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Remittances and financial development in Sub-Saharan African countries: A system approach ☆

Dramane Coulibaly

EconomiX-CNRS, University of Paris Ouest, 92001 Nanterre cedex, France

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ABSTRACT

This paper investigates the causality between remittances and financial sector development in Sub-Saharan African (SSA) countries. To this end, we employ the panel Granger causality testing approach that is based on Seemingly Unrelated Regressions (SUR) multivariate systems and Wald tests with country specific bootstrap critical values. Using annual data over the 1980–2010 period for 19 SSA countries, the study gives the following results. Based on liabilities as a proxy for financial sector development, remittances positively influence financial development only in four countries (Niger, Senegal, Sierra Leone and Sudan) and financial development positively impacts remittances only in Gambia. On the contrary, considering credit to measure financial depth, the results show that remittances positively affect financial development only in Sudan and financial development does not influence remittances in any country. Consequently, there is no strong evidence supporting the view that remittances promote financial development in SSA countries and financial development seems not to be a relevant determinant of remittances received in SSA countries.

1. Introduction

During the last decades, there was a drastic increase in international remittances received in developing countries. This has led researchers to examine the development impact of remittances in various dimensions including financial development. There could exist a bidirectional causal relationship between remittances and financial development. Remittances can influence financial development through two contradictory channels (Aggarwal et al., 2011 and Orozco and Fedewa, 2005). On the one hand, remittances can promote financial development by extending credits to remittance recipients or by increasing banks' loanable funds. On the other hand, remittances can mitigate credit market development by relaxing financing constraints of remittance recipients. Conversely, as mentioned by Aggarwal et al. (2011), financial sector development can increase remittances by enabling high remittances flow or by lowering remittance sending costs. This paper contributes to the exiting literature on remittances by examining the causal relationship between remittances and financial development in Sub-Saharan African (SSA) countries.

The case of SSA countries is particularly interesting, since among the high remittance recipient countries, the SSA countries are characterized by a low level of financial development. Besides, the previous studies (Gupta et al. (2009) for 44 SSA countries and Aggarwal et al. (2011) for 99 developing countries including some SSA countries) that examine the interaction between remittances and financial development on SSA countries assume homogeneity of parameters on panel data setting, i.e. do not account for heterogeneity among countries. Moreover, these previous studies have focused on the causal link from remittances to financial development.

In this paper, the causality analysis is conducted using the panel Granger causality test approach by Kónya (2006) that is based on Seemingly Unrelated Regressions (SUR) systems and Wald tests with country specific bootstrap critical values. The use of this methodology has many advantages, particularly using a sample on SSA countries. Since it is a system approach, it has the advantage to account for both the cross-sectional dependence and the heterogeneity. Therefore, it allows testing for Granger causality on each SSA country separately by accounting for the possible cross-sectional dependance across SSA countries. Precisely, by exploiting the spatial information from by the panel data setting on SSA countries, this econometric approach allows for detecting for how many and for which SSA countries there exists one-way Granger causality, two-way Granger causality or no Granger causality. Since the assumption of no cross-sectional dependence is difficult to satisfy in a panel data (particularly in SSA countries), neglecting the potential dependence can lead to empirical results that are inconsistent (Bai and Kao, 2006). Moreover, due to country specific characteristics, the homogeneity assumption in panel data setting, even for the SSA countries, may provide misleading findings (Breitung, 2005). As also pointed out by Pesaran et al. (1999), the Generalized Method of Moments (GMM) techniques, usually employed in presence of homogenous assumption

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E-mail address: dcoulibaly@u-paris10.fr.

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on dynamic panel, can give misleading estimated parameters unless the slope coefficient is the same for all countries.

There are other advantages of the methodology of Kónya (2006). Since bootstrap critical values are computed, this methodology does not need to pretest for time-series properties. Precisely, the series under consideration may be stationary or cointegrated. Then, depending on the time-series properties of the data, they can be the level, the first difference or some higher difference. Finally, thanks to bootstrap critical values the approach of Kónya (2006) can deal with the shortcomings of small T samples. This last property is relevant of SSA countries where remittances are available only in annual calendar.

To conduct the empirical analysis, we use annual data that cover the 1980–2010 period for 19 SSA countries. These 19 countries are selected in order to get balanced panel over the period under consideration.

The results from this paper are as follows. Based on liabilities as proxy for financial development, remittances positively influence financial development only in four countries (Niger, Senegal, Sierra Leone and Sudan) and financial development positively impacts remittances only in Gambia. On the contrary, using credit as a measure of financial depth, the results show that remittances positively affect financial development only in Sudan and financial development does not influence remittances in any country. Therefore, the causal relationship between remittances and financial development differs across SSA countries and it is sensitive to the indicator of financial development. Our results also confirm that the homogeneity assumption in previous papers (Aggarwal et al., 2011 and Gupta et al., 2009), even for the SSA countries, in analyzing the relationship between remittances and financial development, can give misleading findings. Overall, there is no strong evidence supporting the view that remittances promote financial development in SSA countries and that financial development does not influence remittances.

The remainder of the paper is organized as follows. Section 2 provides the theoretical background on the relationship between remittances and home economic development, paying particular attention to financial development. The corresponding empirical literature is presented in Section 3. The econometric technique is explained in Section 4. Section 5 describes the data. The empirical results and their comments are presented in Section 6. Finally, Section 7 concludes by giving policy recommendations.

2. Review of literature on theoretical background

This section briefly presents the theoretical background on the link between remittances and economic development, with a particular focus on financial development. After presenting the theoretical background on the economic impacts of remittances, we explore in which manner home macroeconomic conditions influence remittances.

After the drastic increase in international remittances during the last decades, many studies were interested in the economic impacts of these flows. Among the studies, Chami et al. (2003) were the first to investigate the impact of remittances on economic growth. Based on the idea that remittances take place under asymmetric information and are likely to generate moral hazard problems (labor–supply decisions of individuals receiving remittances), they build a theoretical model to show that remittances can have a negative effect on economic growth in receiving countries. Other studies (Acosta et al., 2009; Amuedo-Dorantes and Pozo, 2004) also emphasize a potential negative impact of remittances on economic growth through the Dutch disease phenomenon (i.e. real exchange rate appreciation associated with decline in tradable sector).

The potential growth-enhancing impact of remittances would depend on the level of financial sector development in recipient countries. As pointed out by Giuliano and Ruiz-Arranz (2009), remittances can be a substitute of financial development by providing an alternative way to finance investment and help to overcome credit constraints. In this case, remittances can boost economic growth in countries with less developed financial systems. However, within a theoretical framework, Mundaca (2009) shows that financial intermediaries help remittances to have a large effect on economic growth, since they can channel remittances to non-receiving-agents having investment needs. In this second case, there would be a complementarity between remittances and financial development.

The stabilizing impact of remittances was also the subject of many recent papers. As mentioned in Chami et al. (2008), there exist multiple pathways through which remittances can impact output volatility, and these pathways imply contradictory effects. By enabling recipient households to smooth their consumptions and investments, remittances can reduce macroeconomic volatility in remittance-receiving countries. However, remittances may exacerbate output volatility by leading remittance recipients to undertake riskier projects, or to make less effort on their existing investment projects, causing in the end an increase in dispersion of investment returns. Ahamada and Coulibaly (2011) argues that this destabilizing impact may be avoided in presence of a well-functioning financial system that can channel remittances to non-remittance-receiving agents with investment needs and permits them to smooth their investments.

Remittances could affect financial development and this effect is unclear. On the one hand, as mentioned in Orozco and Fedewa (2005) and Aggarwal et al. (2011), money transmitted through financial system paves the way for remittance recipients to obtain other financial products. Thus, remittances can increase domestic credit if banks extend credits to remittance recipients because remittances are perceived to be significant and relatively stable. In addition, even if bank loans to remittance recipients do not rise, domestic credit may expand, since deposits of remittance flows increase banks' loanable funds. On the other hand, by relaxing financing constraints, remittances can lower credit demand and mitigate credit market development. In this case, remittances behave as a substitute for financial development.

According to the literature on the determinants of remittances, home macroeconomic conditions are among remittance determinants. As first mentioned by Lucas and Stark (1985), remittances would increase with declines in home income (GDP per capita) if migrants are altruistic, while remittance inflows would positively move with home income if these inflows are driven by self-interest motives.

As highlighted by Aggarwal et al. (2011), the level of financial development in home countries could be a macroeconomic determinant of remittances. Specially, a well-developed financial system is expected to have a positive influence on remittances received in home countries for two reasons mentioned by Aggarwal et al. (2011). Firstly, high financial development can increase remittances because better financial system enables large remittance inflows. Secondly, well developed financial systems may rise remittance inflows by reducing the costs of sending remittances. These channels through which financial development leads to higher influx of remittances are particularly relevant for self-interest remittances that are driven by investment opportunities in home country.

3. Review of empirical literature

This section presents the empirical literature corresponding to the theoretical background exposed in the previous section.

The work of Chami et al. (2003) was the first to empirically investigate the aforementioned impact of remittances on home economic growth. To this end, the authors estimate a homogeneous panel model on annual data for 113 countries (including 25 SSA countries) over the 1970–1998 period. Their results show evidence of a negative effect of remittances on home economic growth. The study of Chami et al. (2003) was followed by many other papers exploring the impact of remittances on home economic growth. Giuliano and Ruiz-Arranz (2009) empirically examine their intuition that remittances can boost economic growth in countries with less developed financial systems by being a substitute of financial development. Considering also a homogeneous panel model on annual data from 100 developing countries for the 1975–2002 period, Giuliano and Ruiz-Arranz (2009) find results confirming their idea that remittances are more growth-enhancing in