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Impact of Remittances on the Trade Balance in the Countries of the South Asian Region



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Abstract. The present study empirically examines the relationship between trade balance and remittances in five selected countries of the South Asian Association for Regional Cooperation (SAARC). Besides the joint impact of remittances on the trade balance, the individual impact of remittances on Bangladesh, India, Sri Lanka, Pakistan, and Nepal and comparison among these countries are also provided. To conduct this analysis, annual data of 20 years from 1991–2019 were collected from World Bank and Penn World database. Pooled OLS, random effect, and fixed models are used to estimate the joint impact of remittances. Further, dummy variable interaction models are used to estimate the individual impact of remittances on five South Asian countries. Our panel regression analysis confirms the increasing impact of remittances on the trade deficit of five South Asian countries by triggering import-led consumption expenditures. Other control variables, exchange rate, foreign direct investment, investment, and human

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capital have a significantly negative impact on the trade balance. On the other hand, rent has a significant positive impact on the trade balance of SAARC countries. Dummy variable interaction model confirms the negative impact of remittances on India, Nepal, and Pakistan, while remittances have an insignificant impact on Bangladesh and Sri Lanka. The paper provides various policy implications for SAARC region.

Key words: remittances; trade balance, South Asia, panel data.

Introduction

Remittances are considered a stable source of household income in developing countries (Alferi et al., 2005). Every year South Asian migrants send a large amount of remittances (Sutradhar, 2020). South Asia receives about 10% of global remittances from 2015 to 2019. They exceed the foreign direct investment and foreign aids except for Maldives and Afghanistan. Within South Asia, India is the largest recipient globally, receiving about 360 billion USD from 2015 to 2019. Remittances are used to raise domestic savings, minimize the constraints associated with foreign exchanges and balance of payments (Sutradhar, 2020). Remittances help to reduce poverty reduction and economic development¹.

On the negative impact, it could damage the economic growth when skilled and highly educated laborers migrate, also known as brain drain (Topxhiu, Krasniqi, 2017). It also hampers economic growth through exchange rate appreciation and makes the trade sector less competitive². It adversely impacts the labor supply decision of families by increasing their preference for more leisure after receiving remittances in the form of non-labor income (Sutradhar, 2019). It also increases the inequality between families with remittances and those without remittances. Further,

remitted income is mainly spent on consumption rather than productive activities (Hasan, Shakur, 2017).

During the study period (1991–2019), Nepal has the largest remittances inflow as a share of GDP in the SAARC region (16.43%) and fifth in the world. Nepal is followed by Sri Lanka (7.36%), Bangladesh (5.92%), Pakistan (4.35%), and lastly, India (2.75%; *Fig. 1*).

However, South Asian countries have been accumulating a deficit in their trade balance during the same period. *Figure 2* shows the difference between exports and imports as a percentage of GDP.

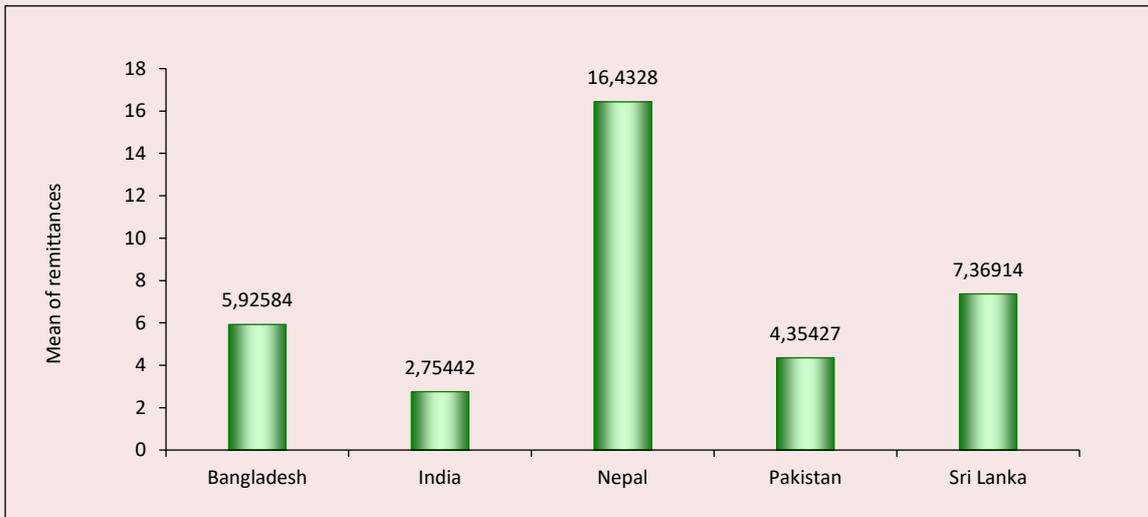
One of the possible reasons for the huge trade balance of SAARC countries is the current account deficit due to a weak export structure. South Asia has an unusual export pattern with primary exports and low intensive manufactured exports (Wood, Mayer, 2001). S. Lall (Lall, 2000) examines that South Asia suffers from the deterioration of their small share although having a substantial industrial base. Exports from South Asia are reliant on low technology. The trade deficit for a sustained period increases debt level and low sovereign credit rating, which deteriorates the future international borrowings (Hasan, 2003).

Remittances impact trade balance in different ways. First, remitted income can be consumed, invested, or saved domestically. Local domestic goods can be produced with investment and used as import substitutes, and the rest can be exported. In this way, remittances help reduce the trade deficit and assist in job creation. On the other hand, the

¹ Migration and Remittances for Development in Asia. Washington, DC: World Bank, Asian Development Bank, 2018.

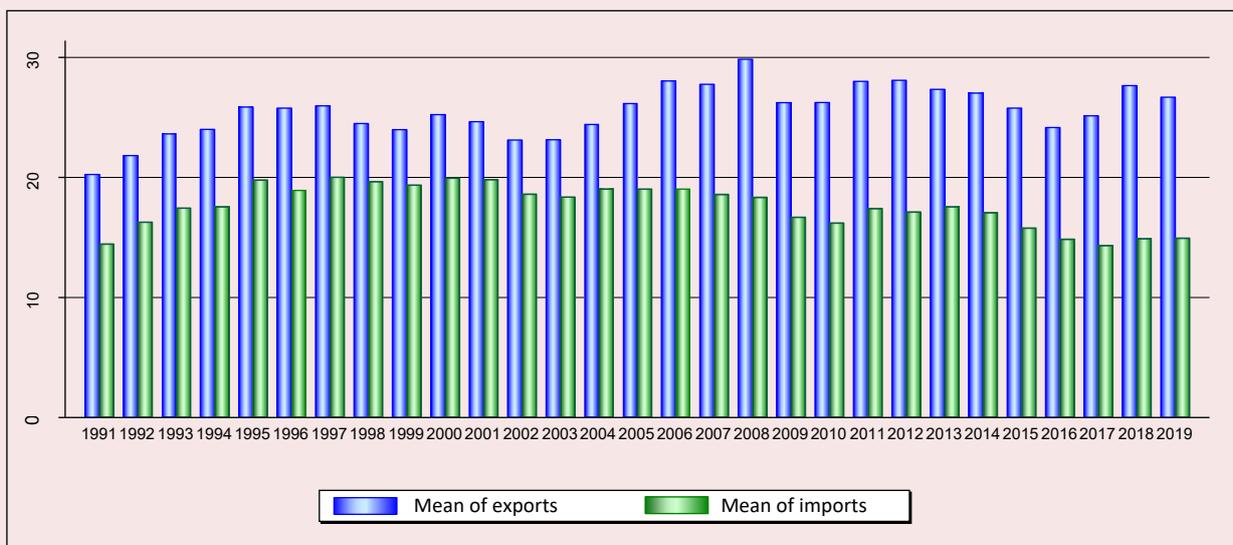
² Ratha D. (2013). The impact of remittances on economic growth and poverty reduction. Policy Brief, 8. Available at: <https://www.migrationpolicyinstitute-europe.com/research/impact-remittances-economic-growth-and-poverty-reduction>

Figure 1. Average remittance inflow in SAARC countries (1991–2019)



Source: own calculation based on World Bank data, 2021.

Figure 2. Mean of exports and imports (1991–2019)



Source: own calculation based on World Bank data, 2021.

impact of remittances on export competitiveness, exchange rate, and Dutch disease effect has been an important debate in recent years. Remitted income appreciates the local currency and might impact the long-run growth of the economy. Remittances may exhibit Dutch disease effect on the tradable sector of the economy if remittances inflow causes overvaluation of local currency. On the other hand,

remittances increase the purchasing power, and preferences towards imported goods may increase. Also, large remittances inflow reduces the labor force participation and therefore leads to adverse economic development. This fact results in the deterioration of the external balance of remittances receiving country and could worsen the overall balance of payments of the country.

The question arises at which extent remittances inflows impact the trade balance of SAARC countries. The contribution of present research is threefold: the present study empirically examines the relationship between trade balance and remittances in five selected countries of the SAARC region. To the best of authors knowledge no similar study is found in SAARC countries. Besides the joint impact of remittances on the trade balance, the individual impact of remittances on Bangladesh, India, Sri Lanka, Pakistan, and Nepal and comparison among these countries are also provided. To conduct this analysis, annual data of 20 years from 1991–2019 were collected from World Bank and Penn World database. Second, our research study follows the study by Farzanegan and Sherif (Farzanegan, Sherif, 2016), which examines how remittances affects the trade balance of Middle East and North Africa. Lastly, study examines the link between household consumption, remittances and trade balance.

The originality of this research paper is that it uses the country-specific impact of remittances and the overall impact of remittances on five countries of the SAARC region, as most of the previous research works provide only joint impact of remittances for emerging or group of developing countries. The joint impact of remittances on five SAARC countries is obtained using Pooled ordinary least square (OLS), random effects (RE), and fixed effects (FE). Then, the dummy interaction model is used to examine the separate impact of remittances of each five countries. The regression model results confirm the significant negative impact of remittances on the trade balance of five SAARC countries. The dummy variable interaction model confirms the significant negative impact of remittances on India, Nepal, and Pakistan.

The paper is structured as follows: the “Literature review” section reviews previous studies on the relationship between remittances and trade

balances. The “Theoretical model” section discusses the trade balance model. The “Methodology” section explains the variables of the model, data sources, relevant econometric model, and empirical estimation of the present study. The “Empirical results” section presents results of relevant econometric models. Lastly, “Conclusion” presents the concluding results and policy recommendations.

Literature review

This paper aims to examine the impact of remittances on the trade balances of five South Asian countries. These countries receive huge amounts of remittances each year, among which India is the top remittance receiver of the world (Sutradhar, 2019). There are various researches available on the impact of remittances. Since the present paper focuses on the trade balance, this section will review the relevant and appropriate previous studies to get a better idea about the theme of the topic.

Farzanegan and Sherif (Farzanegan, Sherif, 2016) argue that the inflow of remittances fosters the trade deficit of MENA countries, and the effect of remittances depends on domestic capital formation. The negative impact of remittances is obtained after controlling inflation, institutions, income and exchange rate, and year and country fixed effect. Khan et al. (Khan et al., 2021) examine various determinates of the trade deficit of seven SAARC countries from 1990 to 2017. Using Feasible Generalized Least Square (FGLS) and panel-corrected standard error (PCSE), the authors found a significant positive impact of domestic consumption on the trade deficit of SAARC countries. Further, infrastructure has a significant positive impact on trade deficit while exchange rate and financial deepening have a significant negative impact on the trade balance of SAARC countries.

Okodua and Olayiwola (Okodua, Olayiwola, 2013) studied the impact of remittances on the trade balance of Sub-Saharan African countries during

2002–2011. Using one-step GMM and two-step GMM, the authors found negative and significant impacts of remittances on the trade balance. The other variables that are positive and significant are the real exchange rate and GDP. Tung (Tung, 2018) examined the impact of remittances on the trade balance of 17 Asia-Pacific countries during 1980–2015. OLS, two-stage least square, and PGMM confirm the significant negative impact of remittances on the trade balance. Other variable GDP per capita growth rate has a negative impact while the exchange rate positively impacts the trade balance.

On the positive side, various studies suggest that remittances inflow does not reduce the trade balance and has no Dutch disease effect. Nguyen (Nguyen, 2017) found the positive and significant impact of remittances inflow on the trade balance of Malaysia during 1990–2015. The findings indicate no symptoms of Dutch disease. Bouhga-Hagbe (Bouhga-Hagbe, 2004) found that remittances covered almost all trade deficits and explained Morocco's current accounts surplus. Lartey (Lartey, 2018) found the positive impact of remittances on the trade balance of developing and emerging economies. However, the lagged effect of remittances is negative and could be due to underlying characteristics of Dutch disease. Further, a more flexible exchange rate dampens the positive effect of remittances on the trade balance.

Theoretical model

We follow the theoretical model of trade balance with remittances developed by Farzanegan and Sherif (Farzanegan, Sherif, 2016):

$$TB_i = (Y_i, Z_{ij}, Y_j, K_i, R_j), \quad (1)$$

where TB_i is the country trade balance of country i ; Y_i – represents the domestic income; Y_j is foreign income; Z_{ij} is the bilateral exchange rate, K_i is the capital stock of country i ; R_j shows the foreign remittances inflow from country j .

TB is positively related to the real exchange rate ($TB_i/Z_{ij} > 0$) and foreign income ($TB_i/Y_j > 0$) while negatively related to domestic income ($TB_i/Y_i < 0$), remittances ($TB_i/R_j < 0$) and capital formation ($TB_i/K_i < 0$).

Remittances of the model are treated as exogenous as its impact on imports is not direct but depends on household expenditure on imported products. Given the weak industrial sector in developing countries and are unable to provide substitutes for manufactured imports, the partial derivative of remittances to trade balance is negative. Capital stock represents an investment in physical capital and human capital. Developing countries are growing economies, have no domestic substitutes, and therefore expect a negative impact of capital stock on TB .

The impact of the exchange rate is explained in terms of the J-curve and Marshall-Lerner conditions. According to the J-curve hypothesis, depreciation worsens the trade balance in the short run. It improves in the long run if both the export supply and import demand are relatively inelastic in the long run than in the short run. Also, the Marshall – Lerner condition states that depreciation (currency devaluation) worsens the trade balance if the sum of demand elasticities of imports and exports is less than one (Akoto, 2019). In addition, domestic income is negatively related to trade balance because imports are positively impacted by domestic income. Further, foreign income stimulates the country's exports, therefore, have a positive impact on the trade balance (Falk, 2008).

The study (Farzanegan, Sherif, 2016) shows the average impact of remittances on the trade balance of Middle Eastern and North African (MENA) economies but does not show individual impact. This paper aims to examine the magnitude of remittances for five South Asian countries and their Impact in Bangladesh, India, and other countries in 1990–2019.

Methodology

Our main prediction is that remittance inflows have a negative impact on the trade balance of five SAARC countries. Our main hypothesis is that trade balance is affected by remittance-induced consumption expenditure. We tested this hypothesis by looking at two-panel regression equations, first between household final consumption expenditure and remittances and then between household final consumption and trade balance. To measure the marginal impact of remittances and other control variables, we use unbalanced panel data from 1991 to 2019, comprising 135 observations. For measuring individual marginal impacts of remittances, the paper uses the application of interaction dummies. The pooled OLS, Random effect, and fixed effect models are used for estimating equation (1). Further, a dummy interaction model is used to capture individual impacts. The descriptions of models are as follows:

$$TB_{it} = \alpha + \beta R_{jt} + \gamma' Z_{ijt} + \varepsilon_{it} \quad (2)$$

$$TB_{it} = \alpha + \pi_i + \theta_t + \beta R_{jt} + \gamma' Z_{ijt} + \varepsilon_{it} \quad (3)$$

$$TB_{it} = \alpha + \pi_i + \theta_t + \beta R_{jt} + \delta(D_i \times R_{jt}) + \gamma' Z_{ijt} + \varepsilon_{it}, \quad (4)$$

where TB_{it} is the trade balance of country i ; π_i is the time-invariant or country-specific effect; θ_t is the time effect; R_{jt} is the remittance inflow from country j . Subscript (i) represents home countries and (j) represents foreign countries ($i, j = 1, 2, \dots, N$), where. Subscript (t) represents time ($t = 1, 2, \dots, T$), where $T = 20$. ε_{it} is error term and is assumed to be independent and identically distributed (iid) with mean zero and variance 1. To reduce the omitted variable biases, we include Z_{ijt} as a vector of explanatory variables including the annual growth of GDP as a proxy of domestic income, a weighted average of GDP growth rate for the other four SAARC countries as a measure of foreign income (Farzanegan, Sherif, 2016), a real exchange

rate as a ratio of domestic currency to a weighted average of foreign currencies, in addition, we use domestic credit to the private sector as a measure of a country's financial sector development to capture the effect of saving channels and degree of export competitiveness (Ramirez, Sharma, 2008). Further, we include nature resource rents to capture the impact of natural resource exploitation, which constitutes a large share of exports in resource-rich countries. The human index as human capital per worker based on an average year of schooling and returns to education is used as a proxy of human capital and the role of education. The inflation rate is used as a proxy of macroeconomic stability (Barro, Sala-i-Martin, 2004). In addition, we use foreign direct investments (FDI) inflow to capture the impact of FDI that can encourage the country to develop infrastructure and FDI-led export growth strategies (Pfaffermayr, 1996). The description of variables and their data sources are presented in *Table 1*.

To capture the omitted variable that arises due to heterogeneity across different cross-sections, a fixed-effect model can reduce the omitted variable bias of country-specific factors. There are chances of endogeneity problems in the trade balance model as high chances of reverse feedback from trade deficit on independent variables like investment and remittances. Both are measured as a percentage of GDP. Trade deficit may shape the GDP and therefore can aid as a denominator to remittances and independent investment variables. The problem of endogeneity can solve by using a generalized method of moments (GMM) estimation and instrumental variables (IV). However, both methods are biased when the sample size is small. The present study has not had such a large sample to use GMM or IV estimators. The problem of endogeneity can be solved using the lag of independent variables. The past development of investment and remittances can affect the current values of trade deficit, but current values of trade deficit cannot affect past

Table 1. Definitions and sources of the variables

Variable	Definition	Data sources
Tb	Trade balance comprises exports of goods and services minus imports of goods and services (as a % share of GDP)	World Bank (2021)
Remittances	Personal remittances comprise personal transfers and compensation of employees (as a % share of GDP)	World Bank (2021)
Income	Annual growth of real GDP per capita	World Bank (2021)
Foreign income	Average annual growth rate of four SAARC countries	World Bank (2021)
Exchange rate	The real effective exchange rate is the nominal measure of the value of a currency against a weighted average of several foreign currencies) divided by a price deflator 2010	Penn World (2021)
FDI	Net Inflows of foreign direct investments (as a % share of GDP)	World Bank (2021)
Investment	Gross fixed capital formation (as a % share of GDP)	World Bank (2021)
Rents	Total natural resources rents (as a % share of GDP)	World Bank (2021)
Inflation	Inflation rate (GDP deflator index)	World Bank (2021)
Human capital	Index of human capital per person, based on years of schooling and returns to education	Penn World (2021)
Credit	Domestic credit to the private sector as a proxy for the financial sector development refers to financial resources provided to the private sector by financial corporations (as a share of GDP)	World Bank (2021)
Source: own calculation.		

values of investment and remittances (Bjorvatn & Farzanegan, 2013). Therefore lag of independent variables is incorporated in our study.

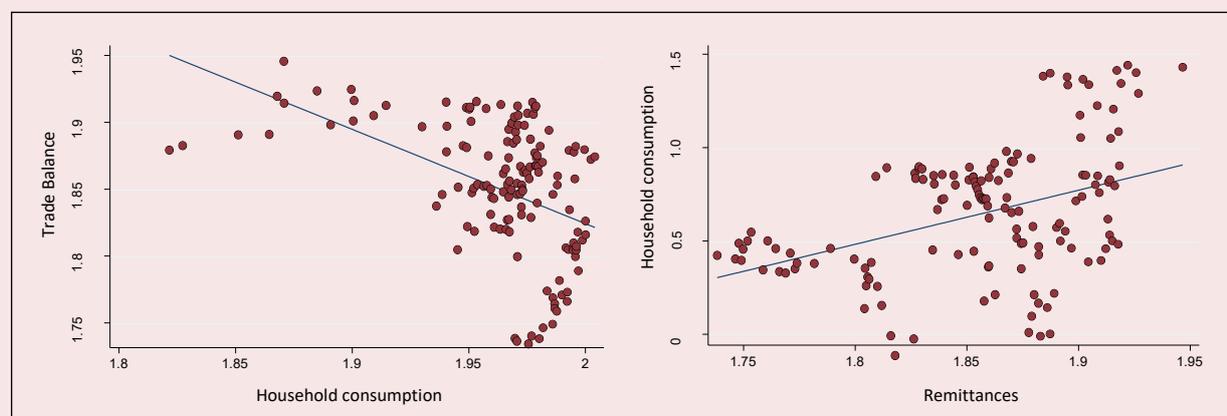
In the first step, equation (2) parameters are estimated using pooled OLS model with no country-specific and time-specific effect. Then parameters of equation (3) are then evaluated by a fixed effect model, which controls the correlation between explanatory variables and individual effects. The estimation of equation (4) is obtained through the random effect model, which assumes that individual effects are uncorrelated with explanatory variables. Time dummies are included in both random effect and fixed-effect models. In the second step, pooled OLS, RE, FE regressions are run for dummy variable interaction terms as given in equation by equation (4). Finally, necessary tests are conducted to decide which model is best among pooled OLS, RE, or FE models. The Breusch – Pagan LM test is conducted to select a model between Pooled OLS and RE models. Then to choose between FE and RE, the Hausman test is used. Finally, we get the value of F-statistics from the FE model to choose a model between Pooled OLS and FE.

Empirical results

Figure 3 presents the correlation graph between household consumption expenditure and remittances; and between trade balance and household consumption. The results confirm that remittances increase the household consumption expenditures. Further, household consumption expenditure has a negative effect on the trade balance. This implies that remittances increase domestic consumption, and an increase in consumption is full filled through imports. Therefore, the negative trade balance effect is derived from remittance-induced consumption expenditures. Our results resemble the research work of Farzanegan and Sherif (Farzanegan, Sherif, 2016).

To measure the marginal impact of remittances on the trade balance, we empirically test the hypothesis that remittances increase the inflow of imports of goods and services and raise the trade deficit. Our estimation starts by examining the impact of remittances on the trade deficit. Both trade deficits and remittances are measured as a percentage share of GDP. Also, all variables are taken in natural log form. Further, 100 is added to the log of trade deficit, i.e., $\text{Log}(100 + TB)$, as a

Figure 3. Panel regression line between: 1) household final consumption expenditures and trade balance; 2) household consumption expenditures and remittances



Sources: World Bank (2021); own calculation.

Table 2. Results of Pooled OLS, random effects and fixed effects

Variable	Pooled OLS	RE	FE
Remittances	-0.0696*** (-9.33)	-0.0827*** (-11.36)	-0.0550*** (-8.76)
Exchange rate	-0.0338** (-1.99)	-0.200*** (-6.95)	-0.0805** (-2.31)
Income	-0.00787 (-0.96)	-0.00101 (-0.07)	0.00181 (0.19)
Investment	-0.0530* (-1.92)	-0.0271 (-1.09)	-0.0741** (-2.29)
Credit	-0.00558 (-0.35)	-0.0607*** (-3.81)	0.0143 (1.09)
FDI	0.00114 (1.31)	0.000155 (0.18)	-0.00125* (-1.86)
Rent	0.0131** (2.23)	-0.0315*** (-4.13)	0.0318*** (3.37)
Inflation	-0.0180*** (-3.01)	-0.00948 (-1.55)	-0.00251 (-0.56)
Foreign income	-0.0177 (-0.90)	0.0917 (1.23)	0.0429 (0.81)
Human capital	0.166*** (5.19)	0.124*** (4.29)	-0.402*** (-4.75)
Constant	2.132*** (50.06)	2.343*** (28.84)	2.257*** (22.37)
Adj R sq	.467	.6011	.5985
Wald chi ²	298.40***	502.20***	21.38***
Time dummies		Yes	Yes
Hausman test	95.78***		
Breusch and Pagan Lagrangian multiplier test for random effects	0.00		
F-test that all $u_i=0$:	28.27***		
Observations	135		
t statistics in parentheses * p<0.10, ** p<0.05, *** p<0.01			

natural log cannot define negative values. We use one year lag of all explanatory variables to reduce the problem of endogeneity. *Table 2* reports the pooled OLS, RE, and FE results, which confirms the significant negative impact of remittances on the trade balance in South Asian countries. The result of the Breush – Pagan LM test confirms that pooled OLS is a better choice than RE. Further, the Hausman test supports FE over RE. Finally, F-test confirms the presence the unobserved heterogeneity, and therefore FE model is more appropriate than pooled OLS. So, the FE model is more appropriate among pooled OLS, RE, and FE models for our study. These results resemble the research work of Topxhiu and Krasniqi (Topxhiu, Krasniqi, 2017).

In the FE model, the adjusted R^2 is 0.5985, indicating that independent variables explain 59.85% variation in the trade balance. The results of the FE model indicate that a 1% increase in remittances leads to a 0.055% decrease in trade balance (or increases imports at the expense of exports) in South Asian countries. Both impacts of domestic income and foreign income have an insignificant impact on the trade balance. The results of remittances and income resemble the research work (Farzanegan, Sherif, 2016) for the Middle East and North Africa.

The exchange rate has a significant and negative impact on the trade balance of South Asian countries. A 1% increase in exchange rate leads to a 0.08% decrease in trade balances. The research work (Rifa et al., 2021) also verifies the negative impact of the exchange rate on the trade balance in Sri Lanka. Further, rent and credit have an insignificant impact. Investment has a negative impact, as predicted by our theoretical model. 1% increase in investment leads to a 0.074% decrease in the trade balance.

FDI has a weak negative and significant impact on the trade balance of south Asian countries. 1% increase in FDI decreases foreign trade balance by 0.001%. It is because the relationship between FDI and exports is complex. They may act as

complementary or substitutes, and it varies with time. Further, Human capital has a significant negative impact on the trade balance in South Asian countries, with a coefficient of -0.402. It is because South Asian countries have a low level of human capital, and on the other hand, imports are rising continuously (Bhattacharya, 2014). The negative coefficient of human capital is empirically validated in (Farzanegan, Sherif, 2016).

Table 3 presents the pooled OLS, RE and FE regression results for the dummy variable interaction regression model. To choose the appropriate model, we ran different post-estimation tests. The Hausman test is used to choose the appropriate model between the RE and FE model, and results confirm the FE model is a better choice. The results of the Breush – Pagan LM test supports pooled OLS over the RE model. Further F-statistics confirm unobserved heterogeneity, and the FE model is more appropriate than pooled OLS. Therefore based on post estimation tests, the FE model is more appropriate for the dummy variable interaction model. The value adjusted R^2 of FE is 0.59, and it implies that the independent variables explain 59% variation in the trade balance. Bangladesh is the base country in our dummy interaction model. The results indicate that remittances have a significant and negative impact on the trade balance of India, Nepal, and Pakistan; 1% increase in remittances leads to 0.048%, 0.089% and 0.053% decrease in trade remittances respectively. The impact of remittances on the trade balance in Bangladesh and Sri Lanka is statistically insignificant.

Conclusion

The paper examines the impact of remittances on the trade balance of five South Asian economies in 1991–2019. The correlation result confirms that remittances increase household consumption. The inability of SAARC countries to match remittance-induced consumption adds additional pressure to the trade balance by increasing consumption imports. As a result, increasing remittances in five SAARC countries is leading to higher trade deficits.

Table 3. Results of dummy variable interaction model

Trade balance	Pooled OLS	RE	FE
Remittances (Bangladesh)	0.0117 (1.34)	0.0100 (0.96)	0.0254 (1.55)
Remittances (India)	0.0416*** (3.34)	0.00371 (0.28)	-0.0483** (-2.55)
Remittances (Nepal)	-0.0810*** (-12.11)	-0.0789*** (-10.74)	-0.0890*** (-5.41)
Remittances (Pakistan)	-0.0810*** (-12.11)	-0.0518*** (-4.57)	-0.0532*** (-2.81)
Remittances (Sri Lanka)	0.00146 (0.11)	0.0727*** (3.71)	-0.0460 (-0.64)
Exchange rate	-0.0296** (-2.66)	-0.182*** (-6.29)	-0.144*** (-3.84)
Income	-0.0142** (-2.71)	-0.0112 (-1.23)	-0.00816 (-0.93)
Investment	-0.115*** (-4.21)	-0.131*** (-4.51)	-0.126*** (-4.08)
Credit	0.0261* (2.37)	-0.0128 (-1.02)	-0.00116 (-0.08)
FDI	-0.000824 (-1.33)	-0.000493 (-0.79)	-0.000713 (-1.18)
Rent	0.00513 (0.71)	0.0138 (1.65)	-0.00443 (-0.36)
Inflation	-0.00481 (-1.12)	-0.00257 (-0.57)	-0.00199 (-0.47)
Foreign income	-0.00964 (-0.76)	0.0186 (0.37)	0.0362 (0.77)
Human capital	-0.0306 (-0.59)	-0.169** (-2.94)	-0.258*** (-2.86)
Constant	2.175*** (62.00)	2.463*** (29.24)	2.402*** (24.84)
Adj R sq	0.67	0.6752	.5985
Modified Wald test	924.82***	1254.00***	11.04*****
Time Dummies	No	Yes	Yes
Hausman test (FE vs RE)	33.84***		
Breusch and Pagan Lagrangian multiplier test (OLS vs RE)	0.00		
F-test (OLS vs RE)	5.99***		
Observations	135		
t statistics in parentheses * p<0.10, ** p<0.05, *** p<0.01			

We use panel pooled OLS, random effect, fixed effect, and dummy variable interaction model to measure the marginal impact of remittances on the trade balance. Our regression results confirm a significant negative relationship between remittances and trade balance. The partial elasticity regression coefficient of remittances on the trade balance is -0.055, implying a 1% increase in remittances leads to a 0.05% decrease in the trade balance of SAARC countries. The negative

coefficient of remittances suggests that a large portion of remittances in SAARC countries are used for non-productive activities like consumption expenditures. Other control variables, exchange rate, foreign direct investment, investment, and human capital, significantly negatively impact the trade balance. On the other hand, rent has a significant positive impact on the trade balance of SAARC countries. Dummy variable interaction model confirms the negative impact of remittances

on India, Nepal, and Pakistan, while remittances have an insignificant impact on Bangladesh and Sri Lanka.

Although the dummy variable interaction model provides additional insights into this research by helping to separate the individual impact of remittances on the trade balance, however, to estimate the exact magnitude of remittances inflow through informal channels and their contribution to the trade balance of SAARC countries are beyond the scope of the paper. Further research should focus on informal channels of remittances inflow. In addition, panel data for more countries and extended periods may provide more robust results. Also, controlling more variables related to migration, brain drain, and institutional factors can be a different research topic.

The policy implications of paper applies both emerging countries as well as SAARC countries. To facilitate the productive use of remittances and promote the favorable impact of remittances on the trade balance, government and policymakers of South Asian and emerging countries should promote various financial services like remittances back bonds, saving incentives, and interest premiums on deposits remitted inflows to facilitate the savings. Further, cooperation between various international financial institutions, banks, and interested groups needs to develop cooperative schemes that facilitate savings from remittances and direct them towards manufacturing and industrial investments. This will help to boost the weak industrial sector in SAARC and emerging countries and reduce the huge trade deficits.

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