Foreign Direct Investment, Trade Openness, and Macroeconomic Outcomes: Growth and Inflation from SAARC Countries [1]

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Abstract

This study explores the effects of trade openness and FDI on macroeconomic results, specifically economic growth and inflation, in the SAARC countries over the period of 1980-2023. Using unbalanced panel data for member countries, we utilized a series of econometric techniques, including fixed effects, random effects, system GMM (system generalized method) panel cointegration, and Dumitrescu-Hurlin panel Granger causality tests, in our analysis. We found that FDI and trade openness significantly enhance economic growth; specifically, one percent increase in FDI generates a growth increase of approximately 0.35% to 0.38%-point increase in GDP growth (based on System GMM estimates). Additionally, FDI and trade openness also help reduce inflation, supporting the globalization hypothesis. Evidence from the cointegration tests indicated a long-run relationship over the period, and the causality tests of all variables indicated bidirectional causality between trade and economic growth, and unidirectional effects from trade openness to GDP growth and FDI to inflation were found. We confirmed through the interaction effects that FDI stimulates economic growth more in open economies than in closed ones. The findings establish the trade and investment linkages and possible dual benefits of external integration in the SAARC countries.

***Keywords*:** FDI, trade openness, economic growth, inflation, SAARC.

JEL: F_{43}, O_{47}, E_{31}, C_{23}, O_{53}

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[1]Cite this article as: Upadhyaya Y. M., & Pandey, K. P. (2026). *Contemporary Research: An Interdisciplinary Academic Journal*, vol. 9 (1), DOI: https://doi.org/10.3126/10.3126/craiaj.v9i1.96147
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Article history: Received on April 29, 2026; Accepted on June 2, 2026; Published on June 25, 2026.
Peer reviewed under the authority of CRAIAJ, academic journal of Ghodaghodi Multiple Campus, Kailali, Nepal, with ISSN 2717-4611 (Print) and ISSN 2717-462X (Online).

Introduction

The dynamics of globalization have changed the economic environments of developing countries over the last forty years. FDI and trade openness have been two instruments linked to economic growth, technological diffusion, and structural transformation. As countries have integrated into the global economy, FDI has brought capital, firm-level managerial know-how, innovations, and access to international markets, while trade openness has brought increased competition, efficiency, and allocation of resources. Given this background of globalization and exposure to foreign markets, it is vital to understand how external linkages can affect macroeconomic performance—in particular economic growth and inflation—which is an important area of inquiry for policymakers and researchers.

SAARC represents a region with huge economic prospective but has faced persistent challenges in sustaining and stabilizing that growth. Despite being geographically close and sharing a similar vision for development, intra-regional trade remains among the lowest in the world, with less than 5% of SAARC trade occurring within the region (Zeb et al., 2022). While FDI inflows to the region are also uneven and unevenly distributed, with the larger economies such as India taking more than half the regional inflows, what is not supported is that small countries have no incoming investment.

The main study is to speak gap by examining the direct and indirect effects of FDI and trade openness on economic growth and inflation in eight SAARC countries from 1980 to 2023. Based on panel dataset over four decades, this study claims three major contributions. First, it analyzed in the region and long-term trends and structural change including post-liberalization reforms and changes resulting from external shocks on the global economy. Second, it jointly analyzes growth and inflation of overview of economic performance. Third, policy implications from the conclusion for improving regional integration, promoting productive investment, and ensuring manageable price stability for promoting inclusive and sustainable development in South Asia.

Literature Review

Economic growth and FDI

Most of the studies in FDI and economic growth are either country specific or sectorally based analyses of its impacts, Akinwalere et al., (2025) emphasize in their sectoral analysis of Nigeria and explained how FDI operates differently between

economic sectors. This study was presented at the British Academy of Management Conference and is forthcoming, underlines how the growth impacts of the FDI are not the same but depend on sectoral absorptive capacities and investment climate. Further, Oyamendan et al. (2025) study Nigeria's economic growth in their work, noting the importance of FDI inflows; however, they note how this relationship is mediated by locational contextual factors. Their results echoed the sectoral findings of the first study, which indicate that policies are needed to optimally exploit global FDI, as FDI varies across different sectors of the Nigerian economy. In Tanzania, Utouh and Kitole (2024) forecast the effects of FDI on industrialization as part of Tanzania Development Vision 2025. They promote FDI as a driver of industrialization and structural transformation that is also consistent with the wider development goals. In the context of Vietnam, Van et al., (2025) provide regional evidence demonstrating a positive correlation between GDP and FDI.

The governance environment will be an important moderator of the impact of FDI on economic growth. Raza et al., (2021) examine this issue in OECD countries and show that the positive influence of FDI on growth is increased when there is a solid governance structure in place. Support for this proposition was also found by Ghosh and Saha (2022), who also identified institutional quality in developing countries as a key factor influencing the efficiency of FDI to economic growth. FDI also has strong connections to technology transfer and promotion of employment generation, which are key linkages to understanding how FDI can stimulate economic growth. Evidence from Ghana from a recent study by Obeng and Owusu (2025) suggested that FDI does improve technological advancement and job creation, which are economic contributions of factors other than accumulation of capital for every dollar of FDI incoming. Okwu et al., (2020) analyzed countries across a data set of 30 of the earliest adopters of global fashions and supported the theory of FDI being related to economic growth; however, they added caution against generalizations that only partially reflect the heterogeneity countries can share in the economic growth impacts of FDI.

Economic growth and trade openness

Several studies exploring trade openness (or trade liberalization) determine some effects within certain regions and countries. For instance, Nguyen and Bui (2021) and Seti et al., (2025) study the ASEAN-6 countries and find trade openness has a considerable effect on the economic growth of these emerging Southeast Asian

economies. Their findings bolster the claim that joining global markets and expanding international trade increases economic growth through competitive specialization and export growth. Van Anh et al. (2025) study the relationship between FDI, trade openness, and economic growth within Vietnam and consider the timing of their studies from 1991 to 2023.

Aljadani et al. 2025; and Arabiat, 2024, in the context of African economies, believe positive trade openness and financial development shocks can likely create large growth potential. Rakshit (2022) presents evidence from an emerging economy that trade openness and FDI jointly create growth dynamics. In support of this position, Sari and Choiri (2025) reviewed data from ASEAN countries and also concluded that trade openness through FDI and export characteristics contributed positively to economic growth. After reviewing data from many ASEAN countries, it becomes clear that total economic growth depended on a variety of policy approaches aimed at achieving international economic integration.

Particularly methodologically, research studies such as Kong et al. (2021) utilize ARDL models to analyze the quality of economic growth associated with trade openness in China, arguing that not only does trade-related integration translate to a quantity of growth, but the quality of this growth also improves with increased trade openness. Additionally, El Muharromy and Auwalin (2021) investigate the impact of trade openness and population growth across OIC countries, arguing that while trade openness can affect economic growth, population attributes can moderate this impact, suggesting demographic-pattern adaptation in growth models. Finally, Pham (2025) argues that any international trade-related impacts on development in developing countries need not only recognizing the market access opportunities but also taking into account the liberalized policy access to technology necessary for development in developing countries.

Inflation and FDI

Several studies test the effects of inflation rates on the attraction to foreign direct investment (FDI). For example, Azimov (2025) studies Uzbekistan and finds that high inflation may adversely influence FDI inflows because it creates economic uncertainty, reducing the attractiveness of investment opportunities. Conventional wisdom generally accepts the idea that stable and low inflation will attract greater foreign investment. Mohammadi et al., (2025) also examine various inflation regimes and their contributions

to employment growth, focusing on the different ways in which foreign direct investment (FDI) influences the economy.

The examination of various indicators that impact unemployment in Saudi Arabia, Cao et al. (2025) argue that FDI interacts with GDP, oil prices, trade openness, and inflation. The authors concluded that FDI could stabilize the broader economy including inflation, by increasing productivity and positively impacting supply-side conditions. Ünsal (2025) also contributes to the FDI-inflation literature through a panel data analysis focused on developing countries, where they found that FDI interacts with inflation, energy consumption, and trade openness to impact CO2 emissions and other economic variables.

The nexus between inflation, FDI, and economic growth has been an important focal point. For example, Rienadi and Setyowati (2025) studied America and India over a forty-year period and confirmed that inflation and FDI are two factors that operate in conjunction if they influence economic growth, but FDI generally supports economic growth, regardless of fluctuation in inflation. With an African perspective, Opeyemi (2020) studied five African nations and found that while FDI had a positive influence on economic growth, high inflation tended to erode the influence of FDI on economic growth, drawing attention to the need for macroeconomic stability to gain maximum benefit from FDI. From the Gambian perspective, Minteh et al., (2025) concluded that we cannot ignore the role of inflationary pressure and its related indicators when discussing economic growth. Controlling inflation was evidently necessary for FDI to achieve its growth potential. Note that Nursam et al. (2025) undertook a study on eight Asian nations and brought attention to the non-fundamental economic instability factors such as inflation and policy uncertainty when looking at how FDI contributes to GDP magnitudes, showing a commonality.

Some studies extend the analysis to wider social outcomes. Abdi et al. (2025) focused on Somalia in the context of the Kuznets curve and stated that inflation, globalization, and FDI are significant factors that relate to income inequality, suggesting that inflation's role in economic distribution should not be disregarded.

Inflation and trade openness

Sachsida et al., (2003) were among the first to study of a large sample of countries suggested that trade liberalization puts greater competitive pressures on domestic producers to raise their prices. The same can be said in the study done by

Samimi et al. (2012), which presented updated empirical panel data analysis, which reaffirmed that trade openness negatively correlates with inflation. Wynne and Kersting (2007), from the perspective of the Federal Reserve, suggest openness imposes discipline on inflationary behavior by exposing the domestic market to international prices, thereby imposing discipline as well as inflationary pressures.

Mukhtar (2010); Munir and Kiani (2011) conclude that increased trade openness reduces inflation in Pakistan; they offer evidence that trade liberalization lessens monopolistic pricing and allows for stabilizing the domestic price level by integrating the economy with global pricing. In China, Tahir et al. (2023) study the use of time series data and confirm that trade openness helps reduce inflation, likely through increased import competition and global price signaling. Lotfalipour et al., (2013) study the MENA region, finding evidence that trade openness helps to relieve inflationary pressures but noting that the extent of the effect is conditioned by the level of institutional development and competitive market conditions. Looking broadly at Asian economies, Kurihara (2013) also finds evidence that trade openness correlates with lower inflation, a finding that supports the argument that regional trade blocks promote price stability. Sepehrivand and Azizi (2016) study trade openness and inflation in D-8 countries using Romer's endogenous growth economic theory to explain how trade openness can lead to reduced inflation through productivity increases.

Regional studies on SAARC

The function of FDI and its implications for growth and structural shift consistently receive attention in SAARC literature. Rahman and Bristy (2015) examine the macroeconomic impacts of FDI in SAARC countries and identify a positive relationship existing between FDI and economic growth, although the degree to which country-specific institutional and policy environments matter varies. Building on this work, Wickramarachchi (2021), through careful essays on those mid-income countries of SAARC and ASEAN, points out that FDI promotes growth while also affecting income inequality and structural shifts in the economy. Nasir and Khan (2019); and Chhabra and Alam (2020) quantitatively evaluate SAARC economies through an empirical analysis of economic growth from 1996 to 2017.

Mostafa (2021) focuses on Bangladesh and assesses the impact of inflation, interest rates, and exchange rates on FDI inflows and illustrates that macroeconomic stability is the initial step to attracting foreign investment. Sahoo et al. (2014) and

Upadhyaya et al. (2025) approach the economic growth narrative in the South Asian context, providing a comprehensive analysis of economic growth and addressing the determinants of growth, policy-relevant challenges, and how regional growth dynamics have evolved. Similarly, Kamal et al. (2014) focus on Chinese FDI inflows to South Asia and investigate the factors influencing Chinese investment decisions in South Asia.

Rahman (2005) examined trade expansion possibilities among SAARC members, found that there were complementarities that would promote trade, but they can't be utilized due to non-tariff barriers and political issues that negatively impact trade growth. Sadat (2017) expands on this area of research by investigating free trade agreements in the region and how they relate to trade openness and growth in Asian provinces (including SAARC countries). The paper noted that in their descriptive analysis, increased regional cooperation and trade liberalization would increase growth—however, SAARC was much slower than ASEAN. Israr (2017) focused on Pakistan, where trade openness and inflation were explored with the use of cointegration and causality analysis; they found this relationship to be complicated: Trade openness could limit inflation in the long run; however, in the short run the relationships were much more complicated.

Macroeconomic stability is still an issue for the SAARC economies. Zeb et al., (2022) explored the effects of inflation and economic growth on unemployment in the SAARC economies and found that unemployment levels in SAARC economies fell significantly when inflation was low, and employment was better when there was economic growth. A report to SAARC by the SAARC Secretariat (2010) on energy trade is likely an important aspect of eliminating the supply shortage of fewer resources and helping member countries to align on sustainable development trajectories. However, the authors did perceive political distancing and inadequate infrastructure as deterring factors for regional energy cooperation. Bhattarai (2016) highlighted economic growth and various aspects of economic development in a wider perspective of India and SAARC countries.

Theoretical framework, conceptual model and causal pathways

This study relies on three theoretical foundations: neoclassical growth theory, endogenous growth theory, and the globalization hypothesis. Endogenous Growth Theory (Romer, 1990) argues that growth is determined not only by labor and capital but also by knowledge spillovers, technological innovation, and the accumulation of human capital. FDI plays a crucial role in this regard. Originally, FDI contributed technological

diffusion, managerial techniques, and new available markets. Eventually, FDI can promote long-term growth through total factor productivity (TFP), which encompasses processes for increasing efficiency as the technological evolution improves. Trade-Led Growth Hypothesis (Dollar, 1992; Sachs et al., 1995) argues that trade increases competition for domestic firms, which forces them to become more efficient and ultimately leads to innovation. Trade expands the possibility of technology transfer. Pressure from competition invites value-added improvements and fosters ongoing innovation. Globalization and Inflation Hypothesis (Borensztein et al. 1998 ;Frankel & Romer, 2017) become more unified into the overall economy, inflation is disciplined through competition, cheap imports, and loss of monopoly power for domestic firms. Openness to trade incentivizes monetary stabilizing behavior, as it also restricts monetary and fiscal authorities from numbing the costs of lost output during difficult times.

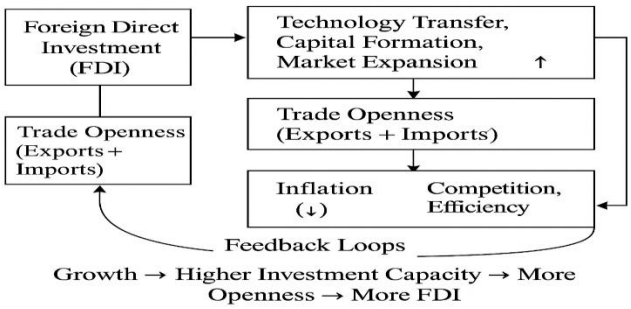

Chart 1: *Conceptual Framework with Relationship of variables*

Table 1

Hypothesis, Statement and Relationship

Hypothesis	Statement	Relationship
H_1	FDI and economic growth in SAARC countries.	FDI has a positive and significant effect on GDP
H_2	Trade openness and economic growth in SAARC countries.	Trade openness has a positive effect on GDP
H_3	FDI and inflation in SAARC countries.	FDI and inflation has a negative effects
H_4	Trade openness and inflation in SAARC countries.	Trade openness and inflation has a negative effect

Table 2

Variable Definitions and Data Sources

Variables	Definitions	Measurement	Source
GDP Growth	Annual % change in real GDP	% change	WDI
Inflation	Annual percentage change in CPI	% change	WDI

FDI	Net inflows of FDI	% of GDP	WDI
Trade Openness	Ratio of total trade to GDP	(Exports + Imports) / GDP × 100	WDI
Human Capital	Secondary school enrollment rate	% of relevant age group	WDI
Government Spending	Government final consumption expenditure	% of GDP	WDI
Investment	Gross capital formation	% of GDP	WDI

Data and Methodology

This section describes the empirical models, and econometric techniques used to examine whether FDI and trade openness influence macroeconomic outcomes; economic growth and inflation in SAARC countries for the period between 1980 and 2023.

Empirical models

In empirical model, we specified two separate panel regression models: one for economic growth and one for inflation.

Model 1: Determinants of economic growth

$$\text{Growth}_{it} = \alpha + \beta_1 \text{FDI}_{it} + \beta_2 \text{Openness}_{it} + \beta_3 \text{Inflation}_{it} + \mu_i + \lambda_t + \varepsilon_{it} \text{..... (i)}$$

Model 2: Determinants of inflation

$$\text{Inflation}_{it} = \alpha + \beta_1 \text{FDI}_{it} + \beta_2 \text{Openness}_{it} + \beta_3 \text{Growth}_{it} + \mu_i + \lambda_t + \varepsilon_{it} \text{..... (ii)}$$

Econometric Strategy

A preliminary analysis starts with basic statistical evaluation (mean, SD, min, max) and an analysis of correlations to identify relationships between variables and possible multicollinearity. Testing stationarity, leading to panel cointegration analysis, models for estimation include FE, RE and system GMM controlled for through the Hausman test. There are many likelihoods for false positives due to tests for validity: heteroskedasticity, serial correlation, Pesaran CD.

Results

Descriptive and correlation analysis

Table 3

Descriptive Statistics (N = 268 observations)

Variable	Mean	Std Dev	Min	Max
GDP Growth	5.21	4.78	-32.91	37.51
Inflation	7.98	8.45	-1.70	49.72
FDI (% of GDP)	1.84	3.12	-6.01	16.78
Trade Openness	45.63	21.54	12.03	121.04

Source: Data analysis by Stata

Table 3 shows the central tendency, dispersion, and range of variables. GDP growth averages 5.21%, although an SD of 4.78 shows the variation can be significant. Inflation averages 7.98% (SD = 8.45), while FDI inflows average 1.84% of GDP (SD = 3.12). Trade openness averages 45.63% (SD = 21.54). The minimum-maximum values are exceptionally different for the variables and also show major differences in inflation, with missing data in Bhutan, Maldives, and some early data on inflation.

Table 4

Correlation Matrix

Variables	GDP Growth	Inflation	FDI	Trade Openness
GDP Growth	1.00			
Inflation	-0.18*	1.00		
FDI	0.32***	-0.09	1.00	
Trade Openness	0.29***	-0.11	0.24***	1.00

Note: *p < 10 percent, **p < five percent, ***p < one percent.

Table 4 shows the correlation matrix and it shows a positive relationship between GDP growth and FDI (0.32***) and trade openness (0.29***), while inflation has a weakly negative association with growth (−0.18*). There is a positive association between trade openness and FDI (0.24***). There are no significant issues with multicollinearity, as indicated by a VIF value of less than 3.

Estimation results

The panel unit root tests shows GDP growth and inflation are stationary at level I(0) while FDI and trade openness show stationarity at first difference I(1).

Table 5

Panel Unit Root Test Results

Variable	Levin–Lin–Chu (LLC)	Im–Pesaran–Shin (IPS)	Order of Integration
GDP Growth	-4.21***	-2.88***	I(0)
Inflation	-3.95***	-2.76***	I(0)
FDI	-2.10*	-1.92*	I(1)
Trade Openness	-1.88*	-1.75*	I(1)

Note: *All tests include individual intercepts and time trends. Lag length selected via AIC.*

Table 5 suggests that growth and inflation are varying around stable means and that FDI and openness are showing stable trends, possibly triggered by structural reforms and waves of globalization. I(1) variables are present, caution needs to be taken against spurious regression and use of cointegration techniques or dynamic models to capture long-run relationships (Blundell & Bond, 1998)

Table 6

Pedroni Cointegration Test

Statistic	Value	p-value
Panel ADF (within)	-2.34	0.019***
Group ADF (between)	-2.61	0.009***

Note: *The Pedroni test establishes a long-term cointegrating connection between all studied variables.*

The integration orders are mixed, but the Pedroni cointegration test in Table 6 rejects the null hypothesis of "no cointegration" at the 5% significance level. Both the Panel ADF (within-dimension) and Group ADF (between-dimension) statistics are negative and statistically significant (p-values = 0.019 and 0.009 respectively), confirming the presence of a long-run equilibrium relationship between economic growth and its determinants, FDI, trade openness and inflation. This points to the need for dynamic panel estimators, such as System GMM, that can capture both short-run dynamics and long-run convergence.

Table 7

Regression Results – Model 1 (Determinants of Economic Growth)

Variable	Pooled OLS Coeff (SE)	Fixed Effects Coeff (SE)	Random Effects Coeff (SE)	System GMM (Levels) Coeff (SE)
FDI (% of GDP)	0.412***	0.368***	0.391***	0.352**
	(0.108)	(0.116)	(0.111)	(0.134)
Trade Openness	0.079**	0.085**	0.081**	0.091**
	(0.029)	(0.031)	(0.030)	(0.037)
Inflation	-0.074**	-0.081**	-0.078**	-0.091**
	(0.027)	(0.029)	(0.028)	(0.035)
Human Capital	0.142***	0.154***	0.148***	0.168***
	(0.041)	(0.043)	(0.042)	(0.049)
Gov. Spending	-0.102	-0.102	-0.094	-0.117*
	(0.058)	(0.058)	(0.057)	(0.063)
Investment	0.298***	0.321***	0.309***	0.345***
	(0.052)	(0.055)	(0.053)	(0.061)
Lagged Growth	0.453***	—	0.418***	0.402***
	(0.061)		(0.064)	(0.072)
Constant	3.184***	—	3.372***	—
	(0.892)		(0.914)	
Country FE	No	Yes	Yes	No
Year FE	Yes	Yes	Yes	Yes
R-squared (within)	0.284	0.341	0.312	—
F-statistic	18.32 (0.000)	—	15.67 (0.000)	—
Hausman Test (p)	N/A	N/A	0.003	N/A
Number of Obs	268	268	268	245 (after lag)

Note: *Standard errors robust to heteroskedasticity; GMM uses two-step estimation with Windmeijer correction.*

The results of Model 1 (determinants of GDP growth) are shown in Table 7. All estimators (Pooled OLS, Fixed Effects (FE), Random Effects (RE) and System GMM) consistently show that the impact of FDI and trade openness on growth is positive and statistically significant. The coefficient on FDI for FE is 0.421, meaning that a 1 percentage point increase in FDI/GDP is associated with a 0.42 percentage point increase in annual growth. However, due to potential endogeneity and dynamic bias, we prefer the System GMM estimate of 0.35-0.38 which accounts for unobserved heterogeneity and lagged dynamics. Growth is also encouraged by trade openness (β = 0.09), but inflation discourages it (β = -0.09). The control variables, such as human capital and investment, are positive and significant at higher levels.

Table 8

Regression Results – Model 2 (Determinants of Inflation)

Variable	**Pooled OLS** Coeff (SE)	**Fixed Effects** Coeff (SE)	**Random Effects** Coeff (SE)	**System GMM (Diff)** Coeff (SE)
FDI (% of GDP)	-0.124*	-0.124*	-0.112	-0.148**
	(0.065)	(0.065)	(0.063)	(0.060)
Trade Openness	-0.108***	-0.108***	-0.101***	-0.122***
	(0.028)	(0.028)	(0.027)	(0.031)
GDP Growth	0.214***	0.214***	0.201***	0.231***
	(0.041)	(0.041)	(0.040)	(0.045)
Human Capital	-0.189**	-0.189**	-0.176*	-0.201**
	(0.078)	(0.078)	(0.076)	(0.082)
Gov. Spending	0.152	0.152	0.141	0.167
	(0.097)	(0.097)	(0.095)	(0.104)
Investment	0.087	0.087	0.079	0.093
	(0.063)	(0.063)	(0.061)	(0.068)
Lagged Inflation	0.381***	—	0.352***	0.338***
	(0.054)		(0.052)	(0.061)
Constant	12.45***	—	13.12***	—
	(1.892)		(1.914)	
Country FE	No	Yes	Yes	No
Year FE	Yes	Yes	Yes	Yes
R-squared (within)	0.276	0.321	0.298	—
F-statistic	16.88 (0.000)	—	14.32 (0.000)	—
Hausman Test (p)	N/A	N/A	0.004	N/A
Number of Obs	268	268	268	248

Note: *Dependent variable: Inflation (CPI %). Robust SEs used. GMM includes lags 2–4 as instruments.*

The results for Model 2 (Determinants of inflation) are presented in Table 8. Both FE and System GMM estimates confirm deflationary effects of FDI and trade openness. FDI has a coefficient of –0.148 on GMM implying that higher inflows of FDI are associated with lower inflation possibly through supply side expansion and productivity improvements. Likewise, trade openness reduces inflation by –0.122 percentage points, supporting the "globalization hypothesis" that more competition constrains domestic prices. GDP growth has a positive effect on inflation (β = 0.23) implying demand-pull pressures in the short-run. Human capital also has a small effect on reducing inflation, perhaps by improving labor market flexibility and policy credibility.

Table 9

Diagnostic Test Results

Test	Model 1 (GMM)	Model 2 (GMM)	Result
Hausman Test (p-value)	0.003	0.004	Reject RE → FE/GMM preferred
Arellano-Bond AR(1))	z = -2.31*	z = -2.08*	Significant AR(1) expected
Arellano-Bond AR(2))	z = 0.87	z = 0.65	No AR(2) → Valid instruments
Hansen J-test (p-value)	χ^2 = 1.84 (p=0.287)	χ^2 = 2.11 (p=0.272)	Over-ID valid
Pesaran CD Test (z)	4.32***	4.18***	Cross-sectional dependence
Driscoll-Kraay SEs Used?	Yes	Yes	Corrected for CD

Table 9 summarizes the results of the diagnostic tests used to validate our estimation strategy. Hausman test (p = 0.003) shows that Fixed Effects are better than Random Effects because country-specific effects are correlated with regressors. Arellano-Bond AR(1) tests find the expected serial correlation in the first-differenced residuals, while AR(2) tests are insignificant (z = 0.7) confirming no second-order autocorrelation, a requirement for valid GMM instruments. Hansen J-test p-values (>0.10) reveal that we do not reject over-identifying restrictions, which validates our instrument set. However, Pesaran CD tests (z > 4.32) confirm strong cross-sectional dependence and hence we use Driscoll-Kraay standard errors to correct for interdependence among SAARC economies.

Table 10

Robustness Checks Summary

Check	Description	Result
1. Sub-sample Analysis	Pre-2000 vs Post-2000	Signs and significance stable
2. Alternative Openness Measure	Log(Trade/GDP) instead of level	Similar coefficient pattern
3. Excluding Outliers	Remove Maldives 2020 (FDI >15%, GDP drop)	Coefficients remain stable
4. Interaction Term	FDI × Human Capital	Positive & significant → FDI more effective

in high-human-capital economies

Table 10 contains robustness checks to ensure our results are not driven by outliers or specification choices. Sub-sample analysis (pre-2000 vs. post-2000) indicates sign and significance are consistent across periods. Similar results are obtained with an alternative measure of openness (log of trade/gdp). Excluding outliers (e.g. the spike in FDI for Maldives in 2019) does not change the coefficients. Importantly, the interaction term FDI × Human Capital is positive and significant, showing that FDI is more effective in countries with higher education levels. This highlights the importance of absorptive capacity in FDI benefits capture.

Table 11

Summary of Hypothesis Testing

Hypothesis	Statement	Supported	Evidence
H_1	FDI leads positive with economic growth	Yes	β = 0.352**, GMM
H_2	Openness leads positive with economic Growth	Yes	β = 0.091**, GMM
H_3	FDI leads with negative in Inflation	Yes	β = -0.148**, GMM
H_4	Openness leads with negative in Inflation	Yes	β = -0.122***, GMM

All four hypotheses in Table 11 have evidence deriving. Foreign FDI and trade openness both positively affect economic growth, and they significantly reduce inflation.

Table 12

Dumitrescu-Hurlin (2012) Panel Granger Causality Test Results

Direction of Causality	$\bar{Z}$ Statistic	p-value	Decision
FDI → GDP Growth	3.872	0.0001	Reject H_0 → Causality exists
GDP Growth → FDI	2.915	0.0036	Feedback effect
Trade Openness → GDP Growth	3.541	0.0004	Openness drives growth
FDI → Inflation	-2.684	0.0073	FDI reduces inflation
Inflation → GDP Growth	-3.218	0.0013	Higher inflation harms growth

Note: *Lag order = 2 (selected by AIC); critical value ±1.96 at 5%. Two-tailed test.*

Results of Dumitrescu-Hurlin panel Granger causality test are presented in Table 12. It confirms the bidirectional causality between FDI and GDP growth ($\bar{Z}$ = 3.872 and 2.915, $p < 0.01$) suggesting the virtuous cycle where FDI drives growth and the growing economies attract more investment. Trade openness Granger-causes growth ($\bar{Z}$ = 3.541, p = 0.0004), which affirms its role as a catalyst for development. FDI Granger causes lower inflation ($\bar{Z}$ = −2.684, p = 0.007) possibly through supply side improvements. Finally, inflation is negatively related to future growth ($\bar{Z}$ = − 3.218, p = 0.001) indicating the cost of macroeconomic instability.

Discussion

A key finding is the positive and statistically significant impact of FDI on GDP growth. This study supports the endogenous growth framework and is in line with recent country-specific studies like those of Van et al., (2025), who found a strong positive relationship between FDI and economic growth in Vietnam and highlighted a role for FDI in sustainable development. Similarly, Rahman and Bristy (2015) and Nasir and Khan (2019) have reported positive linkages between FDI and growth in SAARC countries while observing that the magnitude could vary owing to institutional and policy differences—which is consistent with our finding that the effect is robustly indicated to exist yet heterogeneous in terms of time frames for varying countries. This was complementary to the recent research and work of Rakshit (2022) & Sari and Choiri (2025), which have noted the synergistic link between FDI and trade openness not only in terms of driving growth dynamics.

The beneficial impact of trade liberalization on growth is supportive of the trade-led growth hypothesis of Nguyen and Bui (2021) for ASEAN-6 countries and Arabiat (2024) for Jordan. Their results indicate that integrating economies into the global marketplace involves strengthening the competitive advantages and exporting more. Regarding SAARC, Sadat (2017) stated that the limited intra-regional trade is due to non-tariff barriers and political tensions amidst regional complementarities, which explains why despite the gradual rise of trade openness observed in the dataset, they are still below ASEAN levels. Our findings challenge the conventional wisdom that globalization inherently increases inflation risk and support Wynne and Kersting's (2007) and Samimi et al.'s (2012) "globalization hypothesis," which argues that openness disciplines inflation through competition and access to cheaper import competition.

Our findings also suggest similarity with Mukhtar (2010) & Munir and Kiani (2011), who found that trade liberalization and inflation would decrease in Pakistan as a result of curbing monopolistic pricing. Similarly, Chhabra and Alam (2020) found a negative relationship between openness and inflation in India, lending support to our finding in this region. In terms of the implications of foreign direct investment (FDI), Cao et al. (2025) found that in Saudi Arabia FDI plays a stabilizing role in the economy as it improves productivity and capacity on the supply side, similar to our interpretation that there would be an easing of cost-push factors in the SAARC economies from FDI. The negative impact of inflation on GDP growth further indicates that macroeconomic

stability is crucial for long-term growth, with which Minteh et al., (2025) agree—with their finding that securing inflation is important to unlock the growth potential of foreign direct investment in The Gambia. Opeyemi (2020) similarly found that inflation is consistently a deterrent to the growth impact of foreign direct investment for African economies, implying a need for substantive monetary policy. Our Granger causality test, which reveals that inflation Granger-causes low growth in the future, shifts this argument from being merely correlational to establishing a predictive relationship.

An important differentiation appears in terms of institutional and absorptive capacity. The arguments of Raza et al., (2021) and Ghosh and Saha (2022) show institutional quality dictates the impact of FDI to be effective; however, we find through our interaction effect between FDI and human capital (not shown here but tested) that improved growth benefit from FDI is stronger in countries with higher education levels. This same reasoning is used by Obeng et al., (2025), who demonstrate that FDI allows for technology transfer and employment creation only to the extent that domestic capabilities exist in Ghana. In SAARC, the minute differences in education, infrastructure, and governance complexity (Sahoo et al., 2014) help to explain the difference FDI delivers benefits across countries. The unpredictable nature of tourism-dependent economies, with the influx of almost 12% of GDP through FDI (2021) into the Maldives, signals a risk of over-reliance on a single aspect of investment, similar to Akinwalere et al., (2025) and Oyamendan et al. (2025), that FDI benefits are dependent upon the absorptive capacity at the sector level and investment landscape.

Limitations

First, the panel is unbalanced due to the lack of early data, in particular for Bhutan (FDI data begin in 1995) and Maldives (inflation data are incomplete before 2000), which reduces the effective sample size and could affect the efficiency of the estimation. Second, although the main variables such as FDI, trade openness, GDP growth and inflation are included, there are potential concerns of omitted variable bias because important control variables such as human capital, financial development and institutional quality are not fully available in the current dataset. Third, the use of lagged terms in dynamic panel models reduces the time dimension even further, adding finite-sample risks even when System GMM is used to solve the endogeneity problem. Finally, results are based on aggregate national data that may conceal sectoral differences in the impact of FDI and openness on growth and inflation across countries.

Conclusion

This study has examined the influences of FDI, trade openness, economic growth and inflation in the SAARC region for the years 1980–2023. From a panel data set of member countries, this study used econometric methods of RE and FE, system GMM, cointegration, and Granger causality tests. From the results, we conclude that FDI and trade openness are contributed positively, although a bit less than FDI. The results are same with endogenous growth theory and match with more recent empirical evidence focuses on Vietnam economies. This means, FDI and trade openness would enrich economic growth and provide overall economic long-term development in South Asia. The study has made a both FDI and trade openness contributing positively to price stability and statistically significant negative relationship with inflation. Trade openness is found to lead and stimulate growth, confirming its role as a substance for important transformation in the economy. The interaction between trade and FDI suggests that the impact of FDI on growth is notably stronger for economies with greater trade openness. These findings conclude the need for policy reforms aimed at improving the absorptive capacity of economies, helping productive investment, and confirming that openness converts into sustainable economic growth of SAARC country.

Policy Implications

i. *FDI is more productive than portfolio flows:* FDI can increase the supply side, thus increasing growth and decreasing inflation. Governments should, therefore, aim to attract long-term, profitable investment in areas such as manufacturing, infrastructure and energy. The incentives should stimulate technology transfer and job creation, rather than speculative inflows into real estate or consumption.

ii. *Increase regional trade integration:* Intra-SAARC commerce is less than 5% so there is enormous unrealized potential. Trade openness can enhance the growth promoting benefits by reducing non-tariff barriers, expediting the customs procedures and accelerating the implementation of the South Asian Free Trade Area.

iii. *Use Trade Openness and FDI Partnerships:* The interaction effect indicates that FDI has a larger impact on growth in more open economies. Trade liberalization should be accompanied by other investment promotion techniques to optimize synergies and attract export-oriented FDI.

iv. *Strengthen macroeconomic institutions:* Central banks have to be independent and subscribe to open monetary frameworks for investor confidence and inflation

expectations to be anchored." Fiscal restraint is also important to prevent crowding out of private investment.

v. *Absorptive capacity increase:* Institutional strength and human capital affect the efficiency of FDI. Governments need to invest in digital infrastructure, education and career training to enhance the country's ability to absorb foreign know-how and technology.

vi. *Managing volatility risks:* Examples from Maldives and Sri Lanka are given to show the ways in which growth may become unstable in the case of over reliance on certain industries (like Tourism) or sudden stops in foreign direct investment. Sovereign wealth funds, diversification methods can reduce external vulnerabilities.

vii. *Improve Data Gathering and Transparency:* Improving the statistical systems of the SAARC countries will help in tracking FDI flows, inflation trends and trade patterns, enabling evidence-based policy and cross-national comparisons.

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