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The role of remittances and FDI in Promoting Economic Growth in South Asia: A Dynamic Panel Data Approach

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Abstract:

This study examines the impact of remittances and foreign direct investment (FDI) on economic growth in South Asian countries using panel data spanning 1994 to 2023. To analyze the relationship between these variables, we employ a range of econometric techniques, including the cross-sectional dependency test, LLC and IPS unit root tests, Johansen Fisher-type co-integration test, and the Vector Error Correction Model (VECM). The empirical findings indicate that remittances and exports contribute positively to long-term GDP growth in the region. However, FDI demonstrates a negative and statistically significant impact on GDP in both the short and long run. Additionally, a bidirectional short-run Granger causality exists between FDI and GDP, whereas remittances exhibit a unidirectional causality toward GDP growth. No causality was found between exports and GDP. In suggestion, the South Asian economies, emphasise the need for strategic migration policies and reforms to enhance remittance inflows. Future research could investigate the impact of remittances on other macroeconomic indicators across different economies and explore how financial development and varying types of remittances influence economic growth.

Keywords: Remittance, Economic growth, foreign direct investment, Exports and South Asia

JEL Classification: F24; N15; F21; F1

Introduction

Remittances have played a transformative role in shaping household living standards in South Asia. Over the past two decades, the region has emerged as one of the largest recipients of remittances globally, with millions of workers migrating to more prosperous economies and sending money back to their families. These financial inflows have been instrumental in alleviating poverty, improving access to essential services, and fostering economic stability in South Asian countries. South Asia, comprising eight countries including Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka, is one of the fastest-growing regions in the world. The region has experienced rapid economic growth, driven by various factors including remittances, foreign direct investment (FDI), and trade. Remittances and FDI have been identified as key drivers of economic growth in South Asia,

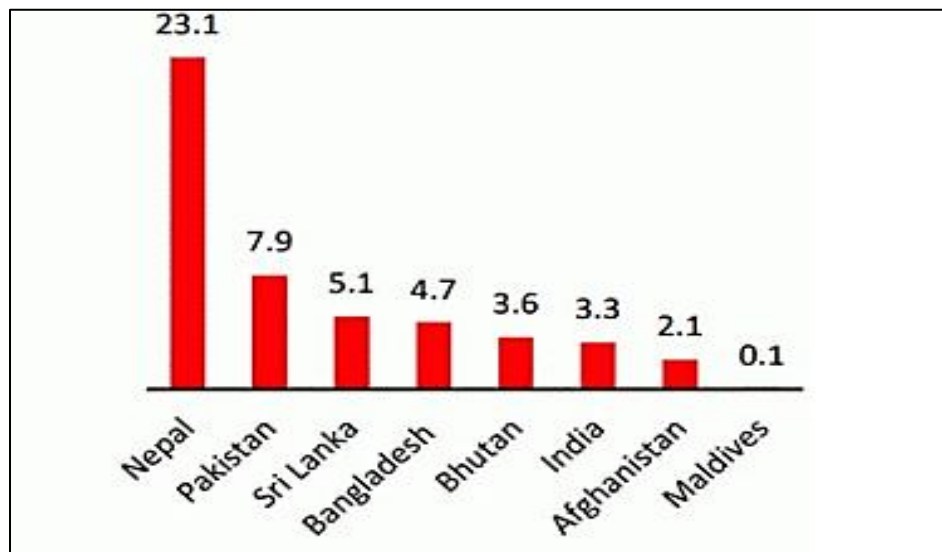
Remittances refer to the money migrant workers send back to their families in their home countries while they are living and working abroad. For many developing nations, remittances have become a crucial and reliable source of capital and external financial support (Al-Assaf & Al-Malki, 2014). According to Comes et al. (2017), remittance flows boost national income by stimulating investment, increasing consumption, generating employment, and indirectly improving the income of non-recipient households. As a result, remittances often contribute to poverty alleviation, skill development, improvements in healthcare, and enhanced access to education, among other positive outcomes (Khathalan, 2012). Additionally, remittances play a critical role in foreign exchange earnings, influencing the balance of payments of the recipient countries (Barajas, 2010).

The neoclassical migration theory suggests that labour moves from low-wage to high-wage countries due to wage differences (Kurekova, 2011). With approximately 281 million people expected to migrate globally by 2023, their economic impact on developing nations will be substantial. The Global Knowledge Partnership on Migration and Development (Knomad, 2023) reported that remittances play a significant macroeconomic role, contributing \$786 billion globally, with \$450 billion directed to developing or underdeveloped nations. In some of these countries, remittances surpass foreign direct investment (FDI) and constitute a substantial portion of their GDP (Adenutsi, 2010). Remittances bolster national savings, alleviate balance of payments issues, reduce foreign exchange constraints, and support development budgets. They are

particularly advantageous for developing nations facing challenges related to limited foreign exchange reserves required to cover import costs.

Remittances are a significant source of foreign exchange earnings for many South Asian countries. According to the World Bank, remittances to South Asia have grown steadily over the years, reaching \$131 billion in 2020. Remittances have been found to have a positive impact on economic growth in South Asia. A study by the International Monetary Fund (IMF) found that a 1% increase in remittances leads to a 0.3% increase in GDP growth in South Asia (IMF, 2019). Internationally, foreign remittances have been increasing rapidly, making them the fastest-growing source of foreign exchange for low-income countries, particularly in South Asia. Countries such as India, Sri Lanka, Bangladesh, Pakistan, and Nepal are among the largest recipients, receiving billions of dollars annually from their expatriate workers. According to a World Bank report, remittance flows to South Asia grew by 7.2% in 2023, totaling \$189 billion. India received \$125 billion, Pakistan \$26.3 billion, Bangladesh \$21.82 billion, Nepal \$11 billion, and Sri Lanka \$5.4 billion (World Bank, 2023).

Figure 1 Top Remittance Recipients in South Asia, percentage of GDP (World Bank 2023)



In terms of remittances as a percentage of GDP, Nepal ranked highest among South Asian nations in 2023, with remittances accounting for 22.8% of its GDP. Pakistan followed with 7.1%, Sri Lanka with 7%, Bangladesh with 5.2%, and India with 3.4%. Despite the large remittance

inflows, the share of remittances relative to GDP in these countries remains relatively low. This prompted the current study to examine the impact of remittances on economic development in South Asia, as the contribution of remittances to GDP may not fully reflect their broader economic influence (Nadeem, and Cheema, 2022).

FDI is another important driver of economic growth in South Asia. It can contribute to economic growth by increasing investment, promoting technology transfer, and enhancing productivity. According to the United Nations Conference on Trade and Development (UNCTAD), FDI inflows to South Asia have grown steadily over the years, reaching \$54 billion in 2020. FDI can contribute to economic growth in several ways. Firstly, FDI can increase investment in key sectors such as infrastructure, manufacturing, and services. Secondly, FDI can promote technology transfer, enabling domestic firms to adopt new technologies and improve their productivity. Finally, FDI can also contribute to economic growth by increasing competition, which can lead to improved efficiency and innovation (Kumar, 2002). However, the interaction between remittances and FDI can also have a negative impact on economic growth in South Asia. For example, if remittances are not invested productively, they can lead to consumption and reduce the incentive for domestic investment, which can negatively impact economic growth. Similarly, if FDI is not managed properly, it can lead to environmental degradation, labour exploitation, and other negative social impacts, which can also negatively impact economic growth (Nadeem, et, al 2024).

The objective of the research is to analyze the effect of remittances on economic growth in select South Asian countries using a panel co-integration approach. The study concentrates on four emerging economies that receive significant global remittance flows. South Asia has experienced significant migration outflows, resulting in substantial remittance inflows. However, despite these financial injections, many South Asian countries remain underdeveloped. This paper seeks to explore the underlying reasons for this paradox and its implications for future development. This study is organized into the following sections: 1. provides an overview of the research topic and context. 2. Examines existing research and theoretical frameworks related to the topic. 3. Describe the data collection process, sampling strategy, and analytical methods used for estimation. 4.

Present the findings, interpret the results, and discuss their implications. 5 recommendations for future research, policy, and practice based on the study's conclusions.

Literature Review

Remittances can contribute to economic growth in several ways. Firstly, remittances can increase household income, enabling households to invest in education, healthcare, and other productive activities. Secondly, remittances can reduce poverty and inequality, as they tend to benefit the poor and vulnerable segments of the population. Finally, remittances can also contribute to economic growth by increasing domestic investment, as remittances can be used to finance investment projects (Ratha, 2013).

Chami et al. (2005), using data from 113 countries over 39 years (1970–1998), found that remittances hinder economic progress, presenting a negative relationship with GDP growth. Similarly, Ramirez and Sharma (2008) examined 23 Latin American and Caribbean nations from 1990 to 2007. Their analysis also revealed a significant and positive relationship between remittances and real per capita GDP growth, highlighting the critical role remittances play in boosting economic development in both high- and low-income nations. Karagoz (2009) investigated the relationship between worker remittances and economic development in Turkey using time-series data from 1970 to 2005, finding a negative link between the two variables. Pradhan et al. (2009) conducted a study using panel data from 1980 to 2004, covering 25 years and 39 developing countries. Their findings indicated that remittances had a substantial positive effect on economic growth. Similarly, Barajas et al. (2009), using panel data from 84 countries spanning 1970–2004, concluded that remittances did not contribute to economic growth in developing countries.

Fayissa and Nsiah (2010) extended the scope of this analysis to 36 African countries over the period from 1980 to 2004, confirming a positive correlation between remittances and economic growth. Jawaid and Raza (2010) analyzed the impact of remittances on five South Asian countries between 1975 and 2009. They found that while remittances were beneficial for India, Nepal, Sri Lanka, and Bangladesh in the long term, they had a detrimental effect on Pakistan's economy. Khathalan (2012) examined the short- and long-term effects of worker remittances on economic

development in Pakistan between 1976 and 2010. Using the ARDL and ECM methods, the study found that worker remittances are positively correlated with both short-term and long-term economic growth. In South Asia, Cooray (2012) found similar results using panel data from 1970 to 2008, reinforcing the argument that remittances contribute positively to the economic growth of the region.

Rahman, (2013) explored the impact of remittances on economic growth in Bangladesh and found that remittances have a positive impact on economic growth, but the impact is limited due to the country's underdeveloped financial sector. Similarly, a study on Pakistan found that FDI has a positive impact on economic growth, but the impact is affected by the country's macroeconomic instability (Husain, 2013). Tolcha and Rao (2014) studied Ethiopia from 1981 to 2012 and found that remittances had a significant positive effect on short-term economic development but a negative impact on long-term GDP growth. Vacaflares and Kishan (2014) reported that remittances contribute positively to international reserves in five Latin American countries, with international reserves serving as a key transmission mechanism. Shaikh et al. (2015), in their study of Pakistan over 35 years (1980-2014), found no clear impact of remittances on the country's economic progress. Azam (2015) also argued that remittances boost economic growth in Sri Lanka, Bangladesh, Pakistan, and India.

Pradhan (2016), using panel data from 1994 to 2013 for five developing economies (Russia, Brazil, India, China, and South Africa), found a positive relationship between remittances and economic growth in China. However, the effects were negative for Russia, India, and Brazil, while the impact on South Africa was positive but statistically insignificant. Similarly, a study in Nepal found that remittances have a positive impact on economic growth, but the impact is affected by the country's macroeconomic policies (Sharma, 2016). Kashif et al. (2017) similarly argued that economic growth has a positive effect on international reserves, highlighting the dynamic connection between the two. Their study found that a 1 percent rise in economic growth leads to a 0.16 percent increase in international reserves. Meyer and Shera (2017) investigated the impact of remittances on economic growth in six countries that receive large remittance inflows, further supporting the conclusion that remittances can foster economic expansion in remittance-dependent economies.

Sutradhar (2020) also explored the role of remittances in the economic growth of South Asian nations using balanced panel data from 1977 to 2016. The study concluded that remittances generally hinder economic growth in most countries in the region, with India being the exception. Nadeem, and Cheema (2022) investigated the effect of Foreign Remittances on Gender Parity in Pakistan: Evidence from Panel Data Techniques and found the positive affect of remittance on household consumption to reduce the gender disparity. Chowdhury (2023) observed that foreign exchange reserves have a positive effect on investment in both the short and long terms in Bangladesh. Similarly, Osigwe et al. (2015) found that foreign exchange reserves positively impact economic growth in Nigeria.

Suman Bindu et al. (2024) identified a significant and positive relationship between remittances, financial development, and international reserves in Brazil, Russia, India, China, and South Africa (BRICS) from 1960 to 2022, affecting both the short and long-term. Chand and Singh (2024) examined remittances' effects on 52 emerging and developing countries from 1996 to 2021 and concluded that remittances foster sustainable economic growth.

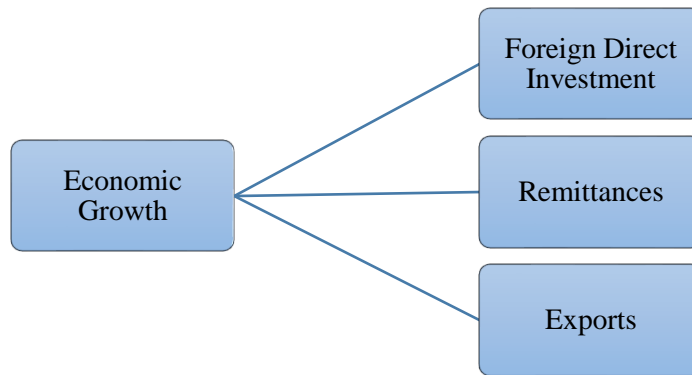
In conclusion, remittances and FDI are important drivers of economic growth in South Asia. Remittances can contribute to economic growth by increasing household income, reducing poverty and inequality, and increasing domestic investment. FDI can contribute to economic growth by increasing investment, promoting technology transfer, and enhancing productivity. The interaction between remittances and FDI can also have an impact on economic growth in South Asia, as they can complement each other or have negative impacts if not managed properly.

Data and methodology

This study employs secondary data to examine the effects of remittances and Foreign Direct Investment (FDI) on the Gross Domestic Product (GDP) of South Asian countries. In this analysis, GDP is used as the dependent variable, serving as a proxy for economic growth. The independent variables include remittances, FDI, and Exports, as these factors are considered key drivers of economic performance in the region. To meet the objectives of this research, panel data

has been collected from a range of secondary sources covering the period from 1994 to 2023. The use of panel data enables a comprehensive analysis of trends over time and provides a more robust understanding of the relationships between remittances, FDI, and GDP growth across the selected countries. By examining this data, the study aims to provide valuable insights into the economic dynamics of South Asia.

Variables	Explanation	Data source
GDP (Dependent Variable)	GDP per capita growth rate	Data about all variables
FDI	Net FDI inflows (% of GDP)	Collected from WDI, World Bank
REMIT	Foreign Remittance inflows (% of GDP)	
EXP	Export (% of GDP)	



This study applies the Ordinary Least Squares (OLS) method to investigate the relationship between GDP, remittances (REMIT), Foreign Direct Investment (FDI), and Exports (EXP). A multiple regression model, inspired by the theoretical framework of Mankiw, Romer, and Weil (1992), is used to hypothesize that GDP in South Asian countries is influenced by remittances, FDI, and Exports. The relationship can be represented as:

$$GDP = f(REMIT, FDI, EXP) \quad (1)$$

Since the data is collected at discrete intervals, the model is reformulated as follows:

$$GDP_{it} = f(REMIT_{it}, FDI_{it}, EXP_{it}) \quad (2)$$

To address potential non-linear relationships between the dependent and independent variables, logarithmic transformations are commonly applied in regression models. When these variables are transformed logarithmically, the model takes the following form:

$$LGDP_{it} = L\alpha + \beta_1 LREMIT_{it} + \beta_2 LFDI_{it} + \beta_3 LEXP_{it} + \varepsilon_{it} \quad (3)$$

If we assume $L\alpha = \beta_0$, the model is simplified as:

$$LGDP_{it} = \beta_0 + \beta_1 LREMIT_{it} + \beta_2 LFDI_{it} + \beta_3 LEXP_{it} + \varepsilon_{it} \quad (4)$$

Where:

$LGDP_{it}$ = Natural logarithm of GDP at time t and country i

$LREMIT_{it}$ = Natural logarithm of remittance at time t and country i

$LFDI_{it}$ = Natural logarithm of FDI at time t and country i

$LEXP_{it}$ = Natural logarithm of export at time t and country i

e = Base of natural log

ε_{it} = Error term

This regression model will allow the analysis of how remittances, FDI, and Exports influence the GDP of South Asian countries over the study period.

Results and Discussion

The variables presented in Table 1 exhibit reasonable value ranges and relatively small standard deviations. The skewness coefficient for the LGDP variable suggests that the distribution is not highly skewed, as it is less than 1. In contrast, the distributions for LREMIT, LFDI, and LEXP are moderately skewed, with skewness coefficients ranging from -1.4763 to 0.4384. Additionally, all the variables show a leptokurtic distribution, indicated by non-zero kurtosis coefficients.

Table 1 Descriptive Statistics

Measures	Mean	Median	Maximum	Minimum	Std. Dev.	Skewness	Kurtosis	Jarque-Bera
LGDP	1.0859	1.2129	2.1019	-1.5241	0.6278	-1.0738	4.1869	40.5848

LREMIT	1.3866	1.5397	2.2596	-0.3811	0.7181	-0.674	2.6903	13.0987
LFDI	-0.8861	-0.3982	1.2864	-6.9178	1.6637	-1.4743	5.8747	91.4187
EXP	2.9308	2.7174	4.8107	1.2072	0.8287	0.4324	2.8325	3.4864

Author Estimation by using E-view

A standard method for detecting multicollinearity is to examine the bivariate correlation among the predictor variables. Typically, a correlation coefficient above 0.80 suggests the presence of multicollinearity. However, based on the correlation matrix in Table 2, there is no indication of multicollinearity in this model, as no two independent variables exhibit a strong correlation.

Table 2 Correlation metrics

Variables	LGDP	LREMIT	LFDI	LTR
LGDP	1.0000	--	--	--
LREMIT	0.2267	1.0000	--	--
LFDI	0.3135	0.4951	1.0000	--
EXP	0.5405	0.0465	0.7569	1.0000

Author Estimation by using E-view

Panel Unit Root Test

All the variables are found to be non-stationary at their original level but become stationary after taking the first difference. The computed LLC and IPS test statistics, along with their corresponding p-values, decisively reject the null hypothesis of a unit root at the 5% significance level when the first difference is applied. Consequently, both tests suggest that co-integration analysis is necessary to examine the long-term relationships between the variables.

Table 3 Panel Unit Root result

Variable	Statistics	At level		At First Difference	
		<i>Constant</i>	<i>Constant and Trend</i>	<i>Constant</i>	<i>Constant and Trend</i>
LGDP	I	3.4832	0.3476	-6.1911	-6.7665
	II	4.4115	0.2211	-7.6897	-9.1238
LREMIT	I	0.8880	0.1879	-8.1715	-7.0786

	II	3.8744	-0.0762	-8.7942	-7.8312
LFDI	I	-2.3886	-3.4572	-9.1347	-7.7803
	II	-2.1633	-3.1221	-10.1956	9.3832
EXP	I	-0.6776	-0.4847	-10.5261	-9.7534
	II	-0.5704	-0.7204	-10.4386	-9.6253

Author Estimation by using E-view (I="LLC" Levin, Lin, and Chu," while II="IPS" stands for "Im, Pesaran, and Shin," the economists who introduced these test statistics. These tests are utilized to assess whether a panel of time series data exhibits stationarity.)

Co-integration Result

The first step in performing a co-integration test is to determine the appropriate lag length. Various methods can be applied to identify the optimal lag period for the VAR model. As indicated in Table 4, four out of five methods suggest a lag order of 1. Hence, the optimal lag order for the VAR model is determined to be 1.

Table 4 Lag order selection statistics

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-724.3523	NA	0.1359	9.1925	9.5026	9.2587
1	-234.295	931.269	0.00298*	3.2309*	3.6256*	3.3934*
2	-221.840	21.148	0.00317	3.128	3.9961	3.5787
3	-189.485	10.8150	0.0064	3.4215	4.7739	3.9269

Author Estimation by using E-view, *shows the max lag chosen according to the criteria

Both the trace test and the maximum eigenvalue test were applied to assess the presence of co-integration among the variables. The results from both tests reject the null hypothesis of no co-integration at the 5% significance level, suggesting that there are significant long-term relationships among the variables. Specifically, both tests indicate the existence of four co-integration equations. This finding implies that, in the long run, the independent and dependent variables are closely interrelated, pointing to a strong and consistent relationship between them over time.

Table 5: Trace Statistic for Unrestricted Co-integration

Hypothesized No of CE(s)	Eigenvalue	Trace Statistic	Critical Value (at 0.05 level)	Probability
None *	0.17460	64.75636	47.8513	0.0006
At most 1 *	0.11082	34.81998	29.7977	0.0121
At most 2 *	0.07653	16.60882	15.4971	0.0339
At most 3 *	0.02690	4.252296	3.8465	0.0392
Maximum Eigenvalue Unrestricted Co-integration Rank Test				
Hypothesized	Eigenvalue	Max-Eigen Statistic	Critical Value (at 0.05 level)	Probability
None *	0.17460	29.93638	27.5834	0.0245
At most 1	0.11082	18.21116	21.1312	0.1221
At most 2	0.07653	12.35652	14.2660	0.0980
At most 3 *	0.02690	4.252296	3.8415	0.0392

Author Estimation by using E-view, *Signifies that the hypothesis is rejected at the 0.05 level; a trace test uncovers many co-integrating equations.

Long-run Co-integration Equation

From the panel vector error correction estimates, to derive the co-integration long-run equation:

$$ETC_{it-1} = 1.0000LGDP_{it-1} + 0.3854LREMIT_{it-1} + 0.0362LFDI_{it-1} + 0.5578EXP_{it-1} + 1.1258... \quad (5)$$

Where, *ECT* is the error correction term. We get from equation (5),

$$LGDP_{it-1} = ECT_{it-1} + 0.3835LREMIT_{it-1} + 0.0362LFDI_{it-1} + 0.5578LTR_{it-1} + 1.1258... \quad (6)$$

LGDP	LREMIT	LFDI	LEXP
1.00000	-0.3854 (0.1073)	0.0362 (0.0467)	-0.5578 (0.0793)

The co-integrating equation derived through the Johansen method provides valuable insights into the relationships between remittances, FDI, Exports (EXP), and GDP in South Asian countries. The equation suggests that a one-unit increase in remittances is associated with a 0.3854-

unit increase in GDP, highlighting a positive relationship between remittances and economic growth. On the other hand, a one-unit increase in FDI results in a 0.0362-unit decrease in GDP, indicating a negative impact of FDI on GDP in the long run. Additionally, a one-unit increase in Exports (EXP) is linked to a 0.5578-unit increase in GDP, signifying a positive effect of EXP on economic growth. The lower section of Table 6 provides four columns representing the error correction estimates for the four dependent variables: D(LGDP), D(LREMIT), D(LFDI), and D(LEXP). Among these, the focus is primarily on variable D(LGDP), as it is of central importance in analyzing the dynamics of GDP growth with the other economic factors.

In the context of the error correction model, the term ECT_{it-1} is defined in equation (6), which provides a numerical representation of the vector error correction model. When interpreting the results, the coefficient for GDP at lag 1 shows that a one-unit increase in GDP at the previous period (lag 1) corresponds to an average decrease of 0.0296 units in GDP. This suggests a slight negative adjustment in GDP following its prior increase.

For remittances (REMIT) at lag 1, the coefficient is 0.0210, indicating that a one-unit increase in remittances leads to a 0.0210-unit rise in GDP. This reflects a positive short-term impact of remittances on GDP. On the other hand, the coefficient for Exports (EXP) at lag 1 is -0.2375, meaning that a one-unit decrease in EXP is associated with a 0.2375-unit decline in GDP. This shows that a reduction in export has a significant negative effect on economic growth in the short term.

Table 6 Vector Error Correction Estimations results

Coitegration Eq.	CointEq1			
D(GDP(-1))	1.00000			
D(REMIT(-1))	-0.38317			
D(FDI(-1))	0.03529			
D(EXP(-1))	-0.57687			
C	1.12529			
Error Correction	D(GDP)	D(REMIT)	D(FDI)	D(EXP)
CointEq1	- 0.7151	0.0834	0.1544	0.0841

D(GDP(-1))	- 0.0296	- 0.0548	0.0694	0.0141
D(REMIT(-1))	0.02096	0.06756	- 0.2751	0.2403
D(FDI(-1))	0.0029	0.0280	- 0.1782	0.01681
D(EXP(-1))	- 0.2375	0.05174	0.4105	-0.0604

Author Estimation by using E-view

The coefficient for the GDP error correction term is -0.7151, indicating that approximately 71.51% of the disequilibrium in GDP is corrected each year. This implies that the system is stable, as the current period effectively adjusts the discrepancies from the long-term equilibrium at a rate of 71.51%. The relatively modest speed of adjustment is reflected in the fact that the error correction term for remittances has a coefficient of 0.0834, suggesting that any deviation from equilibrium caused by changes in remittances is corrected at a rate of 8.34%. Similarly, the adjustment speeds for FDI and Exports (EXP) are 15.44% and 8.41%, respectively, demonstrating the rates at which these variables return to equilibrium.

Results of Granger Causality Test

In a VEC model, causality can originate from two sources: the error correction term, which reflects long-term causality, and the lagged explanatory variables, which indicate short-run causality. If the series are not co-integrated, short-term relationships are assessed using the Granger causality test within a VAR framework. For panel data, the Dumitrescu-Hurlin causality test is frequently employed. Thus, in this study, we apply the Dumitrescu-Hurlin Granger causality test to examine whether each independent variable has an impact on the dependent variable, or if the relationship works in the opposite direction.

Table 7 Granger causality test statistics

Null Hypothesis	Z-bar Stat	W-Stat	Prob.	Inference
LREMIT does not homogeneously cause LGDP	3.4690	6.0864	0.0005**	Rejected
LGDP does not homogeneously cause LFDI	2.5072	4.9361	0.0124***	Rejected
LGDP does not homogeneously cause LREMIT	-0.5708	1.4791	0.5673	Accepted
LFDI does not homogeneously cause LGDP	2.5473	5.0065	0.0109***	Rejected
LEXP does not homogeneously cause LGDP	5.8223	8.7176	6.8709	Accepted

LGDP does not homogeneously cause LEXP	-1.0833	0.8960	0.2787	Accepted
Source E-Views output. Note: ***, **, * denote correspondingly 1%, 5% and 10% level of significance.				

Results show that for LREMIT and LGDP, we can reject the null hypothesis that LGDP does not Granger cause changes in LREM, as the p-value is less than 0.05. This suggests a unidirectional short-run Granger causality from remittances to GDP. On the other hand, LFDI exhibits bidirectional short-run Granger causality with both LGDP and LREM, implying that each variable has an influence on the other. For the remaining variables, the null hypothesis is not rejected, indicating that there is no short-run causality with LGDP. This means that these variables are independent of LGDP, and vice versa.

Conclusion and Suggestion

This study aims to assess the impact of remittances, foreign direct investment (FDI), and Exports on GDP in South Asian countries, using panel data from 1994 to 2023. A variety of econometric techniques were employed to estimate the relationships between the variables, including the cross-sectional dependency test, the LLC and IPS unit root tests, the Johansen Fisher type co-integration test, the Vector Error Correction Model (VECM), and the Dumitrescu-Hurlin causality tests. Additionally, several diagnostic tests were conducted to ensure the robustness of the model.

The empirical findings suggest that remittances and Exports positively influence GDP growth in the long run, contributing significantly to the economic expansion of South Asian nations. In contrast, FDI exhibits a negative and statistically significant relationship with GDP, both in the short and long term. Furthermore, our study reveals that FDI and GDP have a bidirectional short-run Granger causality, indicating a mutual influence between the two. On the other hand, remittances exhibit a unidirectional short-run Granger causality towards GDP, meaning that remittances drive GDP growth but not the other way around. No Granger causality was found between Exports and GDP.

These findings are consistent with previous studies that have highlighted a positive association between remittances and GDP growth, such as those by Ramirez and Sharma (2008),

Pradhan et al. (2009), Cooray (2012), Fayissa and Nsiah (2010), Azam (2015), Meyer and Shera (2017), and Chand and Singh (2024). However, our results diverge from those of Sutradhar (2020) and Chami et al. (2005), whose findings suggested a different relationship between remittances and economic growth.

For policymakers in South Asia, these results underline the importance of migration policies and appropriate reforms to increase remittances and harness their potential for economic growth. This study suggests that governments should focus on creating a conducive environment for migration and remittances to maximize their economic benefits. Like many prior studies, this research has certain limitations that provide opportunities for future research. First, the focus is on a panel data analysis of South Asian economies, which may not be generalizable to other regions. Second, the study does not fully explore the broader macroeconomic effects of workers' remittances in this region. Furthermore, due to data limitations, a threshold analysis was not conducted to explore how the relationships between remittances and other macroeconomic variables might change at different levels of remittance flows. Despite these constraints, the findings open avenues for future research, such as examining the impact of remittances on other macroeconomic indicators across different countries, and investigating how various types of remittances and financial development might influence these relationships.

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