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IMPACT OF REMITTANCES ON INCOME INEQUALITY: EVIDENCE FROM SOUTH ASIA

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ABSTRACT

This study examines the impact of remittances on income inequality in South Asia over the period 1990-2022. The analysis employs panel estimation techniques, including Fixed Effects (FE), Random Effects (RE), and Fully Modified OLS, to ensure robust results. Cointegration and Granger causality tests are applied to explore the long-run relationships and causal dynamics among the variables. The empirical findings indicate that remittances (REM), capitalization (CAP), urbanization (URB), and exports (EX) contribute to widening income inequality (INEQ) in the region. Results confirm that an increase in remittances exacerbates the income gap between rich and poor. The Granger causality analysis reveals that income inequality leads to changes in capitalization and exports, highlighting a unidirectional relationship. Moreover, bidirectional causality is observed between remittances and inequality, as well as between urbanization and inequality. The results further indicate a unidirectional causal flow from capitalization to remittances and from urbanization to capital. In addition, bidirectional causal relationships are found between capitalization and remittances, urbanization and remittances, exports and remittances, and exports and urbanization. Overall, the study provides strong evidence that remittances, while beneficial for income generation, may also intensify income disparities in South Asia, underscoring the need for policies that promote inclusive growth.

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INTRODUCTION

Economic growth is widely regarded as a central objective of macroeconomic policy, as it enhances living standards, reduces poverty, and improves overall social welfare. However, growth alone does not guarantee equitable income distribution. In many developing economies, rapid economic expansion has been accompanied by rising income inequality, raising concerns about the inclusiveness and sustainability of growth (Kuznets, 1955). As a result, understanding the factors that influence income distribution alongside economic growth has become a major focus of development. Among these factors, international migration and remittance inflows have emerged as increasingly important for developing countries. Remittances represent a significant source of external finance, often exceeding foreign direct investment and official development assistance. They contribute to household income, consumption smoothing, and foreign exchange stability. Despite their positive role in supporting economic activities, the impact of remittances on income inequality remains ambiguous and requires careful empirical investigation (Adams & Page, 2005; Azizi, 2021).

From a global perspective, remittances affect income inequality through multiple channels. On the one hand, remittance inflows can reduce inequality by increasing the income of recipient households, easing credit constraints, and enabling greater investment in education, health, and small businesses (Giuliano & Ruiz-Arranz, 2009). These effects may disproportionately benefit low-income households, thereby improving income distribution. On the other hand, international migration is often selective, as it requires financial resources, education, and social networks. Consequently, remittances may primarily accrue to relatively better-off households, widening the income gap between remittance-receiving and non-receiving households (Adams Jr, 1989). Empirical evidence from international studies remains mixed, with some findings indicating an inequality-reducing effect of remittances, while others suggest that remittances worsen income disparities depending on country-specific conditions and stages of development (Anwar et al., 2024; Song et al., 2021). South Asia is one of the largest remittance-receiving regions in the world, characterized by labor-abundant economies, high population growth, and significant out-migration. Countries such as Pakistan, India, Bangladesh, Nepal, and Sri Lanka rely heavily on remittances as a source of household income and foreign exchange earnings. At the same time, the region faces persistent structural challenges, including unemployment, income inequality, rapid urbanization, and a large informal sector.

Income inequality remains a critical concern in South Asia, as economic growth has not been evenly distributed across regions and income groups. Urban–rural income gaps, unequal access to employment opportunities, and differences in human capital accumulation contribute to widening disparities. In this context, remittances play a particularly important role, as they can either serve as a mechanism for reducing inequality or intensify existing disparities depending on how migration opportunities and remittance flows are distributed across households (Tokhirov, 2021; Wu et al., 2024). Therefore, examining the role of remittances in shaping income inequality is especially relevant for South Asian economies.

Despite the growing importance of remittances for South Asian economies, the empirical evidence on their impact on income inequality remains inconclusive. Existing studies provide mixed results, with some suggesting that remittances reduce inequality, while others argue that they widen the income gap. Moreover, limited research simultaneously accounts for other structural factors such as capital formation, urbanization, and exports when analyzing income inequality in South Asia. This creates a gap in understanding the true distributional impact of remittances in the region. Hence, the problem addressed in this study is the unclear and under-explored impact of remittances on income inequality in South Asian countries. In essence, it will investigate how the advantages of remittances vary according to the various degrees of scarcity and disparity in the zone. The objectives of the study are also to examine how capital formation, urbanization, and exports affect income inequality. The study also explores the long-run relationship and causal linkages among remittances, income inequality, and other macroeconomic factors in South Asia.

However, there may be drawbacks to relying largely on remittances. Economic dependency has the risk of making households less inclined to look for work or participate in local economic activities. Remittance inflows have the possible to rise values and lower the standard of living, especially in localized economies. Furthermore, an excessive emphasis on remittances may take attention away from growing other economic sectors or producing more reliable sources of income. Therefore, even while they can significantly reduce unfair income distribution, international remittances have the greatest impact when paired with more comprehensive strategies and policies for economic growth.

The remainder of the paper is organized as follows. Section 2 reviews the relevant literature on remittances and income inequality. Sections 3 and 4 present the theoretical framework and data description, respectively. Section 5 reports and discusses the empirical findings along with their implications. Finally, Section 6 concludes the study and provides policy recommendations based on the results.

Literature Review

Anwar et al. (2024) examined the relationship between recipient countries' inequality and remittances during 1970-2000. Although this link has been the subject of several empirical studies, no prior attempt has been made to systematically and thoroughly synthesize the findings. This paper analyses 578 estimates from 45 publications using sophisticated meta-analysis approaches, including Bayesian model averaging. They discovered that although economically tiny, remittances had an unfavorable impact on inequality.

Mallela et al. (2023) looked at the association between payments, monetary growth, and income disparity of seventy emerging nations from 1984 to 2019. A small number of studies have observed the influence of mutually monetary growth and remittances on disparity; most have simply looked at the association between remittances and disparity or the relationship between monetary growth and disparity. It was discovered that the conditional distribution of inequality is affected differently by the effects of monetary growth and remittances.

Elorabi et al. (2023) used the pooled mean group (PMG) technique to examine the effect of inbound remittances on inequality for 13 MENA countries during 1996-2020. According to this study, remittances raise income inequality, as the households received them are greatly improve their standard of living compared to other families. As a result, the report recommends tackling obstacles encountered by low-income persons who wish to move, especially in countries with high rates of unemployment. These difficulties include inequalities in knowledge, budgetary constraints, and deficiencies in education and skills. In addition, the report suggests enacting further measures to mitigate the negative impacts of remittances on income distribution, such as allocating funds to projects.

Mohamad et al. (2022) investigated the moderating role of entrepreneurship in rural development and infrastructure, as well as remittances and income inequality, employing the GMM, a dynamic panel estimator. This analysis covers 47 developing nations for the period of 2009-2017. Results indicate that there is little chance of lessening income disparity through remittances. However, if the receivers among the poor can set aside more for entrepreneurial endeavors and are further assisted by improved rural development and infrastructure, their intended role can be fulfilled. The study suggests that an efficient policy to advise remittance recipients on how to properly utilize it can improve its role in mitigating income disparity.

Pal et al. (2022) investigated the remittance invasions on financial development, joblessness, and income disparity for high, low, and middle revenue republics and used completely modified OLS estimates and fixed effects model for 1991-2020. Remittance arrivals provide a mitigating impact on income disparity, as confirmed by the income inequality model in all countries. The results demonstrated that remittance inflows help to decrease joblessness in low and middle-income countries. Kousar et al. (2019) also explored to see how financial development and remittances from outside affected deficiency and income disparity in Pakistan from 1980 to 2016. For empirical findings, the research employed the ARDL-Bounds testing approach and found that remittances have a negative impact on poverty and economic disparity in the short run. The outcome maintained the upturned U-shaped connection between per capita revenue and income disparity.

The findings of the study of Tung and Thang (2022) supported the idea that remittances reduce income disparity in eighteen developing economies from 1985 to 2019. Reduced income inequality is also aided by trade openness, economic liquidity, and foreign direct investment. Similarly, Tokhirov (2021) examined how economic disparity in the post-communist area was affected by foreign remittances using macroeconomic data from 27 countries from 1991 to 2014. They found that the majority of the countries exhibit an inverse association between remittances and inequality. Remittances worsen economic inequality when they make up more than 20% of GDP.

Song et al. (2021) investigated the impact of FDI, economic growth, and remittance inflows on income inequality. They listed liberalization of trade and financial development as possible factors influencing income disparity. They examined a section of 20 significant unindustrialized markets that receive remittances, using annual data from 1980 to 2016. The presence of a symmetry link between the variables is confirmed by empirical data from panel cointegration models. Similarly, Fang (2021) investigated the pattern of relationships between openness, remittances, and inequality in a subset of South Asia during 1976-2018. The study seems to follow a non-linear procedure of transitioning from non-stationary to motionless based on study answers with non-linear unit root tests.

Nessa (2021) looked at how remittances affected Bangladesh's economic disparity from 1990 to 2016. The assortment of the study era was founded on macro-level data availability. Since the unit root authenticates a mixture of variables, the Autoregressive

Distributed Lag (ARDL) cointegration method is used to fulfill the goal. Remittances contribute to economic inequality, but over time, they reduce it, as a 1% increase in remittances lowers income disparity by 11%. Likewise, Suleman and Cheema (2020) used pooled data to estimate a series of fixed effects and random effects models to assess the effect of overseas remittances on income inequality in Pakistan based on eight surveys of household income and spending conducted between 1998-1999 and 2015-16. The generalized entropy metric and the Gini coefficient are used to calculate income inequality, but the outcomes stay the same. It has been noted that foreign remittances reduce income inequality in a way that is statistically significant in Pakistan.

Chauvet et al. (2019) observed that aid and remittances play a vital role in income volatility and inequality. Utilizing a panel of 142 nations covering the years 1973-2012. They concluded that the lowest public are maximum vulnerable to income variations, which hurts inequality. Aid and remittances, however, do not have a noticeable direct effect on disparity. They found strong evidence that aid, but not remittances, appears to mitigate the detrimental impacts of volatility on the distribution of income.

According to Mushtaq (2017), the use of time series data on income disparity is not without controversy due to the following reasons. 1) More interpolated values than genuine ones were used. 2) Data on non-comparable inequality were employed. 3) The Gini coefficient, the sole indicator of inequality, was applied. In the following respects, their study adds to the body of Pakistani literature already in existence: first, they employ disaggregated data (i.e., data at the province level) for analysis in order to address conflicting findings regarding the effect of overseas remittances on income inequality. Second, the actual, comparable, and larger data set, 64 observations drawn from micro data sets spanning 1998-1999 to 2015-16, is used in the analysis. Majeed (2016) used a panel data set from 65 emerging economies during 1970-2015 to examine the distributional effects of overseas remittances. The study discovered that the impact of remittance disparity varies among developing nations based on the robustness of their financial system. Remittances from abroad benefit the poor by lowering inequality in developing nations with relatively established financial systems.

Garip (2014) investigated the distribution and accumulation of wealth in fifty-one rural communities in Thailand, as well as the effects of internal immigration and remittance movements. They used principal component analysis to create directories of domestic creative and customer resources using data from 5,449 families from 1994 to 2000. The results demonstrated that whereas poor households gain productive assets with migration, wealthier families lose creative belongings, possibly due to a decline in the labor force needed to sustain local economic activity.

Shahbaz et al. (2014) investigate the relationships between revenue disparity, foreign remittances, and financial development by using time series information for Pakistan from 1976 to 2006. The association between income disparity, overseas remittances, and financial development is confirmed by cointegration testing based on the limits test. Their results demonstrated that foreign remittances and income disparity both contribute to economic growth. A bidirectional causal association between income inequality and economic growth was demonstrated, and this association also held for the relationship between revenue disparity and global remittances.

Anyanwu (2011) studied the effects of refugee remittances on income disparity in African nations between 1960 and 2006. The findings indicated that remittances from overseas migrants significantly reduce income disparity. Ebeke and Goff (2011) investigate how remittances, regardless of the empirical method employed, affect revenue disparity in the republics of origin of refugees. This research shows certain traits of republics of derivation where there is a declining result of remittances on revenue disparity using a panel model of 80 evolving nations from 1970 to 2000. Likewise, Adenutsi (2011) investigated how sub-Saharan Africa (SSA)'s poverty and income inequality were affected by foreign remittances for the sample of 36 SSA nations.

Aggarwal et al. (2011) used information on remittance movements to 109 emerging nations from 1975 to 2007 to examine the association between remittances and the development of the banking sector. Specifically, they looked at the relationship between remittances and the total amount of credit and deposits that the local banking industry facilitates. They offer proof of a durable, optimistic connection between remittances and the monetary prosperity of poor nations.

Kimhi (2010) calculates the effects of interior and external remittances on income distribution in the Dominican Republic. Internal remittances have an additional pronounced unequalizing result on the people living in cities, while external remittances have a stronger opposing bordering effect on rural dispossessed families, which numbered approximately 1200 in 1992.

Keskin (2009) looked into how rural income disparity in Mexico was affected by both internal and external remittances, and they tried to figure out how that relationship changed from 1990 to 2005. Rural equality is positively impacted by both external and internal remittances, according to research on a Mexican household using income decomposition techniques. It is consistently seen that internal remittances are more equalizing than external ones, even though the external remittances gradually grow more equalizing. Leones and Feldman (1998) also assessed how job prospects and income disparity in rural locations with limited resources are affected specifically by farm and non-farm revenue (including remittances). According to their findings, the kind of non-farm revenue and the availability of non-farm jobs have an impact on income disparity.

Poprzenovic (2007) examined how remittances affected Croatia's income distribution from 1997 to 2005; the balance of payments and national household survey data served as the foundation for the argument. The findings indicated that remittances had, over time, helped the nation's income distribution become more equitable. Through the multiplier effect and a highly developed financial market, the money flows have constituted a significant and reliable source of income for the domestic economy, contributing to GDP growth. Adams Jr. (1989) also estimated that the distribution of rural income in Egypt is negatively impacted by remittance money. Higher-income rural households gain from remittance income because they are best positioned to enter overseas labor markets.

THEORETICAL FRAMEWORK AND METHODOLOGY

Remittances are the main source to increase international reserves of the low-income countries (Ali & Ismail, 2024). The inflow of remittances increases investment and consumption patterns, which boosts economic growth, but it also widens the income distribution (Ahmed et al., 2021; Farid, 2016; Shair and Anwar, 2023). Capital formation and exports are notable contributors to income disparities (Wilantari et al., 2022; Hazama, 2017; Purba et al., 2019). When people move towards the urban areas, it leads to the worsening factor of the income distribution because the migrated people earn more income than non-migrants (Akita, 2024). By integrating the above factors, the model is as follows:

$$INEQ = f(REM, CAP, URB, EX) \quad (1)$$

Where,

INEQ = Income Inequality

REM = Remittances

CAP = Gross Fixed Capital Formation

URB = Urbanization

EX = Exports

We modify equation (1)

$$INEQ = REM^{\gamma_1} CAP^{\gamma_2} URB^{\gamma 3} EX^{\gamma 4} \quad (2)$$

$$\ln INEQ = \gamma_1 \ln REM + \gamma_2 \ln CAP + \gamma_3 \ln URB + \gamma_4 \ln EX \quad (3)$$

$$\ln INEQ_{it} = \gamma_0 + \gamma_1 \ln REM_{it} + \gamma_2 \ln CAP_{it} + \gamma_3 \ln URB_{it} + \gamma_4 \ln EX_{it} + \varepsilon_{it} \quad (4)$$

Where the natural logarithm of income inequality is shown by *lnINEQ*. *However, lnCAP, lnURB, and lnEX* are shown as the natural logarithm of capitalization, urbanization, and exports, respectively. However, in model 4, the error term is as Ɛ, the term *t* and *i* depict time from 1990 to 2022, and five South Asian countries. γ_0 indicates the intercept terms; $\gamma_1, \gamma_2, \ldots, \gamma_4$ express the slope parameters of REM, CAP, URB, and EX.

To find the relationship between the mentioned variables, we have applied Panel OLS, Random Effects (RE) model, Fixed Effects (FE) model, and fully modified OLS. Pedroni Co-integration test is employed for the long-run associations. The causality test is also used to investigate the causal relationships among the variables.

Variables Description

Income inequality is considered the dependent variable. The Gini index represents income inequality, and this index evaluates how far away from being identical the income distribution among people in a country. Consequently, perfect inequality is indicated by a Gini index of 100, and the value of 0 reflects absolute equality. Muhammad et al. (2023) used this index for the quantification of this indicator. Remittances include worker compensation, which is also employed by Azizi (2021). Goss fixed capital formation is considered as investment, which comprises the purchase of plant, equipment, road construction, and similar infrastructure, such as private homes, workplaces, medical facilities, educational institutions, and manufacturing buildings. Urbanization designates the individuals who reside in metropolitan regions. Urbanization is helpful to improve the opportunities, but it also increases disparities in the distribution of income (Qiu and Zhao, 2019). All commodities and other market-related services provided to the remaining nations can be observed in exports. They omit transfer payments and employees' compensation from investments. Exports are expected to have an optimistic income inequality impact (Hazama, 2017). The details of the measurement and the source of the data are given in Table 1.

Descriptive Statistics

According to Table 2, the average value of income inequality (INEQ) is 47.535, and it ranges from 42.426 to 54.806. The highest individual values found are 111221, 35.813, 91.146, and 39.016 for remittances, capital, urban population, and Exports, respectively. On the lower end, REM, CAP, URB, and EX have minimum values of 44.160, 12.825, 60.289, and 5.1192, respectively. INEQ, REM, URB, and EX display positive skewness, but CAP exhibits negative skewness.

Correlation Matrix

The results show that remittances (REM) and capital (CAP) are positively correlated with income inequality, signifying that the increasing trends in REM and CAP are associated with more income inequality (Table 3). Furthermore, urbanization and exports also increase the unequal distribution of income.

Unit toot test

The result of the ADF and LLC stationarity tests in Table 4 implies that after applying differencing once, the series, including INEQ, REM, CAP, URB, and EX, become stationary. For the purpose of estimating co-integration procedures, this kind of stationarity is beneficial since it enhances the accuracy of parameter estimates. As INEQ, REM, CAP, URB, and EX demonstrate first-order differenced stationarity, it is essential to conduct co-integration analysis.

Table 1. Data description.

Variables	Symbol	Measuring Unit	Source
Income Inequality	INEQ	Gini index	WIID
Remittances	REM	Remittances, received (current US Dollars)	WDI
Capital	CAP	Percentage of GDP	
Urbanization	UR	% of total population	
Exports	EX	Percentage of GDP	

Table 2. Descriptive statistics.

Variables	INEQ	REM	CAP	URB	EX
Mean	47.535	13015	23.539	74.763	16.759
Median	47.053	5521.9	24.174	74.016	14.868
Max.	54.806	111221	35.813	91.146	39.016
Mini.	42.426	44.160	12.825	60.289	5.1192
Std. Dev.	2.5111	20672	5.8608	8.0554	7.8693
Skewness	0.4917	2.5474	-0.1188	0.0697	1.0273
Kurtosis	2.7602	9.1404	2.1229	1.7685	3.3852

Table 3. Correlation matrix.

Var.	INEQ	REM	CAP	URB	EX
INEQ	1				
REM	0.1507	1			
CAP	0.5019	0.3365	1		
URB	0.1731	-0.6989	0.1886	1	
EX	0.3208	-0.2019	0.2900	0.2619	1

Table 4. Unit root test.

Var.	Chi-square (ADF- Fisher)				Levin, Lin & Chu			
	I(0)		I(1)		I(0)		I(1)	
	T-value	Prob.	T-value	Prob.	T-value	Prob.	T-value	Prob.
LnINEQ	15.89	0.1077	27.50[a]	0.002	0.341	0.633	-2.479[a]	0.006
LREM	0.611	1.000	28.01[a]	0.001	1.810	0.964	-3.781[a]	0.000
LnCAP	9.936	0.446	29.921[a]	0.000	0.261	0.603	-2.592[a]	0.004
LnURB	7.072	0.718	50.27[a]	0.000	1.325	0.907	-1.464[c]	0.072
LnEX	3.750	0.958	28.97[a]	0.000	0.113	0.545	-2.850[a]	0.002

[c]p<0.10, [b]p<0.05, [a]p<0.01

RESULTS AND DISCUSSION

Results of Panel OLS

Table 5 states the regression findings of the model. The value of remittances is 0.013, which indicates that a 1% rise in REM enhances 0.013% income inequality, and this work is the same as the finding of Song et al. (2021). The elasticities of capital formation and urbanization are 0.05 and 0.20, worsening the distribution of income by 0.05% and 0.20%, and these findings are relevant (Purba et al., 2019; Wu et al., 2024). The positive value of exports (EX) shows that EX is proven as a worsening element of inequality by 0.033%, and the same consequence is related to the work of Li et al. (2022). The value of R-square is also specified as 0.68, given in Table 5.

Results of Random Effects (RE)

In Table 6, the empirics of the RE model are exhibited. Accordingly, the consequences, remittances, capital fixed formation, urban population, and exports widen the income disparities in South Asia, which means that any percent growth in REM and CAP may be responsible for 0.014% and 0.045% increase in income disparities. These conclusions are alike (Farid, 2016; and Ahmed et al., 2021). Urbanization may lead to an increase in inequality by 0.25%, and this result is the same as the finding of Akita (2024). However, the increasing trend in exports also contributes to disturbing the distribution of income by 0.024%.

Results of Fixed Effects Model

The outcomes of the fixed effects model are also summarized in Table 7. All the factors are directly related to inequalities. 0.011 is the slope parameter of remittances, which indicates that any 1% change in REM leads to 0.011% income inequality effect. These findings are also recognized by Fohoue et al. (2024) and Shair and Anwar (2023). The coefficients of a fixed formation of capital, urban population, and exports are 0.06, 0.19, and 0.014, which specify that a 1% increase in these factors causes inequality by 0.06%, 0.19%, and 0.014%, respectively. This same evidence is provided by Wilantari et al. (2022).

Results of Fully Modified OLS (FMOLS)

Table 8 exposed the empirical outcomes of FMOLS; it is revealed that, except for capitalization, all the other factors, including REM, urbanization, and EX, are increasing the disparities of income by 0.018%, 0.41%, and 0.03%, respectively. Capitalization has a negative value that indicates that CAP has an income-equalizing effect of 0.102%.

Results of Pedronic Co-integration

The results of the Pedroni co-integration test are displayed in Table 9, and it shows that income disparity, remittances, capitalization, urban population, and exports are co-integrated, as six indicators of this causality test do not reject the null hypothesis.

Results of the Causality Test

Table 10 certifies that inequality leads toward capitalization and exports to income disparity, while there is two-way causality between REM and INEQ, URB, and INEQ. This test validates the one-way direction from CAP to REM. The unidirectional causality also exists from the urban population to capital formation. The causality analysis also confirms two-way causality between CAP and REM, URB to REM, EX to REM, and EX to URB.

Table 5. Results of panel OLS.

Var.	Coeff.	Std. Error	t-Stat.	P-value
REM	0.013*	0.004	2.930	0.004
CAP	0.055*	0.019	2.759	0.006
URB	0.202*	0.066	3.032	0.002
EX	0.033*	0.009	3.339	0.001
C	2.455*	0.337	7.284	0.000
R^2	0.68			
Obs.	148			

***p<0.10, **p<0.05, *p<0.01; Dependent variable: Income inequality.

Table 6. Results of random effects.

Var.	Coeff.	Std. Error	t-Stat	Prob.
REM	0.014*	0.005	2.682	0.008
CAP	0.045***	0.023	1.885	0.061
URB	0.250*	0.078	3.209	0.001
EX	0.024**	0.011	2.311	0.02
C	2.274*	0.391	5.816	0.000
R^2	0.62			
Obs.	0148			

***p<0.10, **p<0.05, *p<0.01; Dependent variable: Income inequality.

Table 7. Results of fixed effects model.

Var.	Coeff.	Std. Error	t-Stat	Prob.
REM	0.011***	0.005	1.891	0.061
Cap	0.061*	0.023	2.622	0.010
URB	0.194*	0.078	2.467	0.014
EX	0.014**	0.012	1.199	0.023
C	2.549*	0.409	6.221	0.000
R^2	66			
Obs.	148			

*p<0.10, **p<0.05, ***p<0.01; Dependent variable: Income inequality.

Table 8. Results of FMOLS.

Var.	Coeff.	Std. Error	t-Stat	Prob.
REM	0.018	0.003	5.734	0.000
CAP	-0.102	0.012	-8.695	0.000
URB	0.418	0.185	2.256	0.026
EX	0.030	0.007	2.257	0.000
R^2	0.84			
Obs.	148			

*p<0.10, **p<0.05, ***p<0.01; Dependent variable: Income inequality

Table 9. Co-integration results.

H_1: common AR coeffs. within-dimension				
	Stat.	Prob.	Stat.	Prob.
Panel (P.) v-results	2.345*	0.009	0.074	0.470
P. rho- results	2.159	0.985	0.294	0.616
P. PP- results	1.508	0.934	-2.677*	0.003
P. ADF- results	-1.626**	0.052	-4.884*	0.000
H_1: individual AR coeffs. between-dimensions				
	Stat.		Prob.	
Group rho- results	1.876		0.969	
Group PP- results	-1.288***		0.087	
Group ADF- results	-4.474*		0.000	

***p<0.10, **p<0.05, *p<0.01

Table 10. Results of causality test.

Var.	Δ(INEQ)	Δ(REM)	Δ(CAP)	Δ(URB)	Δ(EX)
Δ(INEQ)	-	9.030*	1.205	2.314**	5.705*
Prob.	-	0.000	0.228	0.021	0.000
Δ(REM)	7.678*	-	4.865*	3.387*	3.207*
Prob.	0.000	-	0.000	0.000	0.001
Δ(CAP)	2.762*	0.286	-	-0.326	3.677*
Prob.	0.005	0.775	-	0.745	0.000
Δ(URB)	4.292*	17.71*	17.65*	-	19.74*
Prob.	0.000	0.000	0.000	-	0.000
Δ(EX)	0.647	3.999*	4.887*	6.043*	-
Prob.	0.517	0.000	0.000	0.000	-

***p<0.10, **p<0.05, *p<0.01

CONCLUSIONS

This study examined the impact of remittances on income inequality in South Asia between 1990 and 2022 using panel econometric techniques, including OLS, FE, RE, and FMOLS. The findings provide strong and significant evidence that remittance inflows are the cause of the widening income gap. Across all major estimation techniques, remittances exhibit a positive and statistically significant relationship with income disparity, indicating that households do not equally benefit from remittance inflows. The empirical findings also show that capital formation, urbanisation, and exports are other structural factors that significantly contribute to the growth of income inequality. Due to the disparity in access to economic opportunities between urban and rural populations, urbanisation has emerged as one of the most significant causes of inequality. In a similar manner, it was discovered that capital accumulation and export growth disproportionately benefited higher-income groups, escalating income inequality. The complexity of capital formation's role in income distribution is highlighted by FMOLS results, which imply that it may eventually have an equalising effect. Remittances, income inequality, and other macroeconomic variables have a long-run equilibrium relationship, according to the cointegration analysis, which suggests that these variables move in cycles over time. Additionally, the causality analysis finds both unidirectional and bidirectional causal relationships, especially a two-way causal relationship between urbanisation and inequality, and remittances and income inequality. This implies that the distribution and impact of remittance flows are influenced not only by remittances but also by the structures of inequality that currently exist.

These results are generally in line with a body of empirical research that remittances may initially help households that are comparatively better off because of migration selectivity, thus increasing the income disparity. Although remittances continue to be a significant source of foreign exchange and income for South Asian economies, their potential to foster inclusive growth is constrained by their uneven distribution. The study concludes by emphasising that remittances by themselves cannot be a successful strategy for lowering income inequality in South Asia. Remittance inflows may exacerbate rather than lessen current disparities in the absence of inclusive policies and supportive institutional frameworks. Therefore, to ensure a more equitable distribution of income, policymakers should concentrate on improving lower-income households' access to migration opportunities, encouraging the productive use of remittances, and putting in place complementary policies like financial inclusion, education, and rural development.

REFERENCES

Adams Jr, R.H., 1989. Worker remittances and inequality in rural Egypt. Econ. Dev. Cult. Change 38, 45–71.

Adams Jr, R.H., Page, J., 2005. Do international migration and remittances reduce poverty in developing countries? World Dev. 33, 1645–1669.

Adenutsi, D.E., 2011. Do remittances alleviate poverty and income inequality in poor countries? Empirical evidence from sub-Saharan Africa [Working paper]. University of Stellenbosch. https://mpra.ub.uni-muenchen.de/id/eprint/37130.

Aggarwal, R., Demirgüç-Kunt, A., Peria, M.S.M., 2011. Do remittances promote financial development? J. Dev. Econ. 96, 255–264.

Ahmed, F., Dzator, J.A., Zhang, J.X., 2021. Remittances, income inequality and investment in Bangladesh. J. Dev. Areas 55.

Akita, T., 2024. Urbanization and Income Inequality. Economics & Management Series. https://econpapers.repec.org/paper/iujwpaper/ems_5f2024_5f01.htm.

Ali, G.A., Ismail, N.A., 2024. The Impacts of Remittances on Foreign Reserves of Pakistan: Does Pakistan Suffer from Dutch Disease? Int. J. Acad. Reserach Econ. Manag. Sci. 13, 154-171.

Anwar, A., Mang, C.F., Plaza, S., 2024. Remittances and inequality: a meta-analytic investigation. World Econ. 47, 2664–2705.

Anyanwu, J.C., 2011. International remittances and income inequality in Africa. Rev. Econ. Bus. Stud. 117–148.

Azizi, S., 2021. The impacts of workers' remittances on poverty and inequality in developing countries. Empir. Econ. 60, 969-991.

Chauvet, L., Ferry, M., Guillaumont, P., Guillaumont Jeanneney, S., Tapsoba, S.J.-A., Wagner, L., 2019. Volatility widens inequality. Could aid and remittances help? Rev. World Econ. 155, 71–104.

Ebeke, C.H., Goff, M., 2011. Why Migrants' Remittances Reduce Income Inequality in some Countries and not in Others?. https://shs.hal.science/halshs-00554277/.

Elorabi, K., Ishak, S., Nor, N.M., Ibrahim, S., 2023. Do Migrant Remittances Decline Income Gap in the MENA Region? Int. J. Acad. Reserach Econ. Manag. Sci. 12, 48-62.

Fang, L., Qamruzzaman, M., 2021. An asymmetric investigation of remittance and trade openness impact on inequality: Evidence from selected South Asian countries. Front. Psychol. 12, 720887.

Farid, M., 2016. Capital formation, capital rate of return and economic inequality in Middle East and North Africa [Master's Thesis, the American University in Cairo]. AUC Knowledge Fountain. https://fount.aucegypt.edu/etds/262/.

Fohoue, U., Jiangsu, W., X., Momoh, B., 2024. The Impact of International Trade on Income Inequality: The Case of Germany. Market Forces, 19(1), 153-176. https://marketforcesjournal.kiet.edu.pk/index.php/marketforces/article/view/655.

Garip, F., 2014. The impact of migration and remittances on wealth accumulation and distribution in rural Thailand. Demography 51, 673–698.

Giuliano, P., Ruiz-Arranz, M., 2009. Remittances, financial development, and growth. J. Dev. Econ. 90, 144–152.

Hazama, Y., 2017. The impact of exports on income inequality in developing countries. IDE Discussion Paper, 650. https://ir.ide.go.jp/record/48863/files/IDP000650_001.pdf.

Keskin, P., 2009. Remittances and inequality in rural Mexico. http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.578.1744&rep=rep1&type=pdf.

Kimhi, A., 2010. International remittances, domestic remittances, and income inequality in the Dominican Republic. The Hebrew University of Jerusalem Discussion Paper No, 2. http://departments.agri.huji.ac.il/economics/indexe.html.

Kousar, R., Rais, S.I., Mansoor, A., Zaman, K., Shah, S.T.H., Ejaz, S., 2019. The impact of foreign remittances and financial development on poverty and income inequality in Pakistan: Evidence from ARDL-bounds testing approach. J. Asian Financ. Econ. Bus. 6, 71–81.

Kuznets, S., 1955. International differences in capital formation and financing. In Capital formation and economic growth (pp. 19-111). Princeton University Press. https://www.nber.org/system/files/chapters/c1303/c1303.pdf.

Leones, J.P., Feldman, S., 1998. Nonfarm activity and rural household income: Evidence from Philippine microdata. Econ. Dev. Cult. Change 46, 789–806.

Li, D., Wang, X., Xu, Y., Ren, Y., 2022. Analysis of export diversification and impact of globalisation on income inequality: Evidence from Asian countries. Glob. Econ. Rev. 51, 195–215.

Majeed, M.T., 2016. Distributional consequences of remittances: Evidence from sixty-five developing countries. Pakistan J. Commer. Soc. Sci. 10, 295–374.

Mallela, K., Singh, S.K., Srivastava, A., 2023. Remittances, financial development, and income inequality: A panel quantile regression approach. Int. Econ. 175, 171–186.

Mohamad, N.M., Masron, T.A., Ibrahim, H., 2022. Remittances and Income Inequality: The Moderating Effect of Entrepreneurship, Rural Development and Infrastructure. Glob. Bus. Manag. Res. 14, 179-208.

Muhammad, I., Ozcan, R., Jain, V., Ramos-Meza, C.S., Chawla, C., 2023. Retracted Article: Do drivers of renewable energy consumption matter for BRICS economies? Nexus among technological innovation, environmental degradation, economic growth, and income inequality. Environ. Sci. Pollut. Res. 30, 11321–11331.

Mushtaq, M., 2017. Distributional impact of foreign remittances in Pakistan. Pakistan Bus. Rev. 19, 320-338.

Nessa, H.T., 2021. Effects of remittances on income inequality in Bangladesh: a macroeconomic analysis. South Asian J. Soc. Stud. Econ 12, 106–118.

Pal, S., Villanthenkodath, M.A., Patel, G., Mahalik, M.K., 2022. The impact of remittance inflows on economic growth, unemployment and income inequality: An international evidence. Int. J. Econ. Policy Stud. 16, 211–235.

Poprzenovic, A., 2007. Remittances and Income Inequality in Croatia. MA diss., University of Lund, Lund. https://lup.lub.lu.se/luur/download?func=downloadFile&recordOId=1337086&fileOId=1646309.

Purba, B., Masbar, R., Maipita, I., Jamal, A., 2019. The effect of capital expenditure and gross fixed capital formation on income disparity in West Coast Region of North Sumatera, in: IOP Conference Series: Earth and Environmental Science. IOP Publishing, p. 12022. https://iopscience.iop.org/article/10.1088/1755-1315/260/1/012022/pdf.

Qiu, L., Zhao, D., 2019. Urban inclusiveness and income inequality in China. Reg. Sci. Urban Econ. 74, 57–64.

Shahbaz, M., Rehman, I.U., Mahdzan, N.S.A., 2014. Linkages between income inequality, international remittances and economic growth in Pakistan. Qual. Quant. 48, 1511–1535.

Shair, W., Anwar, M., 2023. Effect of internal and external remittances on expenditure inequality in Pakistan. Cogent Econ. Financ. 11, 2178121.

Song, Y., Paramati, S.R., Ummalla, M., Zakari, A., Kummitha, H.R., 2021. The effect of remittances and FDI inflows on income distribution in developing economies. Econ. Anal. Policy 72, 255–267.

Suleman, S., Cheema, A.R., 2020. Foreign remittances and income inequality in Pakistan: A Pooled Regression Analysis. J. Appl. Econ. Bus. Stud. 4, 237-250.

Tokhirov, A., 2021. Remittances and inequality: the post-communist region. Prague Econ. Pap. 30, 426–448.

Tung, L. Thang, P.N., 2022. Impact of remittances on income inequality: empirical evidence from emerging economies. In International Conference on Business Excellence, 287-297. Cham: Springer Nature Switzerland. https://doi.org/10.1007/978-3-031-19886-1_21.

Wilantari, R.N., Latifah, S., Wibowo, W., Al Azies, H., 2022. Additive mixed modeling of impact of investment, labor, education and information technology on regional income disparity: An empirical analysis using the statistics Indonesia dataset. Data in Brief, 45, 108619. https://doi.org/10.1016/j.dib.2022.108619.

Wu, R., Alvarado, R., Méndez, P., Tillaguango, B., 2024. Impact of informational and cultural globalization, R&D, and urbanization on inequality. J. Knowl. Econ. 15, 1666–1702.