Do Remittances have a Flip Side? A Panel Cointegration Analysis of Remittances and Real Effective Exchange Rate in South Asian Countries

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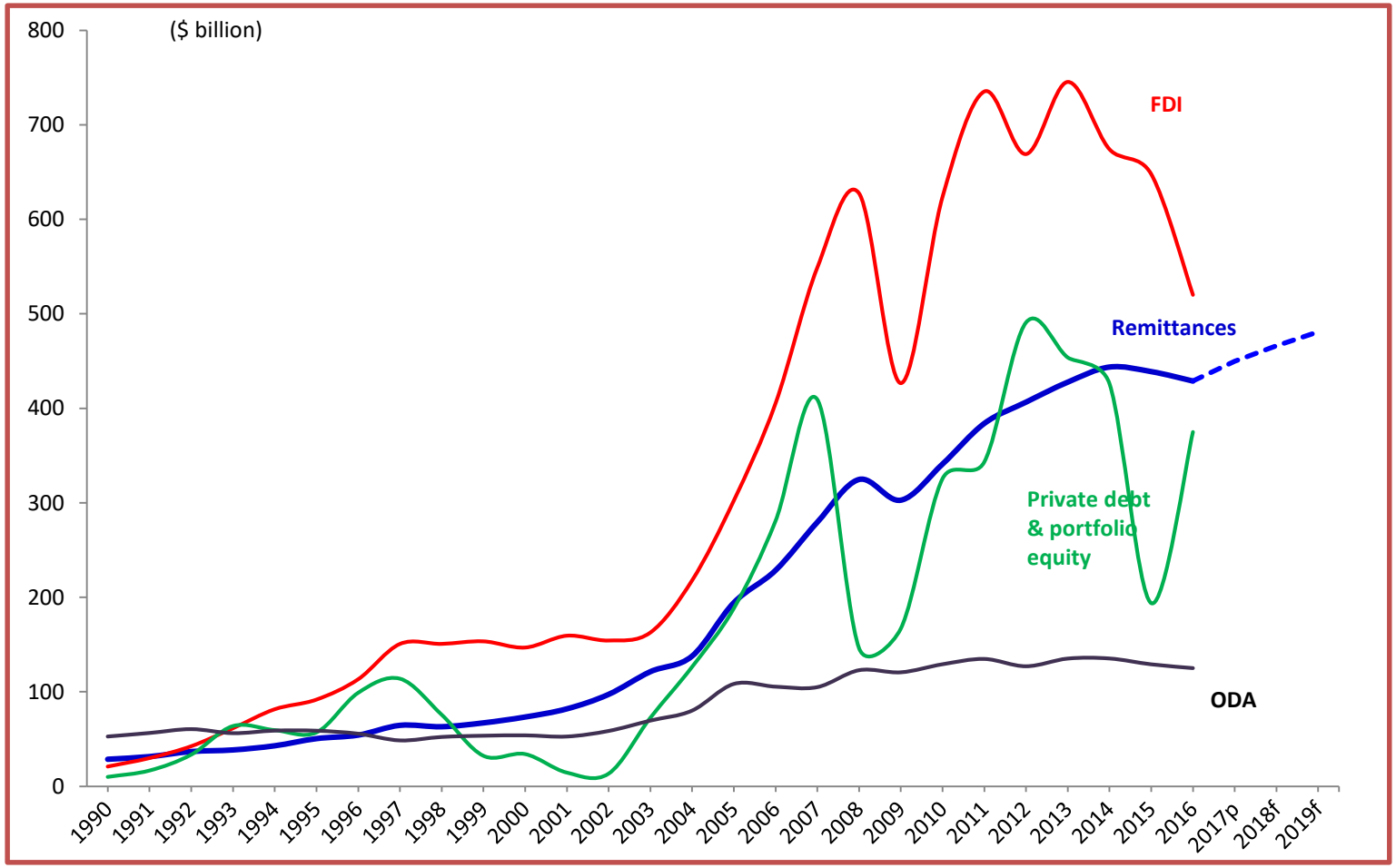
Outline

- Stylized Facts
- Development Impact
- Cost
- Two Different Mechanisms
- Literature Review
- Materials and Methods
- Results and Analysis
- Conclusion

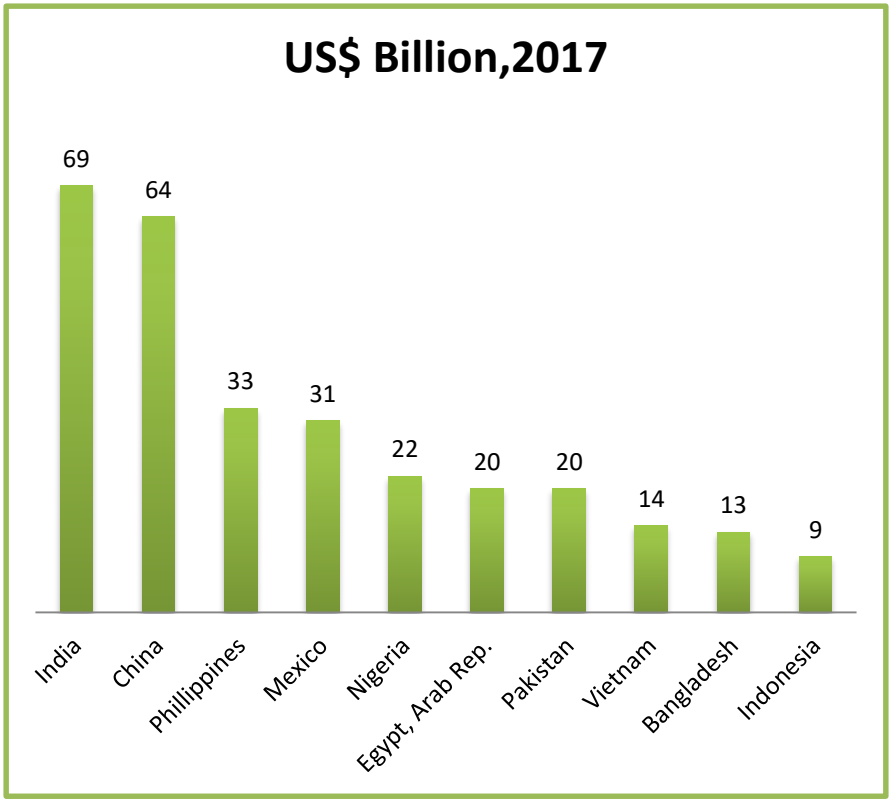
Stylized Facts

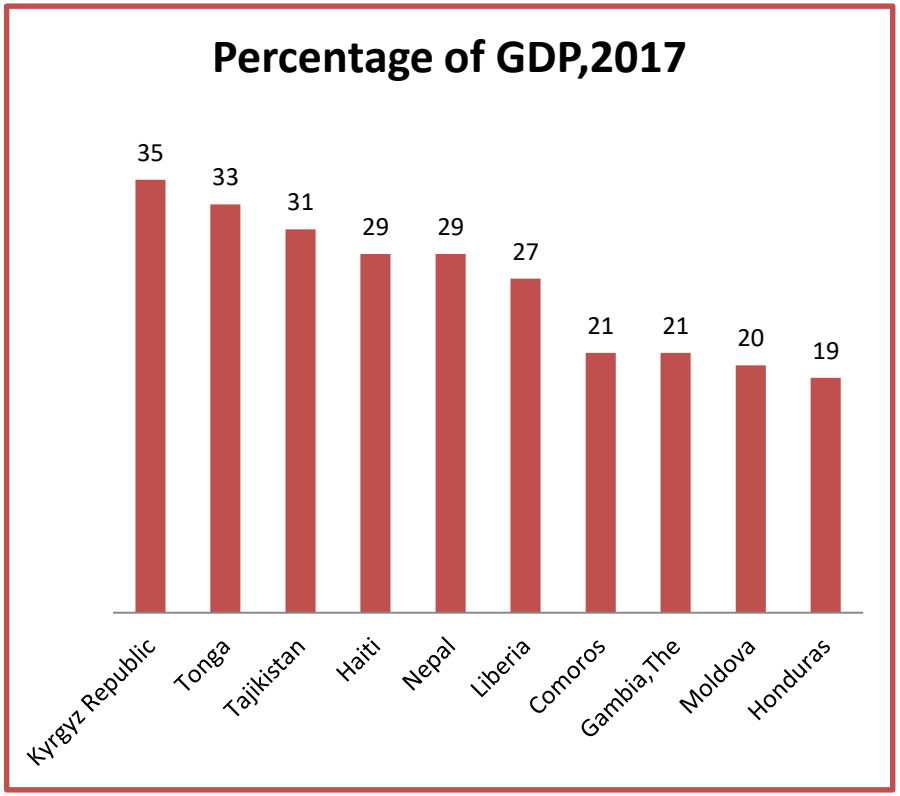
- Remittances to developing countries have increased dramatically over the years.



Source: World Bank

Top Remittance Receivers in 2017

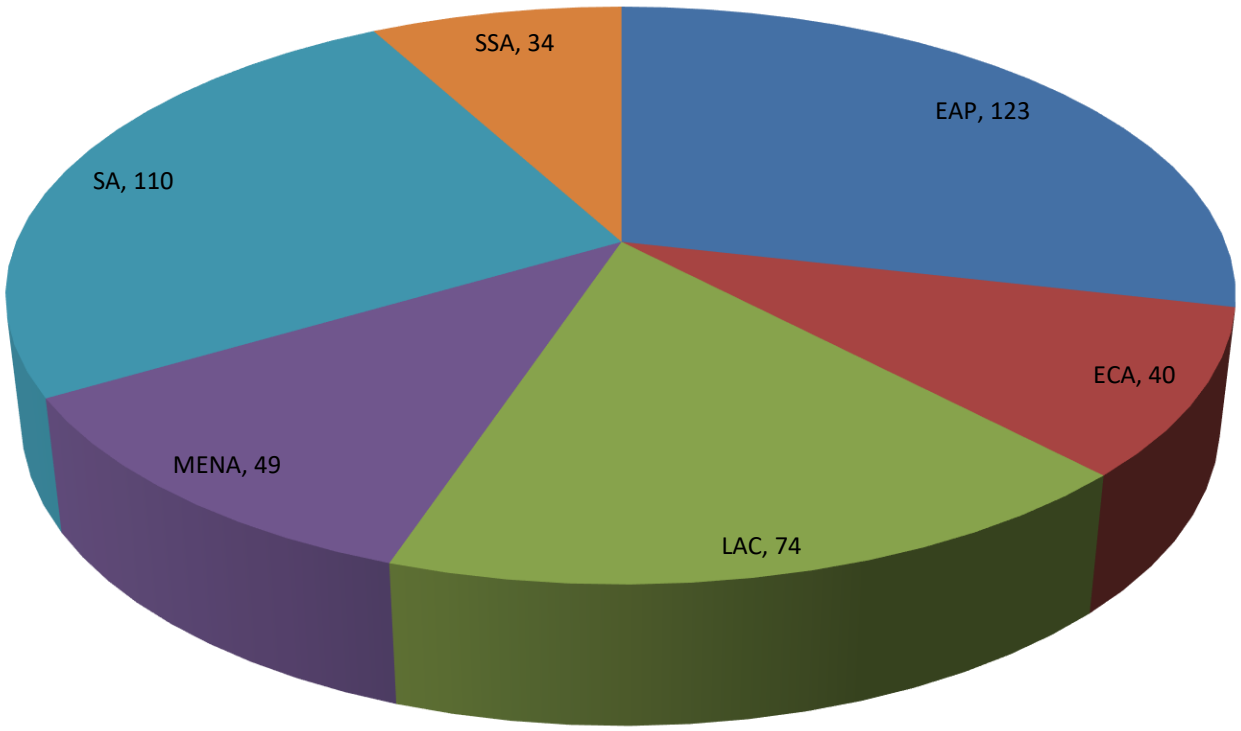




Source: Migration and Development Brief,29,World Bank

South Asia is the 2nd highest remittances recipient region in the World (US$ billion)

US$ Billion,2016



Source: Migration and development Brief,29,World Bank

Development Impact

- It is directly associated with reduction of poverty and higher rate of growth (Adams and Page, 2005; Acosta et al, 2007).
- Promote financial development, improve macroeconomic stability and reduce output volatility (Giuliano and Ruiz-Arranz 2005; Chami et al., 2009).
- Remittances enhance the welfare of migrant households by lifting their credit constraints, as seen in the Philippines (Yang 2004), thereby contributing to financial development (Aggarwal et al. 2011).
- In addition, financial inflows also lead to more entrepreneurial activities, increased human capital accumulation, and declining child labor (for information on the Philippines, see Yang 2008).

Cost/Challenges

- Social costs of migration-family disintegration and the emotional stress associated with relocation
- Brain Drain
- **Appreciation of the real exchange rate** (Amuedo-Dorantes and Pozo, 2004; López et al, 2007)
- **Reduction in labour Supply** (Acosta, Lartey and Mandelman , 2007)
- Reduce Country's competitiveness in the world markets (Obstfeld and Rogoff,1996)

Upward pressure on Real Exchange Rate: Two different Mechanism

- The first mechanism is demonstrated in the Salter-Swan-Conder-Dornbusch model. This model lays down the theoretical framework for empirically analysing the effect of inflows of capital on the real exchange rate in the developing countries. It points to a **“spending effect "**and **“resource movement effect”**. Both the spending effect and the resource movement effect put upward pressure on the local currency (Corden and Neary 1982).

- A second mechanism, discussed in Acosta, Lartey, and Mandelman (2007), is that remittances tend to increase household aggregate wealth. An increase in household wealth may lead to a decrease in labor supply as households substitute more leisure for work.

Remittances and the real exchange rate: empirical evidence

- An early study was by **Amuedo-Dorantes and Pozo (2004).** They used a panel with 13 Latin American and Caribbean countries, estimating with data drawn from the period 1978-98, and found support for the conventional view – i.e., an increase in worker remittances was associated with an appreciation of the real exchange rate in their sample.
- **Holzner (2006)** as well as **Lopez, Molina, and Bussolo (2007)** found similar qualitative result using much larger samples of countries drawn from several regions, although the quantitative impact of remittance flows on the real exchange rate found by Lopez et al were much smaller than those of Amuedo-Dorantes and Pozo.
- **Lartey, Mandelman and Acosta (2008)**, as well as **Acosta, Baerg and Mandelman (2009)** derived similar results for a much larger sample of countries (both papers used an unbalanced panel of 109 developing and transition economies with data from 1990 to 2003). However, Acosta, Baerg and Mandelman found that the effect of remittance inflows on the real exchange rate tended to decrease as the degree of financial development increased.
- An early single-country study of this type was by **Bourdet and Falck (2003).** They examined the effect of workers' remittances on the equilibrium real exchange rate in Cape Verde over the period 1980-2000 and confirmed the conventional view that an increase in remittance receipts is associated with an appreciation of the equilibrium real exchange rate. Similar results were derived by **Hyder and Mahboob (2005)** for Pakistan during 1978-2005, a **Saadi Sedik and Petri (2006**) for Jordan over 1964-2005 and **Chowdhury and Rabbi (2014)** for Bangladesh.
- By contrast, **Izquierdo and Montiel (2006)** found mixed results for six Central American countries over the period 1960-2004. In the cases of Honduras, Jamaica, and Nicaragua, they found no influence of workers' remittances on the equilibrium real exchange rate, despite the fact that these countries received very large remittance inflows over the last half of their sample. On the other hand, remittance inflows turned out to affect the equilibrium real exchange rate in the conventional direction in the Dominican Republic, El Salvador, and Guatemala.

Data and Methodology

- To understand the link between real effective exchange rate and remittances for the selected South Asian economies we have relied on following regression equation:

$$lnREER_{i,t} = \beta_0 + \beta_1 lnRemit_{i,t} + \beta_2 lnGovt.Expen_{i,t} + \beta_3 lnOpen_{i,t} + \beta_4 lnTOT_{i,t} + \beta_5 lnGDP_{i,t} + \varepsilon_{i,t} \quad (1)$$

Where,

$Remit$ is the remittances,

$Govt.Expen$ is the government expenditure,

$Open$ is the trade openness,

TOT is the net barter term of trade,

GDP is the Gross Domestic Product per capita and $\varepsilon_{i,t}$ is the random disturbances term.

Data Source and Empirical Procedure

Data Source

- To attain the objective of the study, a panel of 5 South Asian countries over the period of 1998 to 2016 has been used.
- The 5 countries considered for the analysis are India, Bangladesh, Nepal, Pakistan and Sri Lanka.
- The annual data of the following variables- remittances, government expenditure, trade openness and term of trade are collected from the World Development Indicators (WDI) of the World Bank, while the data for real effective exchange rate has been taken from UNCTAD.

Empirical Procedure

The empirical analysis of this paper is consists of the following steps:

- Initially, to identify the order of the variables, we have conducted panel unit root tests suggested by Levin et al. (2002) and Im et al. (2003).
- Subsequently, the study employed Pedroni (1999, 2004) cointegration test to examine the long run relationship among the variables of our interest.
- Finally to estimate the long run coefficient, we have used panel FMOLS (Pedroni) and DOLS (Mark and Sul, 2003) procedures, where the variations in REER is explained by remittances and some other control variables.

Panel unit root tests Results

Variables	Test	Level	First difference
REER	LLC	-0.977	-3.7953*
	IPS	0.4539	-2.9848*
Remittances	LLC	1.5260	-4.2050*
	IPS	2.5198	-3.1920*
GDP Per capita	LLC	0.7703	-4.5728*
	IPS	1.6109	-1.9481*
Trade Openness	LLC	1.4402	-7.0746*
	IPS	2.5070	-5.1430*
Government Expenditure	LLC	0.8776	-4.5235*
	IPS	0.9585	-3.0980*
TOT	LLC	0.3628	-7.5945*
	IPS	2.7793	-5.1442*

Panel Cointegration Results

Dimension	Test Statistics	Statistics	Probability
Within Dimension	Panel v-Statistic	-0.9593	0.8313
	Panel ρ-Statistic	1.2450	0.8935
	Panel t-Statistic: (non-parametric)	-3.2195	0.0006
	Panel t-Statistic (adf): (parametric)	-3.1331	0.0009
Between Dimension	Group ρ–Statistic	2.3221	0.9899
	Group t-Statistic: (non-parametric)	-2.2652	0.0118
	Group t-Statistic (adf): (parametric)	-2.2494	0.0122

FMOLS and DOLS Results

Variables	FMOLS		DOLS	
	Pooled	**Grouped**	**Pooled**	**Grouped**
Remittances	-0.0784* (-6.6254)	-0.1236* (-4.4625)	-0.0556*** (-1.8450)	-0.2563** (-2.1660)
GDP per capita	0.2463* (10.8066)	0.3680* (6.0133)	0.2089* (2.9788)	0.5164* (2.7806)
Trade Openness	-0.1368 (-7.8991)	-0.1691* (-5.0170)	-0.1255* (-3.1245)	-0.1473*** (-1.7250)
Government Expenditure	0.0576** (2.6366)	0.0194 (0.4189)	0.0673 (0.9029)	0.0328 (0.3249)
TOT	0.1448* (5.0756)	0.0805*** (1.8234)	0.2068** (2.6034)	0.0635 (0.4682)
R-squared	0.812		0.894	

Conclusion

- This study is an attempt to explore the Dutch Disease impact of remittances via real effective exchange rate in five South Asian countries over the period of 1998 to 2016.
- To attain this objective we have initially applied panel unit root test to identify the order of integration and found that all the variables are integrated of order one i.e. I (1). Subsequently the study use panel cointegartion technique along with panel FMOLS and DOLS estimators to examine the long run relationship.
- The results of Pedroni cointegration test confirm the existence of long run relationship. Accordingly the results of both FMOLS and DOLS estimators provide evidence in support of the claim that remittances put upward pressure on real effective exchange rate.
- Though many studies pointed out the positive effect of remittances on various socio economic dimension of the remittance recipient economy, policymakers should also focus on the negative effect of it.
- To deal with Dutch Disease type phenomenon, it is essential for the policymakers to channelize more remittances towards productive purposes. It is imperative to look into the utilisation of remittances inflows not only to curb Dutch Disease type phenomenon, but also to maximise the positive benefits associated with these flows.
- Policymakers should formulate policies which can directed these flows towards investments that enhanced productivity and increase supply of non-tradable sector. This type of policy will be helpful to ensure that increase in remittances will not hinder long run growth.
- Apart from this, fiscal policy also plays a significant role in curbing Dutch Disease effect. A judicious fiscal policy has the potential to reduce the “spending effect” associated with Dutch disease affect.

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Thank You

for your attention!!!