but Bangladesh and India have consistently demonstrated comparatively better performance in their exports (Mallick, 2023; Hossain et al., 2025). These diverse perspectives provide an important framework for analyzing the elements driving external balances in the territory.

Although prior studies have examined the impact of key macroeconomic fundamentals on current account balances, however, limited research has been conducted on the cumulative impact of exchange rate misalignment, domestic output gaps, and external output gaps in SAARC countries. Specifically, empirical evidence comparing these factors in Bangladesh, Sri Lanka, India, and Pakistan is limited. The growing importance of external sustainability and exchange rate policy in the region suggests a detailed examination.

This study analyzes in detail the influence of exchange rate misalignment, domestic output gap, and foreign output gap on current account balances of Pakistan, India, Bangladesh and Sri Lanka. To provide policy insights for attaining sustainable macroeconomic indicators in the region, this study explores how current account balances respond to the domestic and external imbalances.

2. Literature Review

The importance of both internal and external macroeconomic imbalances in determining current account dynamics is recognized in the literature worldwide. Prior studies acknowledge that exchange rate misalignment, domestic output gaps, and foreign output gaps are significant factors influencing current account fluctuations. For instance, A Velic (2024) investigates the association between fluctuation in current account and real exchange rate under varying degree of nominal exchange rate. Using both linear and non-linear estimation techniques, the study finds a significant but negative connection between real exchange rate and current account imbalances. This is inconsistent with the trend that appears with lower nominal exchange rate volatility, which is either nonexistent or positive. Furthermore, results of this study indicate that a stable relationship between the "current account" and the "real exchange rate" may result from a higher nominal exchange rate adjustment. In the same way, more flexible nominal exchange rates accelerate current account management.

Similarly, two theories concerning exchange rates in emerging markets are empirically tested in the study conducted by (Labrar & Marhoum, 2025; Labrar & Marhoum, 2025). The first theory demonstrates that flexible exchange rate encourages external stability while the second posits that a flexible exchange rate facilitates such adjustments. Using event analysis and the System Generalized Method of Moments for parameter estimate, the study finds that countries with flexible exchange rate policies have faster current account adjustments and smaller external imbalances compared to countries with fixed exchange rate regimes. These findings suggest that to enhance external stability and lessen the financial implications of prolong imbalances, emerging countries could benefit from implementing more flexible exchange rate systems. Furthermore, by implementing counter-cyclical fiscal policies and creating sovereign wealth funds, governments could improve long-term economic stability and offset adverse effects of external shocks.

In addition, study conducted by (Bergin et al., 2025) reinforces Friedman's argument for rapid adjustments under flexible exchange rates by showing that unilateral nominal exchange rate intervention, especially the "fear of appreciation," hinders the adjustment of current account surpluses. It clarifies that countries with more flexible exchange rates realize faster convergence for current account deficits than those with pegged rates, though this outcome is not expected for surpluses. This asymmetry is associated with a selective suppression of exchange rate appreciations in certain countries. A "fear of appreciation" policy rule is also introduced into a multi-country monetary model and addressed as a rarely obligatory constraint. The model illustrates how international financial adjustment is influenced by government capital flows that stabilize exchange rate regimes.

Furthermore, (Boer et al., 2025) examines shocks which explain most of the changes in the current account balance for the United States (US) and other G7 economies. The study finds that rather than traditional shocks to supply and demand or financial but relative demand shocks between US and G7 economies are among the leading source of current account imbalance. More specifically, positive domestic output gaps attract imports and worsen the current account balance, while increasing foreign economic activities enhance exports and improve foreign balances.

Global evidence demonstrates that changes in exchange rates, economic expansion, and fundamental macroeconomic indicators significantly influence current account balances. As reported by Camarero et al. (2025), which shows that output fluctuations and competitiveness

indicators are becoming more important in explaining foreign imbalances as the globalization process has improved the interaction between domestic and foreign factors in influencing current account balances.

Still there remains a lack of empirical evidence in the SAARC region. In this regard, a recent study by Masoom et al. (2025) using data from Bangladesh, India, Pakistan, and Sri Lanka demonstrates that Exchange rate depreciation is strongly correlated with current account balances. This empirical result supports the crucial role of exchange rate management for foreign-sector stability. However, the study did not explicitly account for exchange rate misalignment, domestic output gaps, or international output gaps; rather, it focused primarily on exchange rate implications.

The overall impact of exchange rate misalignment, the domestic output gap, and the external output gap on current account balances in SAARC economies lack significant attention, notwithstanding the growing interest in current account stability. There is a lack of insight regarding the combined impact of foreign competitiveness and cyclical movements on current account efficiency because most of the existing literature examines these variables independently. Thus, through analyzing the combined effects of these factors in Bangladesh, India, Pakistan, and Sri Lanka, the present study contributes to the body of literature and provides updated evidence for selected SAARC countries.

3. Theoretical Background and Econometric Model

The theoretical relationship between the current account balance, domestic and foreign output gaps, and exchange rate misalignment can be best understood through the interplay of absorption approach and elasticity approach with intertemporal models of current account. Current account shows the net transactions of an economy with rest of the world. It is determined by the gap between savings and investment (Absorption approach). Exchange rate misalignment, on the other hand, affects the current account by influencing international competitiveness (Elasticity approach). Overvaluation decreases competitiveness and worsens the current account balance as exports become costlier and imports become cheaper, while undervaluation by the same token improves it, so $\partial CA / \partial ERM < 0$, (see for more detail, Edwards 1989, and Rodrik 2008). Moreover, the absorption approach emphasizes the role of domestic economic activity. According

to this framework, current account balance is the gap between national income and domestic expenditure. When the actual output exceeds its potential level, it reflects that economy is experiencing expansionary phase that leads to strong domestic demand. So, the demand for consumer goods, producer intermediate goods and capital goods increases. This overheated economy deteriorates the current account balance. Conversely, negative output gaps improve the current account balance by lowering the growth of imports (see for instance Obstfeld & Rogoff 1995, Edwards 1989, Chinn and Prasad 2003). This implies that domestic output gap is negatively related to current account, $\partial CA / \partial DY < 0$.

In a globalized world, foreign demand (foreign output gap) also plays a vital role in determining the current account balance. It reflects the cyclical position of a country's major trading partners. A positive foreign output gap creates favorable export opportunities for the domestic economy that improves the domestic current account balance (see for example, Lane and Milesi-Ferretti 2012, Freund 2005). By the same token, economic slowdowns in partner economies lead to decreased imports, and hence exerting downward pressure on current account balances $\partial CA / \partial FY > 0$. So current account balance is primarily determined by relative price competitiveness and cyclical demand condition both at home and abroad simultaneously. Therefore, current account can formally be determined as a function of output gaps and exchange rate misalignment.

$$CA = f \left(\underset{(-)}{ER}, \underset{(-)}{DY}, \underset{(+)}{FY} \right) \quad [1]$$

With expected signs written beneath each variable. In this equation, CA denotes the current account, ER is the exchange rate, where an increase in ER denotes an appreciation of home country. DY is the domestic demand and FY is the foreign demand. In fact, eq. [1] resembles the net exports or current account identities of standard macroeconomics textbooks, like (Blanchard, 2021). But this text doesn't include foreign demand.

This theoretical model is in line with Arghyrou and Chortareas (2008), in terms of the relationship between exchange rate misalignment and current account balance. It also aligns with Gnimmassoun and Mignon (2016), in considering the relationship between current account balances and domestic output gap. Introducing the foreign output gap is the novelty of the study, particularly for SAARC region. However it resembles with Comunale (2017) model that uses world GDP

growth as a control variable for global factors. It also commensurate the findings of (Giovannini et al. 2019) that burgeoning external demand foster current account surpluses. Equation [1] can be translated to an econometric model in panel context as:

$$CA_{it} = \delta_0 + \delta_1 ERM_{it} + \delta_2 Y_{it} + \delta_3 FY_{it} + \mu_{it} \quad [2]$$

where δ_0 is intercept, while ERM, DY, and FY represents the exchange rate misalignment, domestic output gap and foreign output gap respectively, μ is the zero mean and constant variance error term; $i = 1 \dots N$, $t = 1 \dots T$. Here N represents the number of SAARC countries (N=4) and T represents the total time span ranging from 1990 to 2023 (T=34). Details of variables along with their definitions and sources are provided in subsequent section.

More specifically, the study makes use of two popular econometric approaches, the fixed effect complemented by Common Correlated Effects (CCE) regression for robustness check. The fixed effect model is given below:

$$CA_{it} = \omega_i + \delta_1 ERM_{it} + \delta_2 Y_{it} + \delta_3 FY_{it} + \mu_{it} \quad [3]$$

$$\mu_{it} = \gamma_i' S_i + \varepsilon_{it}$$

where ω_i is the time-specific intercept of the model and S_i and γ_i respectively denotes the unobserved shocks and country-specific effects while ε_{it} is usual error term.

Common Correlated Effects (CCE) regression model is given below:

$$CA_{it} = \omega_i + \delta_1 ERM_{it} + \delta_2 DY_{it} + \delta_3 FY_{it} + \gamma_0 \overline{CA}_{it} + \gamma_1 \overline{ERM}_{it} + \gamma_2 \overline{DY}_{it} + \gamma_3 \overline{FY}_{it} + v_{it} \quad [4]$$

where, $\overline{CA}_t = \frac{1}{N} \sum_{i=1}^N CA_{it}$, $\overline{ER}_t = \frac{1}{N} \sum_{i=1}^N ER_{it}$, $\overline{DY}_t = \frac{1}{N} \sum_{i=1}^N DY_{it}$, and $\overline{FY}_t = \frac{1}{N} \sum_{i=1}^N FY_{it}$

4. Data and Empirical Results

4.1. Data and its Sources

The current account (current account as a percentage of GDP) data are retrieved from World Economic Outlook (WEO), the database of International Monetary Fund. The domestic output gap variable is constructed by dividing the output gap by its potential level. The potential level is derived by applying Hodrick-Prescott (HP) filter to the series of natural log of domestic real GDP, where the data for GDP is retrieved from World Development Indicators (WDI), the

database of World Bank. The foreign cyclical demands are depicted by constructing foreign output gap variable. It is the weighted average of output gaps of major trading partners. The output gap for country i , over time t with its trading partner j is given as, $FY_{it} = \sum_{j \neq i} w_{ij} GAP_{jt}$. Here GAP_{jt} designates the output gap of trading counterpart, and w_{ij} designates the share of average bilateral trade (exports plus imports) of country j with country i for a given period.

4.2. Empirical Results and Discussion

4.2.1. Descriptive Analysis

Descriptive statistics presented in Table 1 reveal substantial variation in exchange rate misalignment and current account balances across countries and over time. This suggests that there is considerable cross-country heterogeneity that is appropriate for panel data analysis. Domestic output gap varies in narrow range around zero, while foreign output gap exhibits larger variations suggesting the significance of external economic conditions. The substantial dispersion in model variables indicates necessary variations for identifying the impact of the exchange rate misalignment and business cycle conditions on current account dynamics.

Table 1: Descriptive Statistics

Variables	Mean	SD	Min	Max
CA	-3.142	6.263	-35.072	12.404
ERM	0.131	7.708	-24.277	29.551
DY	0.0000	0.037	-0.317	0.121
FY	-0.007	3.921	-4.975	19.127

Note: Total observations (time x cross section) in each series are (34x4) 136; Source: Authors' own construction.

4.2.2. Cross-sectional Dependence and Unit Root Testing

It is imperative to check for the presence of cross-sectional dependence prior to applying the panel data regression. The traditional panel estimators presume cross-sectional independence, while the countries are linked through regional integration, financial markets and trade. Therefore, the economic shock that originated in one country disseminates to other ones, hence generating correlation among the cross sections. Disregarding such dependence may bring about biased standard errors and hence lead to deceptive statistical inferences. The presence of such dependence is most relevant in case of SAARC countries as they are commonly exposed to external economic and financial shocks. Therefore, testing of Cross-sectional dependence is necessary to choose an

appropriate estimation technique and second-generation unit root tests that cater for such interdependencies. The results for the test of cross-sectional dependence are presented in Table 2. All the four tests confirm the interdependence among the SAARC region countries.

Table 2: Cross-sectional Dependence

Test	test-statistic
Pesaran (2007) CD Test	-4.158***
Breusch-Pagan (1980) LM Test	10.841*
Friedman's test	33.820***
Frees' (1995, 2004) test	0.054***

Note: Ho: All cross-sectional units are independent; * and *** respectively denotes significance at 10% and 1% significance level. Source: Authors' own construction.

In addition to testing for presence of cross-sectional dependence, the homogeneity of the parameters across the SAARC region is assessed via *Blomquist & Westerlund, (2013)* and Pesaran and Yamagata, (2008) tests.

Table 3: Slope Heterogeneity

Statics	Pesaran & Yamagata (2008)		Blomquist & Westerlund (2013)	
	Value	p-value	Value	p-value
Delta	1.519	0.129	0.891	0.373
Adjusted Delta	1.676*	0.094	0.983	0.326

Note: Ho: All cross-sectional homogenous slope; * denotes significance at 10% significance level; Source: Authors' own construction.

Blomquist-Westerlund fails to reject the null of same slope in SAARC countries. Though Pesaran-Yamagata Adjusted Delta statistic leads to weak rejection (at 10% significance level), however, overall results show that slopes of the member countries are homogenous, suggesting that these countries react to the external shocks in the same manner. Consequently, estimators assuming homogeneous slopes are considered appropriate for the subsequent analysis.

As a next step, all variables are tested for possible unit root using second generation panel unit root CADF test proposed by Pesaran (2007). The results of CADF-statistic are presented in Table 3¹.

Table 4: Panel Unit Root Test (LLC, IPS and CADF)

Variable	LLC-statistic (Adjusted)	IPS-statistic	CADF-statistic
CA	-2.9016***	-2.9710***	-2.501***
ERM	-3.7664***	-4.0857***	-3.321***
DY	-5.0380***	-6.0081***	-3.207***
FY	-17.9893***	-23.3057***	-3.423***

Note: *** indicates rejection of H_0 (of non-stationarity) at 1% significance level.

4.2.3. Fixed Effect and Common Correlated Effects (CCE) Model

Since all variables are found to be $I(0)$, the next step is to find the impact of ERM, DY and FY on CA. This is done via two popular approaches. First, using fixed and/or random effect models to capture unobserved heterogeneity across cross-sectional units (countries) and/or time and using Hausman test to choose between the two. The results of Hausman test favored a fixed effect model. Since slope is homogenous as (Blomquist & Westerlund, 2013) and (Pesaran & Yamagata, 2008) (see Table 3), the study employs fixed effect, and the results are provided in Panel (A) of Table 5. As a second better alternative and to compliment findings of fixed effect approach, the study uses Common Correlated Effects (CCE) regression which has two key advantages over fixed effect approach: a) CCE controls for cross-sectional dependence which is generally ignored by fixed effect approach. As the findings of battery of cross-sectional dependence tests (Table 2) favor the presence of cross-sectional dependence among countries, so CCE is a better approach. Moreover, in contrast to fixed effect, CCE controls unobserved common factors which are likely to be present in panel data. The results of CCE are provided in Panel (B) of Tabel 5.

¹ For comparison purpose, the first-generation unit root tests (LLC and IPS) are also applied and reported in Table 4.

Table 5: Fixed Effect Results

Variable	Panel (A): Fixed Effect Results			Panel (B): CCE Results		
	Coefficient	SE	t-statistic	Coefficient	SE	t-statistic
ERM	-0.069**	0.0383	-1.79	-0.068**	0.033	-2.03
DY	-21.617**	11.355	-1.90	-21.617**	10.021	-2.16
FY	0.539***	0.123	4.38	0.539	0.109	4.96
F-statistic	3.62***			13.25***		
R-Square	0.457			0.457		
RMSE	1.863			1.642		

Note: Robust SEs are used; *, **, *** respectively denotes significance at 10%, 5% and 1% significance level.

The empirical results obtained from the CCE estimator (Panel B in Table 5) are remarkably similar to those obtained from the fixed effects model (Panel A in Table 5), with only minor differences in the estimated standard errors. This finding suggests that although cross-sectional dependence exists, the estimated effects of exchange rate misalignment, domestic output gap, and foreign output gap are robust to alternative treatments of common shocks. The findings are in line with (Freund, 200), Camba-Crespo et al., 2022, Masoom et al., 2025) and in contrast with (Chinn and Prasad, 2003, Backus et al., 1992, Erceg et al., 2005).

5. Conclusion and Policy Implications

The impact of increased integration of world economies on current account imbalances has been becoming increasingly important for last couple of decades. The study aims to illuminate the issue by establishing the relationship between current account imbalances, domestic and foreign output gap, and exchange rate misalignment. As these imbalances have serious economic repercussions, it is imperative for the policy makers to have full understanding of these relationships to develop an effective economic policy. To clarify the relationships among these four imbalances, the study lay down a theoretical framework and then performs empirical estimates for the panel of selected SAARC countries between 1990 to 2023. Study carries out fixed effect as well as common correlated effects estimates.

The empirical results found in this study are generally consistent with the theory presented above and with literature available on this issue. The study finds a significant inverse relationship

of current account with domestic output gap. It also establishes that an overvalued REER deteriorates the current account balance, while undervaluation ameliorates it. Similarly strong trading partner economies have significant positive impact on current account balance.

So, various policy recommendations can be outlined from these results to address the unwarranted imbalances. First, Exchange rate policy should aim to maintain competitive REER to avoid persistent overvaluation rather than simply going for undervaluation. Second, during excessive domestic demand, Prudent demand management policies should be adopted to maintain moderate import growth to improve current account position. Finally, rather than relying merely on exchange rate depreciation, government should focus on policies that improve productivity through efficiency gains to improve exports competitiveness.

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