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Nexus Between Export Dynamics, Inflation, Exchange Rate Volatility, and Economic Stability: Evidence from SAARC Countries

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Abstract

Purpose: This study investigates the integrated role of export dynamics, inflation, and exchange rate volatility on long-run economic growth in SAARC countries.

Design/methodology/approach: The study employed annual panel data spanning 1990 to 2024 for six SAARC economies. FMOLS and DOLS estimators were utilized to obtain long-run coefficient estimates, and a fixed-effects model was employed to capture country-specific heterogeneity.

Findings: Exports have a significant and positive impact on economic growth, while exchange rate fluctuation shows a strong positive long-run effect. Inflation does not show any statistically significant relationship with GDP. Cointegration results indicate that external-sector variables jointly determine long-run growth behavior.

Conclusion: Export growth and exchange rate movements strongly influence economic growth in SAARC countries. This suggests that the region's long-term economic performance depends largely on the strength and stability of its external sector, whereas inflation does not show a meaningful long-run effect.

Implications: The study implies that fiscal space for social security depends on export competitiveness, trade diversification, and exchange rate stability, while long-term growth is driven mainly by structural reforms, productivity, and regional cooperation.

Originality/value: It contributes original and updated evidence on how export performance and exchange rate dynamics influence long-run growth and support social security.

JEL Classification: E31, F14, F31, O47

Introduction

Economic growth in developing economies is shaped by the interaction of export capacity, macroeconomic stability, and external competitiveness. As countries become increasingly integrated into regional and global markets, exports, inflation dynamics, and exchange rate movements play a critical role in determining long-run economic performance. Classical economic theory argues that exports contribute significantly to productivity enhancement and sustained economic growth through efficiency gains and resource reallocation (Feder, 1983). Consistent with this view, empirical evidence suggests that the linkages between export performance and output growth are generally stronger in emerging economies than in developed economies because of their greater dependence on external markets and trade-led development strategies (Adelakun et al., 2025). Similarly, inflation dynamics have become increasingly important for growth sustainability in externally dependent economies (Yasa & Senturk, 2025), while exchange rate volatility has emerged as a key source of economic uncertainty affecting trade flows, investment decisions, and growth outcomes in open economies (Zhu, 2022).

In South Asia, exports remain highly dependent on external demand and therefore constitute an important driver of long-term economic development. Sustained export growth enables economies to benefit from industrial upgrading and productivity improvements (Auer et al., 2021). Trade openness has also been found to improve resource allocation efficiency and market performance,

particularly in developing economies (Hesse, 2008). Furthermore, participation in global value chains enhances resilience to external shocks and strengthens competitiveness in emerging markets (Ibrahim et al., 2021). Earlier regional evidence suggests that increasing trade integration has contributed positively to economic performance in South Asia (Raghutla, 2020). In addition, export diversification reduces vulnerability to fluctuations in global demand and commodity prices, thereby improving macroeconomic resilience and long-run growth prospects (Attah et al., 2025).

Alongside export performance, exchange rate volatility and inflation play equally important roles in shaping economic stability and growth trajectories. Exchange rate volatility can undermine export competitiveness, distort investment decisions, and increase uncertainty in international trade. Existing evidence indicates that exchange rate misalignment negatively affects exporter competitiveness in emerging economies, while exchange rate uncertainty influences trade balances and capital allocation decisions (Hooy & Baharumshah, 2015). Furthermore, fluctuations in exchange rates and global commodity prices have contributed to currency instability across Asian economies (Chen et al., 2024). Inflation is another key macroeconomic variable influencing growth performance (Parajuli & Neupane, 2025). Moderate inflation may support production and demand conditions (Akinsola, 2017), whereas price stability enhances investor confidence and encourages long-term investment decisions (Abaidoo & Agyapong, 2024). Studies further suggest that inflation dynamics in emerging economies are shaped by both structural and policy-related factors (Stojanovikj & Petrevski, 2024), while commodity-driven inflationary pressures continue to pose significant challenges for developing countries (Ali et al., 2023).

A growing body of evidence suggests that exports, inflation, and exchange rate volatility collectively influence economic stability and long-run growth outcomes (Pandey et al., 2024). Siswana (2021) demonstrates that the long-run interaction among these variables plays a significant role in shaping regional development in emerging Asian economies. Similarly, Ahmad et al. (2017) found that trade openness contributes to innovation, productivity, and competitiveness, while Sultanuzzaman (2019) highlights the structural importance of export performance in determining long-run macroeconomic outcomes. Collectively, these findings suggest that understanding the combined effects of exports, inflation, and exchange rate volatility is essential for evaluating economic stability, particularly in developing regions characterised by increasing openness and external dependence.

Despite the growing body of empirical literature on the determinants of economic growth, evidence from SAARC countries remains fragmented. Existing studies have largely focused on individual countries, bilateral relationships, or single macroeconomic variables rather than examining export dynamics, inflation, and exchange rate volatility within a unified long-run framework (Adelakun et al., 2025; Raghutla, 2020). This gap is particularly important given the structural vulnerabilities, increasing trade integration, and external dependence of SAARC economies in the post-liberalization era.

Accordingly, this study examines how export dynamics, inflation, and exchange rate volatility jointly influence long-run economic growth in SAARC countries. The study contributes to the literature by simultaneously examining these three critical macroeconomic variables using a balanced panel dataset and robust long-run estimation techniques. By employing Fixed Effects, Fully Modified Ordinary Least Squares (FMOLS), and Dynamic Ordinary Least Squares (DOLS) estimators for six SAARC economies over the period 1990–2024, the study provides updated and

region-specific evidence that remains largely absent from the existing SAARC macroeconomic literature (Yaşa & Şentürk, 2025). The findings are expected to contribute to policy discussions concerning external-sector competitiveness, macroeconomic stability, and sustainable economic growth in South Asia.

The remainder of this study is organized as follows. Section 2 presents the theoretical and empirical literature review. Section 3 outlines the data sources and econometric methodology. Section 4 reports the empirical findings. Section 5 discusses the results in light of existing theory and empirical evidence. Finally, Section 6 concludes with policy implications, limitations, and directions for future research.

Literature Review

The Export-Led Growth (ELG) theory posits that export expansion serves as a key driver of economic growth by enhancing productivity, promoting specialization, facilitating technology diffusion, and strengthening integration with global markets (Balassa, 1978). The theory suggests that economies can achieve sustained growth through increased export activity and participation in international trade networks. Empirical evidence further supports the positive contribution of exports to productivity improvement and long-run economic growth through learning effects, increased competition, and technological spillovers (Feder, 1983). Within this framework, exchange rate stability is also critical, as excessive exchange rate volatility can undermine export competitiveness. Thus, this discourages external demand, which lessens employment opportunities in the country and weakens growth prospects, which ultimately leads to poor social protection.

Furthermore, inflation is closely linked to the ELG mechanism, as moderate inflation can help maintain cost competitiveness and support export profitability, whereas high and volatile inflation increases production costs, erodes price stability, and weakens firms' ability to compete in international markets. Empirical evidence further suggests that diversified and competitive export structures contribute to strengthening long-run growth trajectories in emerging economies (Siswana, 2021). In addition, improvements in export efficiency and overall competitiveness are shown to play a significant role in sustaining economic performance across developing regions.

Despite the theoretical clarity of the ELG hypothesis, a critical review of the empirical literature reveals considerable inconsistency in findings across regions and methodologies. While studies from Sub-Saharan Africa (Kollie, 2020) and the Gulf Cooperation Council (GCC) region (Saeed & Hatem, 2017) confirm a positive long-run export-growth nexus. Similarly, evidence from transition economies such as Kosovo (Pukaj & Berisha, 2022) finds no cointegration, suggesting that the ELG hypothesis may not hold universally. A key methodological limitation of prior studies is the reliance on single-country time-series approaches, which limit generalizability and fail to capture the cross-country heterogeneity inherent in panel economies (Adelakun et al., 2025). Furthermore, most existing studies in the SAARC context have examined export, inflation, and exchange rate variables independently rather than within an integrated framework. This overlooks joint long-run dynamics critical for policy formulation (Zhu et al., 2022). This gap highlights the need for a unified panel-based investigation, such as the one undertaken in the present study, as export performance and microeconomic stability influence fiscal space and social protection programs.

Table 1

Summary of Key Studies

Authors (Year)	Country / Region	Methodology	Key Findings
Pukaj and Berisha (2022)	Kosovo	Quarterly VAR model with Granger causality (2010–2021)	No cointegration between exports and GDP, but short-run bi-directional causality exists between exports and real GDP.
Kollie (2020)	Ten ECOWAS countries	Panel data (2000–2017); panel unit root; panel ARDL; ECM	Panel ARDL results indicate that real exports significantly and positively affect real GDP in the long run; feedback from GDP to exports is weaker.
Bakari and Mabrouki (2017)	UAE	Time-series cointegration / VECM	Exports and imports are cointegrated with GDP; exports exert positive long-run effects on real GDP in both oil-rich and low-income economies.
Hoomani et al. (2021)	EU member states	Panel cointegration; threshold models	When inflation exceeds a threshold, its impact on GDP growth becomes significantly negative; below the threshold, the effect is weaker.
Tandan et al. (2022)	Nepal	Time-series ARDL bounds test (1981–2021)	FDI, RMT, and real GDP are positively linked in the long run, while high inflation erodes growth; variables are cointegrated.
Barguellil et al. (2018)	45 developing and emerging economies	Panel growth regressions with a GARCH-based exchange-rate volatility measure	Higher real exchange-rate volatility significantly reduces real GDP growth, especially in low-income and less financially developed countries.

A critical examination of Table 1 reveals considerable methodological heterogeneity and mixed empirical findings. Studies employing panel ARDL and error correction models (Kollie, 2020; Tandan et al., 2022) generally report robust long-run relationships between external-sector variables and GDP growth, whereas VAR-based single-country analyses (Pukaj & Berisha, 2022) tend to produce weaker or inconclusive evidence of cointegration. This divergence is likely driven by differences in country-specific structural conditions, sample p6eriods, and econometric specifications, which are often insufficiently addressed in prior research. Despite the growing body of literature, limited empirical evidence has simultaneously examined the effects of exports, inflation, and exchange rate volatility within a balanced panel framework using complementary long-run estimators such as FMOLS and DOLS, thereby highlighting a clear analytical gap that the present study seeks to address (Barguellil et al., 2018; Hoomani et al., 2021).

Exports and Economic Growth

The ELG hypothesis posits that expanding exports enhances production efficiency, generates foreign exchange, and stimulates investment, thereby promoting real economic growth (Zhu et al., 2022). Empirical studies show that export expansion improves competitiveness and access to global markets (Raghutla, 2020), while export diversification, particularly in oil-importing economies, supports long-run growth when complemented by stable trade policies (Saeed & Hatem, 2017). Additionally, export development contributes to industrial expansion and income generation (Attah et al., 2025).

However, this relationship is context-dependent. In economies with narrow or low value-added export structures, the impact of exports on growth may be weak or negative, which leads to weak inclusive social protection in the country. Heavy reliance on primary commodities increases vulnerability to global price shocks, which can suppress real GDP (Abaidoo & Agyapong, 2024). Moreover, where domestic productive capacity is limited, rapid export growth may create external imbalances rather than sustainable development.

Comparative evidence reveals a clear divide: while diversified and resource-rich economies tend to support the ELG hypothesis, structurally constrained and import-dependent economies exhibit conditional or insignificant effects (Abaidoo & Agyapong, 2024; Bakari & Mabrouki, 2017). Methodologically, many studies insufficiently address non-stationarity and structural breaks, potentially biasing long-run estimates. This concern is particularly relevant in the SAARC region, where countries such as Nepal, Bhutan, and Bangladesh rely on narrow export bases, making uniform export–growth relationships empirically uncertain without rigorous panel cointegration analysis (Attah et al., 2025).

H1: Exports have a positive long-run effect on economic growth in SAARC countries.

Inflation and Economic Growth

The relationship between inflation and economic growth has long been debated in the macroeconomic literature, with evidence suggesting that moderate inflation can stimulate production, investment, and aggregate demand (Akinsola & Odhiambo, 2017). In this context, price stability plays a crucial role in supporting long-run growth by reducing uncertainty and enhancing business confidence, particularly in developing economies (Abaidoo & Agyapong, 2024). Similarly, controlled inflation has been shown to facilitate economic expansion by improving market flexibility and lowering real borrowing costs (Stojanovikj & Petrevski, 2024). Evidence from resource-dependent economies further suggests that low and stable inflation contributes to sustained output growth by stabilising consumption patterns and reinforcing macroeconomic predictability (Chen et al., 2024).

However, when inflation is high or volatile, it can have significant adverse effects on economic performance by distorting savings behaviour, weakening investment incentives, and reducing real purchasing power (Ahmad et al., 2017). Thus, decreased investment and exports ultimately affect employment opportunities, creating hindrances to social and economic inclusion. Excessive inflation has also been associated with declining household welfare and overall macroeconomic instability, thereby constraining long-run growth potential (Sultanuzzaman et al., 2019).

A critical synthesis of the literature indicates a persistent inconsistency between theoretical expectations and empirical findings, particularly in developing economies. While nonlinear and

threshold-based models suggest that inflation promotes growth only up to a certain level, beyond which it becomes detrimental (Hoomani et al., 2021), many linear econometric approaches fail to capture this nonlinear relationship, resulting in mixed and often contradictory conclusions (Stojanovikj & Petrevski, 2024). This methodological limitation highlights the importance of adopting more robust analytical frameworks when examining the inflation–growth nexus. Based on this evidence, the following hypothesis is proposed:

H2: Inflation has a significant long-run effect on economic growth in SAARC countries.

Exchange Rate and Economic Growth

The exchange rate is a critical determinant of economic performance, as a stable and competitive exchange rate enhances international trade competitiveness, promotes external balance, and supports sustained economic growth (Pandey et al., 2024). Hooy and Baharumshah (2015) showed that moderate depreciation of a currency helps boost export growth and GDP by making domestic goods cheaper in international markets. Previous studies suggest that a stable exchange rate environment facilitates the process of investment decisions, production, and real economic growth.

However, an inconsistent rate of exchange and irrational fluctuations are harmful for economic growth because such conditions discourage investments and create adverse effects on external competitiveness. Raghutla (2020) revealed that a highly volatile currency increases the cost of imports and lowers the return of traded sectors, which causes slower GDP growth. Similarly, Ha et al. (2020) revealed that sharp depreciation episodes can increase inflation and disrupt production. Other evidence revealed that exchange rate misalignment decreases productivity and growth prospects for emerging markets (Ndhlela, 2012). This leads to a decrease in employment opportunities, giving rise to unequal income distribution in society.

The review of the exchange rate-growth literature exposes an important methodological divide: studies employing GARCH-based volatility measures (Barguellil et al., 2018) consistently find negative growth effects of exchange rate volatility, while studies using standard deviation proxies or period-average rates (Hooy & Baharumshah, 2015) report positive or mixed outcomes, suggesting that measurement choice significantly influences findings. This integrated analytical gap reinforces the need for the panel-based approach adopted in the present study. Accordingly, the following hypothesis is presented:

H3: Exchange rate movements have a significant long-run effect on economic growth in SAARC countries.

Research Methods

This study employed a quantitative panel research design to examine the effects of exports, inflation, and exchange rate movements on economic growth in six SAARC economies: Bangladesh, Bhutan, India, Nepal, Pakistan, and Sri Lanka. The study used annual secondary data from 1990 to 2024 obtained from the World Development Indicators to maintain consistency and cross-country comparability. GDP per capita was used as the dependent variable, while exports, inflation, and exchange rate were used as the explanatory variables. All variables were transformed into natural logarithmic form to stabilize variance and reduce possible heteroskedasticity in macroeconomic panel data (Bakari & Mabrouki, 2017).

The selection of the six SAARC economies was based on data availability and comparability. Afghanistan and the Maldives were excluded because of substantial gaps in annual time-series data, which could affect the balance and reliability of the panel dataset (World Bank, 2024). The study period from 1990 to 2024 was selected because it captures the post-liberalization economic trajectory of SAARC economies, including trade liberalization, financial reforms, and increasing regional integration (Raghutla, 2020). This extended time frame provides adequate observations for long-run panel analysis and is broader than several earlier SAARC-focused studies with shorter study periods (Tandan et al., 2022). Table 2 presents the variables, measurement units, data sources, and their role in the model.

Table 2

Detailed Description of Variables

Variables	**Definition**	**Units of Measurement**	**Data sources**	**Purpose/Role in Study**
Economic Growth (GDP)	GDP per capita (Current US$). It represents the total economic output per person and measures economic growth.	Current US dollars	(Databank The World Bank)	It measures the overall economic performance and growth.
Exports (EX)	The total value of exported goods and services is measured in U.S. dollars. It indicates the economic activity related to exports.	Current US dollars	(Databank The World Bank)	Assesses the impact of trade on economic growth.
Inflation (INF)	The annual percentage change in consumer prices reflects the rate of inflation.	Percentage	(Databank The World Bank)	It evaluates the effect of price stability on the economy.
Exchange Rate (ER)	The official exchange rate is the local currency units per U.S. dollar (period average). It reflects the value of the currency relative to the USD.	Local currency units per U.S. dollar	(Databank, The World Bank)	It examines the influence of currency value on trade and growth.

Note(s). Data were obtained from the World Development Indicators, World Bank (2024).

The study followed a sequential econometric procedure. First, the stationarity properties of the variables were examined using the Levin–Lin–Chu panel unit root test. The results showed that GDP, exports, inflation, and exchange rate were non-stationary at the level but became stationary after first differencing, indicating that the variables were integrated of order one, I(1) (Levin et al., 2002). This justified the use of panel cointegration tests to examine whether a stable long-run relationship existed among the variables.

Second, the Kao residual-based cointegration test and the Johansen Fisher panel cointegration test were applied. The Kao test was used to examine whether the residuals from the long-run relationship were stationary, while the Johansen Fisher test provided additional evidence on the presence of long-run equilibrium among the variables (Johansen, 1988; Kao, 1999).

After confirming cointegration, the long-run coefficients were estimated using FMOLS and DOLS. These estimators were selected because they are suitable for cointegrated panel data and help correct possible endogeneity and serial correlation problems in long-run estimation (Johansen, 1988; Kao, 1999). A fixed effects model was also estimated to check the robustness of the results by controlling for unobserved country-specific characteristics across the selected SAARC economies.

The Econometric model

To examine the long-run effects of exports, inflation, and exchange rate on economic growth, the study specifies real GDP as the dependent variable. The functional relationship between the dependent and explanatory variables is expressed as follows:

Linear Specification:
$GDP = f(EXP, INF, ER)$ ---------- (1)

From the above linear specification, the statistical model was derived
$RGDP = \beta_1 EXP_t + \beta_2 INF_t + \beta_3 ER_t$ ---------- (2)

The linear function was changed into log form for better interpretation of the results
$logGDP_{it} = \alpha + \beta_1 logEXP_{it} + \beta_2 logINF_{it} + \beta_3 logER_{it} + \mu_{it}$----------(3)

Where:
GDP: Real Gross Domestic Product
EXP: Export
INF: Inflation
ER: Exchange Rate
α is a constant
$\beta 1$, $\beta 2$, and $\beta 3$ are the coefficients of the parameter estimate, and μ is the error term

Results and Analysis

Descriptive Statistics

The descriptive statistics indicate that all variables are reasonably well-behaved with varying degrees of dispersion and distributional characteristics. LNGDP shows moderate variation across countries and is approximately normally distributed, as indicated by near-zero skewness, kurtosis close to three, and a Jarque–Bera probability above the conventional significance level. LNEXP also exhibits moderate dispersion with an almost symmetric distribution and no evidence of deviation from normality. LNINF demonstrates low variability and follows an approximately normal distribution pattern.

In contrast, LNER displays relatively higher fluctuation and deviation from normality, as reflected in its higher kurtosis and statistically significant Jarque–Bera result. Thus, most variables conform to normality assumptions, except for the exchange rate, which shows comparatively stronger volatility in the dataset.

Table 3

Descriptive Statistics

Variable	Mean	Std. Dev.	Skewness	Kurtosis	Jarque-Bera	Probability
LNGDP	24.460	2.386	-.283	2.451	5.238	.073
LNEXP	22.698	2.190	.045	2.631	1.216	.544
LNINF	1.925	.534	.098	3.365	1.443	.486
LNER	4.154	.519	.403	3.671	9.261	.010

Panel Unit Root Test

Table 4 reports the results of the Levin–Lin–Chu (LLC) panel unit root test. The findings indicate that none of the variables, real GDP, exports, inflation, and exchange rate, are stationary at their levels, implying the presence of unit roots. In other words, the series exhibits non-constant means and variances over time, reflecting the non-stationary nature of the panel data. Such characteristics are commonly observed in macroeconomic variables, particularly in developing economies, where long-term trends and structural changes often give rise to persistent stochastic movements.

Table 4

Panel Unit Root Test

Test Variables	Level		1st difference		Result
	t-value	*p-value*	*t-value*	*p- value*	
GDP	.649	.742	-9.250	.000	Stationary at first difference
EXP	-2.882	.002	-8.294	.000	Stationary at first difference
INF	-3.422	.000	-11.426	.000	Stationary at first difference
ER	-2.251	.012	-8.014	.000	Stationary at first difference

However, after transforming the variables into their first differences, all of them become stationary. This indicates that each series is integrated of order one, I(1), and becomes stable only after differencing. Achieving stationarity at the first difference is important because it ensures consistency with the assumptions required for long-run modelling (Levin et al., 2002). Since all variables share the same order of integration, the dataset is appropriate for conducting further analysis, including panel cointegration tests.

Johansen Fisher Test

The Johansen Fisher panel cointegration results in Table 5 show clear evidence of a long-run relationship among the variables.

Table 5

Results of Johansen Fisher Test

No. of CE(s)	(from trace test)	Prob.	(from max-eigen test)	Prob.
None	69.470	.000	49.530	.000
At most 1	30.470	.002	17.920	.118
At most 2	23.410	.024	17.040	.148
At most 3	25.040	.015	25.040	.015

Note. * Probabilities are computed using the asymptotic Chi-square distribution.

Both the trace and max-eigen statistics reject the null hypothesis of no cointegration at the first level, indicating that GDP, exports, inflation, and the exchange rate move together over time. This suggests that the variables share at least one stable long-run equilibrium path, which is common in macroeconomic studies where external sector indicators influence long-term growth.

Kao Cointegration Test

The Kao cointegration test results presented in Table 6 confirm the existence of a long-run equilibrium relationship among the variables. The statistically significant ADF t-statistic leads to the rejection of the null hypothesis of no cointegration, indicating that the residuals are stationary. This implies that any short-run deviations from equilibrium are temporary and tend to adjust back toward the long-run path over time. The relatively low residual and HAC variances further support the stability and consistency of the estimated long-run relationship.

Table 6

Results of the Kao Cointegration Test

	t-value	*p-value*
ADF	-2.190	.01
Residual variance	.007	
HAC variance	.011	

FMOLS and DOLS Regression Analysis

The FMOLS results (see Table 7) indicate a strong positive and statistically significant relationship between exports and economic growth, confirming that higher export performance contributes to long-run growth in the SAARC region. Inflation is found to have a negative but statistically insignificant effect, suggesting it does not meaningfully influence long-run growth dynamics. The exchange rate shows a positive and significant impact on economic growth, indicating that exchange rate movements play an important role in supporting GDP expansion.

The DOLS results further reinforce these findings. Exports remain positively and significantly associated with economic growth, while inflation continues to show an insignificant effect. The exchange rate again exhibits a positive and statistically significant relationship with growth, confirming its supportive role in long-run economic performance. Thus, both FMOLS and DOLS

estimations consistently demonstrate strong long-run relationships, with high explanatory power across models.

Table 7

Results of FMOLS and DOLS Regression Analysis

FMOLS					**DOLS**				
Variable	**Coefficient**	**Std. Error**	***t-Statistic***	***Prob.***	**Variable**	**Coefficient**	**Std. Error**	***t-Statistic***	***Prob.***
LNEXP	.682	.057	11.887	.000	LNEXP	.687	.086	8.024	.000
LNINF	-.056	.061	-.914	.362	LNINF	-.023	.136	-.171	.864
LNER	.636	.112	5.692	.000	LNER	.710	.174	4.078	.000
R-squared	.990	Mean dependent var		24.494	R-squared	.993	Mean dependent var		24.494
Adjusted R-squared	.989	S.D. dependent var		2.388	Adjusted R-squared	.990	S.D. dependent var		2.391
S.E. of regression	.248	Sum squared resid		11.429	S.E. of regression	.242	Sum squared resid		6.924
Long-run variance	0.179				Long-run variance	0.119			

Fixed Effect Model

Table 8 exhibits that the fixed effects model provides additional support for the long-run findings. The results confirm that exports have a strong and significant positive effect on economic growth, consistent with the outcomes of the FMOLS and DOLS estimations. The exchange rate also maintains a positive and significant impact, reinforcing its role in influencing economic performance in SAARC countries.

Table 8

Fixed Effect Model Results

Variable	**Coefficient**	**Std. Error**	**t-value**	**p-value**
LNEXP	.675	.033	20.209	.000
LNINF	-.048	.035	-1.344	.181
LNER	.606	.064	9.514	.000
C	6.710	.584	11.488	.000
Root MSE	.250	R-squared		.989
Mean dependent var	24.460	Adjusted R-squared		.988
S.D. dependent var	2.386	S.E. of regression		.256
Akaike info criterion	.157	Sum squared resid		12.662
Schwarz criterion	.305	Log likelihood		-6.889
Hannan-Quinn criter.	.217	F-statistic		2156.909
Durbin-Watson stat	.195	Prob(F-statistic)		.000

Inflation remains statistically insignificant in the fixed effects model, which matches the insignificance observed in the long-run estimators. Because the fixed effects approach controls for unobserved country-specific characteristics, these results help validate and strengthen the reliability of the long-run relationships identified by FMOLS and DOLS.

Based on the robust empirical outcomes from the FMOLS, DOLS, and Fixed Effects estimators, decisions regarding the proposed hypotheses can be established. The positive and highly significant coefficient for exports confirms that export performance is a crucial driver of long-run economic growth in the SAARC region; therefore, Hypothesis 1 (H1) is accepted.

Similarly, the statistically insignificant coefficient for inflation across all three estimation techniques indicates that price dynamics do not play a significant long-run role in determining regional output; thus, Hypothesis 2 (H2) is not accepted.

Furthermore, the strong positive relationship observed between the exchange rate and GDP confirms that currency competitiveness enhances macroeconomic performance, leading to the acceptance of Hypothesis 3 (H3).

Discussion

The objective of this study was to examine the long-run effects of exports, inflation, and exchange rate movements on economic growth in selected SAARC countries. The findings show that exports have a positive and statistically significant effect on economic growth; therefore, H1 is supported. This result is consistent with Export-Led Growth theory, which argues that export expansion improves productivity, increases foreign exchange earnings, and strengthens long-run output growth (Balassa, 1978; Feder, 1983). In the SAARC context, this suggests that export performance remains an important growth channel, particularly as these economies become more connected with regional and global markets. The finding also supports previous studies showing that exports contribute positively to economic growth in developing and emerging economies (Raghutla, 2020; Saeed & Hatem, 2017; Zhu et al., 2022). This shows that enhanced export performance advances social inclusion and employment opportunities as the capacity of governments increases to expand insurance systems and inclusive social protection.

The study also found that inflation has an insignificant effect on economic growth; therefore, H2 is not supported. Although some studies argue that moderate inflation can encourage investment and economic activity (Abaidoo & Agyapong, 2024; Akinsola & Odhiambo, 2017), the present finding indicates that inflation is not a major long-run growth determinant in SAARC economies. This may be because inflation in the region is often influenced by supply-side constraints, import dependence, food and energy price shocks, and external market pressures rather than productive domestic demand. Thus, inflation may affect household welfare and short-run stability, but it does not appear to explain long-run economic growth strongly. This result is consistent with studies suggesting that the inflation-growth relationship weakens in economies affected by structural constraints and external shocks (Ahmad et al., 2017; Chen et al., 2024; Sultanuzzaman et al., 2019).

Regarding exchange rate movements, the results show a positive and statistically significant effect on economic growth; therefore, H3 is supported. This indicates that exchange rate competitiveness plays an important role in strengthening external demand, trade performance, and long-run growth

in SAARC countries. A favorable exchange rate can make domestic goods more competitive in international markets and support export-led expansion (Hooy & Baharumshah, 2015). The findings suggest that long-run growth in SAARC economies is driven more by external-sector performance, particularly exports and exchange rate dynamics, than by inflation. This study contributes to the literature by showing that export-led growth in South Asia is more effective when supported by exchange rate competitiveness, while inflation control alone may not be sufficient for sustained economic growth (Adelakun et al., 2025). Thus, the notable economic growth in the countries creates social inclusion by creating employment opportunities with inclusive income distribution.

Conclusion and Implications

The study assessed the role of exports, inflation, exchange rate, and economic growth on the balanced panel data of SAARC economies over the period 1990-2024. The empirical results provide strong evidence of a positive and statistically significant impact of exports on economic growth, reinforcing the pivotal role of export activity as an engine of long-run output growth in SAARC economies for creating inclusive social protection. Exchange rate also exhibits a growth-enhancement as it indicates that favorable exchange rate conditions reinforce external competitiveness and bolster overall macroeconomic performance. The evidence shows that enhanced economic growth leads to social and economic inclusion by increasing the capacity of the government. In this context, inflation does not have any significant effect on economic growth, suggesting that price dynamics in the region are not a significant source of long-run growth. These findings emphasise the imperative for external-sector variables in shaping the growth trajectory of SAARC economies.

Beyond simply confirming the ELG hypothesis, this study critically extends the theoretical discourse by demonstrating that in the SAARC context. The ELG channel is heavily contingent upon exchange rate competitiveness, while domestic price stability (inflation) plays a negligible long-run role. The findings advance the theory by questioning the universal validity of demand-pull inflation models in import-based developing economies and highlighting the role of domestic monetary conditions in growth patterns. Practically, it implies that SAARC policymakers could prioritize strengthening monetary frameworks and domestic financial systems to support sustainable economic growth.

The contribution of exports and exchange rates is expected to strengthen in the coming years as SAARC economies deepen their integration into the international market. Further, with the rising participation of SAARC economies in global markets, reforms to remove impediments to growth. Also, intensifying regional cooperation and connectivity, trade is likely to remain an important channel for long-run growth. While inflation remains a key macroeconomic indicator, it has limited explanatory power for long-run growth since no country desires it at the price of development. This ensures that the price stability achieved contributes to productive economic activity. The findings also imply that strong export performance and macroeconomic stability could be maintained for strengthening fiscal capacity, risk protection mechanisms to ensure the sustainability of social protection and insurance systems in SAARC countries. Hence, these studies reinforce the central role of export performance and exchange rate in sustaining economic growth in the SAARC region, further reinforcing the importance of current efforts to promote external competitiveness and trade-oriented development strategies.

Limitations and Future Research

Despite these robust contributions, the present study acknowledges several critical limitations. First, the use of aggregate panel data may hide country-specific differences, so the results may not fully represent smaller economies such as Bhutan and Nepal. Second, the model excludes important factors like institutional quality, foreign direct investment, and political stability, and its linear form cannot capture possible asymmetric or threshold effects during major exchange rate shocks. This study can be extended in future research. Investment, financial development and institutional quality have a considerable impact on growth dynamics in the SAARC region.

Further macro-factors can be incorporated to verify the results obtained in this study. A longer time span may produce different results from this study. Additionally, more countries from the developing region can be included in future studies for cross-validation of the results of this study. In future studies, nonlinear or asymmetric effects can be seen, as export effects or exchange-rate effects may be different in different situations. Also, at the sectoral level and with the use of more advanced econometrics, further studies can provide a new dimension to see how external-sector variables affect the long-run growth of countries.

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Conflict of Interest

The authors declare that there is no conflict of interest.

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Ethical Statement

This study relied exclusively on secondary data obtained from publicly available sources and did not involve human participants, personal data collection, or animal subjects. Accordingly, formal ethical approval and informed consent were not required. The research was conducted in accordance with established principles of research ethics, academic integrity, and the responsible use of secondary data.

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