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Remittances

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REMITTANCES IN LATIN AMERICA: TRENDS AND PERSISTENCE

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Abstract

This paper analyses remittances in fifteeen Latin American countries (Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Panama, Dominican Republic, Uruguay and Venezuela) by applying fractional integration methods to World Bank annual data. The start year varies from 1970 in Colombia and Venezuela to 2003 in Uruguay, while the end year is 2022 in all cases except Venezuela, for which it is 2016. The chosen approach provides evidence on trends and persistence in the series under investigation. The results indicate that the effects of shocks to remittances are transitory only in Guatemala and Honduras. This might reflect the rather stable employment and wages of migrant workers from these two countries residing in the US, cultural factors, and the relatively small values and/or low volatility of remittances to these two countries.

Keywords: Remittances; time trends; persistence; fractional integration

JEL Classification: C22, G20

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1. Introduction

Remittances have become increasingly important over time for the Latin American economies, having increased twenty-fold from 1980 to 2004, which has made Latin America their main recipient in the world together with East Asia (Acosta et al., 2006). These money transfers have played a key role in supporting investment and improving education, health and quality of life in this part of the world (Beaton et al., 2017).

The present study provides some new evidence on the behaviour of remittances in Latin America by examining World Bank annual data for fifteen countries in this geographical region, specifically Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Panama, Dominican Republic, Uruguay and Venezuela. The analysis uses fractional integration methods which shed light on the possible presence of trends in the series of interest as well as on their degree of persistence; specifically, the results provide evidence on whether shocks to the series have transitory or permanent effects, which represents crucial information to design appropriate policies aimed at maximising the benefits of these financial flows.

The chosen approach is ideally suited to obtaining such evidence since it is more general and flexible than the classical one based on the dichotomy between I(0) stationary and I(1) non-stationary series. By allowing the differencing parameter d to take any real values (fractional as well as integer ones) it encompasses a much wider range of stochastic processes and provides information on whether or not the series are mean-reverting and the effects of shocks are long-lived.

The layout of the paper is as follows: Section 2 briefly reviews

2. Literature Review

There are numerous papers analysing remittances and their economic effects. For example, Rodríguez-Caballero et al. (2021) investigated their connection with the Dutch disease in the case of Latin America, Frisancho and Parrado (2021) the impact on them of the Covid-19 pandemic, Acosta et al. (2006) and Tyburski (2023) their relationship with economic growth, and Beaton et al. (2017) their role as a macroeconomic stabiliser.

More specifically, using Balance of Payments as well as Household Survey data Acosta et al. (2006) found that remittances have a positive impact on economic growth but do not significantly reduce inequality, though they help reduce the number of poor people. Beaton et al. (2017) reported that the effects on growth of migration and remittances in Latin America and the Caribbean depend on the policies being adopted, but remittances generally reduce poverty and inequality. Rodríguez-Caballero et al. (2021) estimated heterogeneous panel data models to examine the Dutch disease in Latin America. They concluded that in some cases remittances cause the currency to appreciate, with a negative impact on growth and productivity.

Frisancho and Parrado (2021) investigated the demand for face-to-face and digital international remittance services, and the frequency with which they are used. Their panel data evidence shows that interest in the types of providers changed as a result of the mobility restrictions during the Covid-19 pandemic. In particular, there was a significant increase in the average number of searches for digital services in 2020 compared to 2019; however, this was short-lived and followed by a return to the previous levels. As for remittances as a whole, there was a drop during the pandemic, but they soon recovered thanks to the digital services component.

Tyburski (2023) estimated error-correction models to investigate the effects of remittances on tax revenues and reported that these tend to be more sizeable in the case of countries with right-wing as opposed to left-wing governments. Nevertheless, it is noteworthy that none of the above mentioned papers analyses either trends or persistence in the remittance time series data, which is instead the focus of the present study. In the following section we briefly describe the technique employed here to examine these two important features of the data.

3. Methodology

For our purposes we use methods based on fractional integration. To understand this concept, let us define a covariance stationary process [u(t), t = 0, ±1, …] as being I(0) (also called a short-memory one), if the infinite sum of its autocovariances is finite. More precisely, assuming that E[u(t)] = μ, and defining γ(u) = E[(u(t)- μ)((u(t+u)- μ)], u(t) is I(0) if:

$$\sum_{u=-\infty}^{u=\infty} \mid \gamma(u) \mid \quad < \quad \infty. \tag{1}$$

The simplest I(0) process is the white noise one, which has a constant variance and is not correlated over time, but AutoRegressive Moving Average (ARMA) models also belong to the same class.

Given the above definition, a process [x(t), t = 0, ±1, …] can be said to be integrated of order d or I(d) if it can be expressed as:

$$(1 - B)^d x(t) \quad = \quad u(t), \qquad t = 1,2,\ldots, \tag{2}$$

where L stands for the lag operator, i.e. Lx(t) = x(t-1) and d is a non-integer value. In this context, if d is positive, the sum of the autocorrelations becomes unbounded, i.e.,

$$\sum_{u=-\infty}^{u=\infty} \mid \gamma(u) \mid \quad = \quad \infty. \tag{3}$$

The fractional differencing parameter d plays a crucial role. In particular, d =

4. Data and Results

The primary source of the data is the World Bank website (https://datos.bancomundial.org/indicator/BM.TRF.PWKR.CD.DT), which provides the file "*Workers' remittances and employee compensation*", reported in US dollars. The final series were obtained by adding the values of the remuneration and personal transfers of employees; these amounts are published in the Balance of Payments Manual (sixth edition), at the International Monetary Fund (IMF). We focus only on 15 Latin American countries on the basis of the data availability from these sources.

Table 1 displays some descriptive statistics for the remittance series in logs. Colombia has the longest data span (1970-2022), whilst Uruguay has the shortest (2003-2022). The maximum value ranges between 18.27 for Guatemala and 21.54 for Brazil, while the minimum one ranges between 11.65 for El Salvador and 17.80 for Venezuela. Also, Brazil exhibits the highest mean value (20.22), while Guatemala has the lowest one (16.89). The Brazilian series is also the most volatile one, its standard deviation being equal to 20.35, whilst the Guatemalan one is the least volatile, having a standard deviation equal to 16.69.

Table 1. Descriptive statistics for the logged remittance series

Series	Start year	End year	Maximum value	Minimum value	Mean	Stand. Dev.
Argentina	1978					

Panama	1980	2022	20.55	16.59	19.36

confidence intervals exceed 1. To sum up, mean reversion shocks have permanent effects. It is noteworthy that both Guatemala and Honduras heavily depend on remittances and thus one would expect fluctuations in these series to have a greater macroeconomic impact than elsewhere. The finding that they are both mean-reverting might reflect the fact that employment and wages of migrant workers from these two countries residing in the US appear to be relatively stable in comparison to those for other Latin American countries – this could explain why the effects of shocks are not long-lived and thus have a limited wider impact. Other factors that might account for the mean reversion found in these two countries but not in the others are of a cultural nature, reflecting the high percentage in Guatemala and Honduras of indigenous people who tend to have closer family ties. It is also noteworthy that mean reversion is more likely to occur in the case of variables with relatively small values (Smyth, 2013), Honduras and Guatemala displaying the lowest ones for remittances in our sample (see Table 1), and also in the case of less volatile series, (Smyth and Narayan, 2015), Guatemala exhibiting the lowest standard deviation in the sample (see again Table 1).

Our analysis could be extended to other regions of the world, such as Africa or Southeast Asia, where remittances are very important to explain economic growth. Other issues, such as non-linear trends and structural breaks could also be examined. These two issues are very relevant in the context of fractional integration (Granger and Hyung, 2001, Diebold and Inoue, 2001) and will be examined in future papers using Chebyshev--t6.11 263.09 e6.11ined.

References