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Remittance outflows and inflation: The case of the GCC countries

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HIGHLIGHTS

- We study the effect of remittance outflows on inflation in remitting countries.
- Remittance outflows exert deflationary pressures in the sending economy.
- Remittance outflows play a stabilizing role as a tacit monetary policy.

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ABSTRACT

We examine the effect of remittance outflows on inflation in the remitting countries. The growth of remittance outflows depresses inflation rate.

1. Introduction

The literature on remittances extensively covers the effects of these monetary flows on the recipient economies. These studies include the effect of remittances on exchange rates (Amuedo-Dorantes and Pozo, 2004), employment patterns (Amuedo-Dorantes and Pozo, 2006), inflation (Narayan et al., 2011), moral hazard and economic growth (Chami et al., 2005; Giuliano and Ruiz-Arranz, 2009; Gupta et al., 2009), labor supply (Acosta et al., 2009; Naiditch and Vranceanu, 2009; Vacaflores, 2012), schooling decisions (Edwards and Ureta, 2003) and income inequality (Docquier and Rapoport, 2003).

However, the literature has widely ignored the effects of remittance outflows on the remitting economies. The main reason behind this oversight is that the size of remittances was never significant whether in terms of dollar value or as a percentage of Gross Domestic Product (GDP) for most remitting countries. While the United States (US) is the top remitter in the world with more than USD50 billion in 2010, as a share of GDP this is less than 0.5%. The Gulf Cooperation Council (GCC) countries emerge as a remarkable exception with large values of remittances in terms of both, dollar amount and share of GDP.[1] Table 1 highlights the size of remittance outflows from the Gulf region with an aggregate of more than USD60 billion and an average of 7.5% of the GDP. The GCC countries consistently rank among the top ten remitters in the world (Ratha et al., 2011). The significant amount of remittance

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[1] GCC countries are Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and the United Arab Emirates.

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Table 1
Size of remittance outflows (2010).
Source: World Bank (2010).

Country	Value (USD billion)	Share of GDP (%)
Bahrain	1.6	7.0
Kuwait	11.0	8.9
Oman	5.7	7.8
Qatar[a]	8.9	11.0
Saudi Arabia	27.0	6.1
United Arab Emirates[b]	8.6	4.5
Mean	10.5	7.5
Aggregate	62.8	–

[a] Data for Qatar are for 2009 from Endo and Afram (2011).
[b] Data for the UAE are for 2007 from the Arab Monetary Fund (2012).

outflows from the Gulf region has been largely fueled by a surging influx of foreign workers. This foreign labor base represents more than 50% of the population across the Gulf region (Naufal, 2011).[2]

In this paper, we examine the effect of remittance outflows on inflation in the remitting countries. We contribute to the literature on remittances by examining the macroeconomic effects of remittance outflows on the remitting country. We find that remittance outflows mitigate inflationary pressure. The rest of the paper is organized as follows: In Section 2, we discuss the data and the econometric methodology. Section 3 presents the findings and some concluding remarks.

2. Data and methodology

This paper builds on the model in Narayan et al. (2011) where inflation ($\pi_{i,t}$) is expressed as a function of past inflation ($\pi_{i,t-1}$), remittance outflows ($RO_{i,t}$), a vector of explanatory variables ($X_{i,t}$), and error term ($\varepsilon_{i,t}$) as shown in Eq. (1):

$$\pi_{i,t} = \alpha_i + \beta_1\pi_{i,t-1} + \beta_2 RO_{i,t} + \beta_3 X_{i,t} + \varepsilon_{i,t}$$
$$i = 1, \ldots, N;\ t = 1, \ldots, T. \quad (1)$$

Vector X includes stylized primary variables to control for when modeling inflation. These variables consist of GDP, trade, current account, national debt, price of oil, and interest rate.[3]

We use annual data covering the period 1972–2010 for all six GCC countries. The data are obtained from the World Development Indicators (WDI) database while remittance data are from the World Bank.[4] We use the US federal funds rate for the interest rate variable since the GCC countries peg their currencies to the US dollar.[5]

Including the lagged dependent variable as an explanatory variable suggests that estimating Eq. (1) with ordinary least squares (OLS) or fixed effects (FE) is problematic due to its likely correlation with the error term. Further, a generalized method of moments is not appropriate since the number of periods (T) is larger than number of countries (N). In order to overcome this issue we present the results of an Anderson–Hsiao (AH) estimator.[6] For panels with large (T), the AH estimator performs well (Judson and Owen, 1999).

Table 2
Estimates.

	OLS	FE	AH
Inflation.L1	0.414**	0.370	0.419***
	(0.165)	(0.248)	(0.0891)
GDP	0.0208	0.00853	0.0104
	(0.0158)	(0.0213)	(0.0505)
Remittances	−0.0316**	−0.0310***	−0.0296**
	(0.0130)	(0.00696)	(0.0137)
Trade	0.00891	−0.00537	−0.00819
	(0.0150)	(0.0246)	(0.0539)
Current account	−0.0923	−0.0160	0.00935
	(0.177)	(0.187)	(0.348)
Oil price	0.000630**	0.00124*	0.00113**
	(0.000250)	(0.000493)	(0.000562)
FFR	0.000665	−3.67e−06	3.43e−06
	(0.000931)	(0.00113)	(0.00178)
N	129	129	129
R^2	0.41	0.41	–

Notes: 1. The dependent variable is log (1 + inflation/100). 2. All explanatory variables are also in logarithm with the exception of the crude oil price and the federal fund rate. 3. L1 stands for one period lag. 4. Trade is net trade in goods and services; current account is the current account balance. 5. Robust standard errors in parentheses.
* $p < 0.1$.
** $p < 0.05$.
*** $p < 0.01$.

3. Findings

Remittance outflows are considered money leakage to the remitting economies. The larger those monetary flows are the less money is available for domestic consumption (and investment), and therefore the lower the local demand is. Accordingly, we expect a negative relationship between outflows and inflation in the remitting countries. Table 2 presents the findings from OLS, FE and AH estimations.[7] The results across all three estimations are very similar indicating that current inflation is positively related to last year's inflation rate. Price of crude oil has also positive and significant impact on inflation. While the GDP's coefficient is positive, it is not significant.

Trade, current account and the federal fund rate do not seem to affect GCC's inflation. This is not surprising taking into consideration the large dependence of the GCC economies on oil as a major source of revenue. Further, the principal export good for all six countries is oil; hence trade and current account balance would depend on price of oil already reflected in the performance of the economy (GDP) and the price variables.

The main variable of interest is remittance outflows. Remittance outflows affect inflation negatively, indicating that outflows exert deflationary pressures in the sending economy. The results suggest that remittance outflows play an opposite role vis-à-vis inflation relative to remittance inflows. In the GCC countries in particular, these flows gain further importance and have subtle implications for monetary policy. In theory, while the rise in energy prices, mainly the price of oil, results in economic boom in the GCC economies, the US experiences a supply shock and a subsequent economic downturn. The Federal Reserve therefore engages in interest rate cut to curb the expected recession. As the GCC economies are closely tied to the Fed's actions, they follow its policy by cutting interest rates at home.[8] This interest rate cut would exacerbate inflation in the expanding Gulf economies and send it

[2] For more details on the flow of labor and remittance in the Gulf refer to Naufal and Genc (2012).
[3] The GCC countries do not report debt.
[4] Qatar and the UAE remittance variables in the World Bank dataset are missing. We extracted Qatar remittance data from the Quarterly Statistical Bulletin published by the Qatar Central Bank. The UAE data came from the Arab Monetary Fund online database.
[5] For more information on the quality of macroeconomic data in the UAE and the Gulf refer to Vellinga (2006).
[6] We also show the results of OLS and FE for comparison purposes.
[7] We also check for serial correlation in our estimations via the Wooldridge test for autocorrelation in panel data. Our results show that we cannot reject the null hypothesis of no autocorrelation in the estimations.
[8] All GCC currencies are pegged to the US dollar. Kuwait follows a basket of currencies with the largest weight given to the US dollar.

to an even higher level. While the Fed conducts an open market purchase to pour money in the US economy in order to enhance economic activities, the GCC economies (hypothetically) need to engage in what is like an open market sale to slow down their economies. However, given the lack of an operational government bond market in this regional economy and a less autonomous monetary policy, the staggering amount of remittances fleeing the GCC region during economic upturns seems to play a stabilizing role as a tacit monetary policy tool reducing inflationary pressure in these economies.

4. Conclusion

Unlike most studies on remittances, we investigate the impact of remittance outflows on inflation in the remitting rather than in the recipient economies. We find that the remittance outflows exert deflationary pressures on inflation in sending countries. The staggering amount of remittance outflows in the GCC countries seems to play a stabilizing role as a tacit monetary policy tool akin to the open market sales of Treasury bonds in the US.

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