POLICY BRIEF

The Role of Mobile Money in International Remittances: Evidence from Sub-Saharan Africa

Benard Kipyegon Kirui

October 2023 / No.805

Abstract

Over the past decade, remittance flows to sub-Saharan Africa grew at an average of 12.9% and is expected to increase in the coming decade, however, the high cost of remittances remains a constraint that limits regular remittance flows. About 9.1 percent of remittance flows to sub-Saharan Africa is absorbed by transfer cost making it the most expensive remittance recipient region. With evidence that mobile money services reduce transaction costs for internal remittances, the introduction of mobile money services in international remittances should have the same effect. Against this backdrop, this study investigates the effect

of introduction of mobile money services on international remittance transfer costs and determine the effect of international remittance transfer costs on international remittance flows. Least squares dummy variable model and a system GMM is applied to address the first and second objective, respectively. International remittance transfer cost is lower by 46% for corridors that incorporate mobile money in international money transfer channels compared to those that do not. Controlling for other factors, the gap between corridors that incorporate mobile money and those that do not goes down to 11.5%. Thus, a reduction in remittance transfer costs can be achieved by improving cross border mobile money services interoperability.

Introduction

Over the past decade, remittance flows to Sub-Saharan Africa grew at an average of 12.9 percent from $4.8 billion in 2000 to $48 billion in 2019 (World Bank, 2017; World Bank, 2020). Although global remittance flows are expected to increase in the coming decade in line with the expected increase in within and across borders migration, the high cost of remittances remains a constraint that limits regular remittance flows. In 2019, the average transfer cost for remittance flows to sub-Saharan Africa was 9.10 percent; about 33.4 percent above global remittances average price of 6.82 percent (World Bank, 2020). While promoting competition, combining money transfer operations with other financial services, innovation in technology, and operational efficiency are seen as key drivers of reduction in remittance cost; innovations in technology particularly mobile money have great potential in reducing the cost of money transfer. First, Global Findex data reveals that mobile money is rapidly expanding access to and use of financial services in sub-Saharan Africa.

Secondly, Remittance Prices Worldwide data shows that mobile money related access points, unlike traditional financial institutions & other access points, facilitate the flow of money at much lower transaction costs. Lastly, percentage of ownership of mobile accounts and the cost of international remittances for source countries exhibits a negative relationship suggesting that mobile money services is associated with lower cost of international remittances. Furthermore, mobile money services are largely limited to within the border transfers, unlike financial institutions which support both within and cross-border remittance flows. However, some remittance source countries have partly or fully integrated mobile money in international remittance transfer channels. How the integration of mobile money services in international remittance transfers have impacted on remittance costs and international remittance flows is not known. There is evidence that introduction of mobile money services in internal remittances reduced remittance transfer costs and increased remittance flows and diversity of senders (Jack and Suri, 2014). However, little is known about the effect of mobile money services on international remittance transfer cost and international remittance flows. This paper test whether incorporating mobile money services in

international remittances leads to a reduction in remittance transfer costs. This is particularly important for sub-Saharan Africa where 9.10 percent of remittance flows is absorbed by transfer costs, making it the most expensive remittance recipient region. Against this background, what are the effects of introduction of mobile money services on remittance transfer costs and international remittances?

In view of the foregoing, this study investigates the effects of introduction of mobile money services on remittance transfer costs and international remittances in sub-Saharan Africa. First, this study investigates the effect of introduction of mobile money services on international remittance transfer costs and secondly it determines the effect of international remittance transfer costs and mobile money services on international remittance flows. To achieve the first specific objective, least squares dummy variable model is used on quarterly Remittance Price Worldwide data spanning the period 2011 quarter one to 2019 quarter four. For the second specific objective, a system GMM is used on annual panel data of all source countries of remittances to sub-Saharan Africa spanning the period 2012 to 2017. The proposed estimation method for the second objective addresses three main concerns. First, the model includes a lagged dependent variable which introduces endogeneity problem. Second, in the presence of lagged dependent variable a fixed effect estimator results in inconsistent and biased estimates. Third, difference GMM can have poor finite sample properties particularly when the dependent variable is highly persistent and, under these conditions, tends to give estimated coefficients, which are biased downward.

Sub-Saharan Africa accounts for 70 percent of international remittances transactions through mobile money for the countries surveyed by the World Bank and thus provide a perfect setting to investigate how the introduction of mobile money services affect international remittance transfer costs and flows. The sample period is limited by availability of data on international bilateral remittances. This study document evidence that remittance transfer cost was lower by 46% for transactions that incorporate mobile money compared to the cost for transactions that do not incorporate mobile money, and this estimate goes down to 11.5%, when other factors that affect remittance transfer costs are controlled for. Remittance flows to Sub-Saharan Africa are persistent and remittance cost do not matter.

This study is important in several ways. First, United Nations Sustainable Development Goals (UN SDGs) target of reducing global average cost of sending remittances to 3 percent by 2030 is only attainable if effective strategies of reducing the costs of money transfer are identified and implemented. Second, transfer costs have a negative effect on remittance flows (Freund and Spatafora, 2008; Gibson, McKenzie and Rohorua, 2006) and it leads to irregular remittance flows as migrants either refrain from sending money home or else remit them irregularly. Irregular remittance flows result in suboptimal benefits. Regular and stable flows of remittances are prerequisite for maximization of benefits to the economy as it has a direct poverty-mitigating effects

(Gupta, Pattillo, and Wagh, 2009; Akobeng, 2016) and reduced harmful effects on economic growth of volatility of remittances (Imai, Gaiha, Ali and Kaicker, 2014) such as through its effect on exchange rate volatility. To ensure regular flow of remittances it is important to identify and implement strategies to reduce the cost of remittance flows.

Third, understanding how mobile money services penetration affect remittance costs and international remittances are both economically and policy relevant. High cost of money transfer reduces the remittances that reach the recipients, especially for small amounts when the cost per use has a fixed cost element. Identifying and implementing effective policies to reduce the cost of money transfer services would generate savings to migrants. For instance, reducing the cost of remittance flows in sub-Saharan Africa to the global average in 2017 would save remitters US$ 811 million. Fourth, remittances have a great potential as a source of long-term finance both for private and public sector. Remittance flows have significant development potential and has been found to increase after a disaster and therefore help in reconstruction (Bettin, & Zazzaro, 2018). Therefore, understanding the importance of mobile money services in international remittances is critical in the design of products and mechanisms to tap remittance flows.

This study contributes to two strands of literature: literature on remittance flows and the literature linking mobile money services and remittances. This study is related to the work of Freund and Spatafora (2008). While they studied the determinants of remittances, documenting evidence that recorded remittances depend negatively on transfer cost and that transfer cost are lower in highly developed financial systems; this study investigates the effects of the introduction of mobile money services on remittance transfer costs and international remittance flows. Innovations in mobile money has helped to rapidly expand financial inclusion in sub-Saharan Africa (Demirgüç-Kunt, Klapper, Singer & Van Oudheusden, 2015) and as financial inclusion expand so does the financial development. With an inverse relationship between transfer costs and financial development (Freund and Spatafora, 2008) and mobile money account ownership (see Figure 1.2), rapid expansion in mobile money services is expected to drive transfer cost down. Furthermore, money transfer services for both domestic and international remittances are shifting from traditional providers to wireless carriers who can compete for consumer market share based on technological ubiquity and low-cost services (Merritt, 2011, Darmon, Chaix & Torre, 2016).

In terms of investigation of the link between mobile money services and remittances, the papers closest to this study are those of Jack and Suri (2014) and Munyegera and Matsumoto (2016). Jack and Suri (2014) studied the effects of shocks on consumption for users and non-users of mobile money services in Kenya and found that consumption for non-users of mobile money services declined by 7 percent while the consumption of user households was unaffected. In their study, mobile money services are seen

as a mechanism that cushion households from shocks by increasing remittances received and the diversity of senders through reduced transaction costs. Munyegera and Matsumoto (2016) used a similar approach to that of Jack and Suri (2014) and investigated the impact of use or non-use of mobile money on household welfare in Uganda and found evidence that mobile money user households are more likely to receive remittances, receive remittances more frequently, and a higher amount of remittances than non-user households due to low transaction, transport, and time costs associated with mobile phone-based financial transactions.

By studying the effect of mobile money transfer services in international remittances and in a multi-country context this study departs from the work of Jack and Suri (2014) and Munyegera and Matsumoto (2016) in three ways. First, unlike this study which investigate how the introduction of mobile money services affect transaction costs and hence international remittances, Jack, and Suri (2014) and Munyegera and Matsumoto (2016) investigated the impact of use or non-use of mobile money in domestic remittances on household consumption? Second, this study complements the work of Jack and Suri (2014) and Munyegera and Matsumoto (2016) by providing cross country evidence on the effect of mobile money transfer services, however, unlike these two studies which were on domestic remittance, this study focus on international remittances as third point of departure.

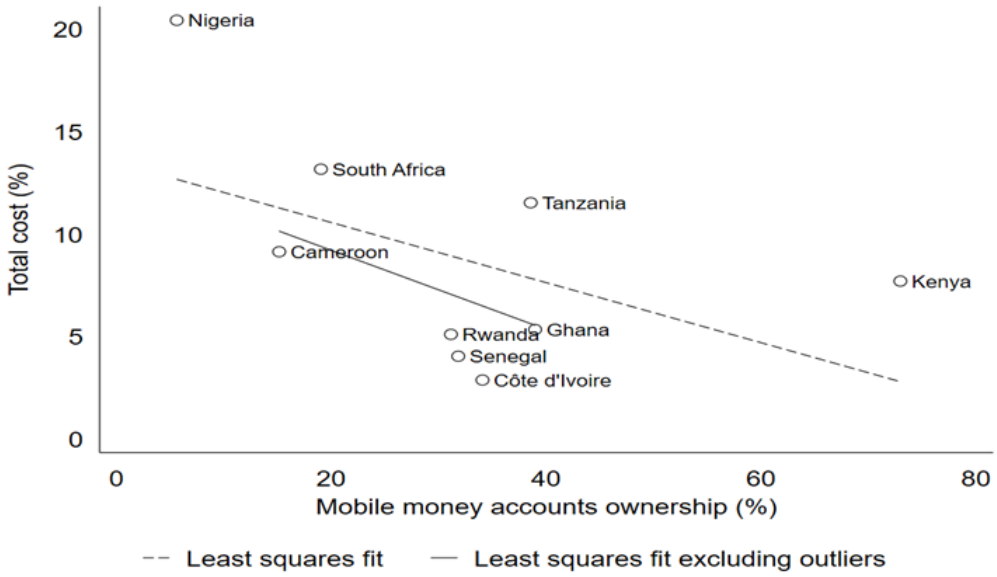
Mobile Money and Remittances in sub-Saharan Africa

According to Global Findex data, the growth in the number of accounts in traditional banking system and its usage has been outpaced by the growth in the number of accounts and use in the mobile money system. The percentage of people in sub-Saharan Africa who own an account at a financial institution expanded by 32 percent from 26 percent in 2011 to 34.2 percent in 2017. Moreover, use of accounts at financial institutions to send money expanded by 52 percent from 23 percent in 2011 to 35 percent in 2017. The use of accounts at financial institutions to receive money in 2011 was 23 percent and it increased to 33 percent in 2017. Over the same period, the use of mobile money to send money increased by 165 percent from 10.4 percent in 2011 to 27.6 percent in 2017. The use of mobile money to receive money went up by 329 percent from 13.6 percent in 2011 to 58.4 percent in 2017.

Furthermore, Remittance Prices Worldwide data reveals a consistently lower average transfer cost of sending international remittance for access points using mobile phone devices compared to access points using other access points, which include agent, call centre, internet, ATM network, Bank branch, Post Office and Post Office branch. In combination, the latter costs about twice the average transfer cost of using a mobile phone to initiate international remittance transfer. Similarly, percentage of ownership of mobile accounts and the cost of international remittances for source countries exhibits a negative relationship suggesting that the introduction of mobile

money services is associated with decrease in the cost of international remittances. Figure 1.1 plots the relationship between ownership of mobile accounts and the cost of international remittances for source countries.

Figure 1.1: Mobile money accounts ownership and the cost of international remittances



Source: Author's computation using Global Findex data and Remittance Prices Worldwide data

The dashed line in Figure 1.1 is a linear regression fit for all international remittance source countries in sub-Saharan Africa in 2017. It shows a negative relationship between mobile money account ownership and the transfer cost of international remittances. The solid line is similar to the dashed line except that it excludes outliers such as Kenya and Nigeria. Exclusion of outliers leads to steeper slope implying a stronger negative relationship.

Growth in adoption and use of mobile money is not limited to domestic remittances, its use has also been introduced in international remittances. In 2018, US $ 4.3 billion of international remittances was transacted through mobile money enabled platform (GSMA, 2019). In addition, access point data shows increased availability of mobile phone contact points for senders to initiate international remittance transfers. Access point is defined as the point where transaction can be initiated by the sender and it include: agent, bank branch, post office, internet, mobile phone, and call centre. Remittance Prices Worldwide data shows use of mobile money in international remittances is still limited with its use for initiating international remittance transfers averaging about 2% between 2017 and 2019. Availability of mobile phone option to initiate international remittance transfers grew from about 0.75% in 2016Q2 to 2.71% in 2018Q1 before declining to 1.74% in 2019Q3.

Mobile money services and remittances

Mobile money services started in Kenya in 2006 and rapidly expanded to other developing countries within Africa and Southeast Asia. Global Findex data shows that between 2012 and 2017 use of mobile money to remit money expanded by 165 percent compared to a growth of 52 percent for financial institutions. On the other hand, the use of mobile money to receive remittances grew by 329 relative to 43 percent for use of accounts in financial institutions. Two observations emerge. First, each remittance sender, on average, sends to more than one recipient and hence adoption and use of mobile money is likely to be driven by remittance senders who encourage the recipients to enrol. The former constitute mainly of migrants and the latter consists mainly of remittance recipients. Morawczynski & Pickens (2009) identified two types of users of mobile money services: urban senders and rural recipients. Urban senders are largely migrant remitting money back to their relative in rural areas.

Second, the high growth in the use of mobile money transfer services relative to the use of financial institutions money transfer services to send and receive remittances implies that money transfer services for domestic remittances are shifting from traditional providers to wireless carriers. Unlike other modes of money transfer, mobile money transfer services utilize existing infrastructures making it cheaper to provide and access. It is also easily accessible due to its strong technological ubiquity (Morawczynski & Pickens, 2009). Thus, mobile money providers can compete for consumer market share based on technological ubiquity and lower-cost services (Merritt, 2011, Darmon, Chaix & Torre, 2016).

Due to limited use of mobile money transfer services in international remittances arising from limited interoperability among other factors, most of the studies investigating the role of mobile money on remittances have focused on domestic remittances. Jack and Suri (2014) is one of the pioneering studies. They studied the effects of shocks on consumption for users and non-users of mobile money services and found that consumption for non-users of mobile money services declined by 7 percent while the consumption of user households was unaffected. In their study, mobile money services are seen as a mechanism that cushion households from shocks by increasing remittances received and the diversity of senders.

Munyegera and Matsumoto (2016) investigated the impact of use or non-use of mobile money on household welfare in Uganda and found evidence that mobile money user households are more likely to receive remittances, receive remittances more frequently, and a higher amount of remittances than non-user households due to low transaction, transport, and time costs associated with mobile phone-based financial transactions. The work of Jack and Suri (2014), and Munyegera and Matsumoto (2016) share three common features, which represent the points of departure of this study. First, the two studies treated usage of mobile money services as a means by which

migrants send or received remittances. Second, the two studies were conducted in a single country context. Third, the two studies studied domestic remittances. This study investigates the effects of the introduction of mobile money services on remittance transfer costs and international remittance flows using cross country data. Different countries in sub-Saharan Africa are at different level of penetration of mobile money and this variation allows this study to investigate the effect of introduction of mobile money services on remittance prices and international remittance flows.

Mobile money is a substitute to other channels of remitting money. Thus, standard economic theory of demand postulates that the use of mobile money to remit cash is inversely related to the ratio of the price of mobile money to the prices of other channels. Evidence from single country studies (see for instance: Jack and Suri, 2014 and Munyegera & Matsumoto, 2016) shows that introduction of mobile money reduces transaction costs, increasing remittances received and the diversity of senders. We test whether the same mechanism applies to the use of mobile money services in international remittances such that the introduction of mobile money use in international remittances should be associated with declining cost of remittances for countries that have integrated mobile money use in international remittances.

Data Sources

This study uses two datasets. The World Bank's Remittance Prices Worldwide was used to address the first objective. The Remittance Prices Worldwide database covers data collected across remittance corridors and contains money transfer firm's level variables, amounts, transfers cost, exchange rate margin, product, access point, speed of transfer and network coverage. This database contains the exchange rate spread or margin and the most visible cost of sending an amount of $200 and $500 at the initiation point. Starting from 2016, data was collected on access points available for initiating transfer transaction. Information is also collected on the length of time it takes to transfer money from sender to recipient, network coverage of each service provider, payment instrument, and receiving method. The dataset mainly covers transactions from the main sending location/area to the capital city or most populous city in the receiving market. This is a quarterly dataset containing money transfer firm level information for 365 corridors, with remittances flowing from 48 remittance sending countries to 105 receiving countries.

For the second objective, annual data from the World Bank's Remittance Prices Worldwide, World Development Indicators and Migration and Remittances database was used. The World Bank's Remittance Prices Worldwide is as described earlier. The dataset was collapsed into annual series before merging it to the World Bank's Remittance Prices Worldwide dataset. Migration and Remittances database contains data on bilateral migrant stocks and bilateral remittance flows. Development and macroeconomic control variables were obtained from the World Development Indicators. Measures of exchange rate and capital account controls were obtained from IMF's ARREAR database. The two datasets were used to generate variable of interest as presented in Table 3.1

Table 3.1: Definition and description of variables.

Variable	Description
Remittance inflows (r_{ijt})	It is measured as the log of bilateral remittances to country *i* from country *j* at time *t*
Denomination amount	It is measured in US$ for two denominations: US$ 200 and US$ 500 and converted into logs. Costs and other data were collected for sending two denominations: US$ 200 and US$ 500.
Mobile money services (m_{it})	Equals one after, at least one, money transfer firm start accepting mobile money as payment instrument and zero, elsewhere, for each bilateral remittance corridor.
Remittances transfer cost (%)	Is the fee the sender pays at the initiation point to remit money to country *i* from country *j* at time t expressed as a percentage of the amount remitted.
Exchange rate margin	Is the deviation of the exchange rate for country *j* at time t used in the remittance transaction to country *i* from the official exchange rate prevailing at time *t*
Official exchange rate	Is the log of the annual average exchange rate between the local currency of (remittance source) country *j* at time t to US dollar
Stock of migrants	Is the log of the total number of migrant workers from country i resident in country *j* at time *t*
GDP per capita (destination country)	Is the annual per capita GDP for country *i* at time *t*
GDP per capita (source country)	Is the annual per capita GDP for country *i* at time *t*
Common border	Is a dummy that equals one if source country and destination country share a common border and zero, elsewhere.
Exchange rate and Capital accounts controls	Is a dummy that equals one if exchange rate and capital account restrictions are in place in the destination country (country i) at time t and zero, elsewhere.

To construct the study sample for the second objective, this study uses the World Bank remittance matrix and migration matrix for the period 2010 to 2018 to construct bilateral remittance corridors with two additional variables: remittance amount and migrant stock. Additional variables were added from World Development Indicators using combination of source country – year for source country variables and destination country – year combination for destination country variables. Finally, the World Bank's Remittance Prices Worldwide were aggregated (mean values were used for price variables) to annual series and merged into the datasets using source country – destination country – year as merging variables. The data were filtered to only include destination countries in sub-Sahara Africa. This resulted in unbalanced panel of 59 remittance corridors with remittance records over the period 2012 to 2017, giving a total of 239 observations. All the countries with data in all the variables of interest were included in the final sample. This implies that only countries with World Bank remittance prices were included. The World Bank monitors few corridors, and this limits the merged observations with remittance transfer costs, access points and payment instruments. Quarterly World Bank's Remittance Prices Worldwide firm (money transfer) level data covering 86 remittance corridors with receiving countries in SSA for the period 2011Q1 to 2019Q4 was used to address the first objective.

Conclusion

This study investigates the effects of the introduction of mobile money services on international remittance transfer price and flows in sub-Saharan Africa. This objective was implemented as follows. The investigation of the effect of introduction of mobile money services on international remittance transfer costs is attained by use of least squares dummy variable model on quarterly Remittance Price Worldwide data spanning the period 2011Q1 to 2019Q4. To determine the effect of international remittance transfer costs and mobile money services on international remittance flows, a system GMM is used on annual panel data of all source countries of remittances to sub-Saharan Africa spanning the period 2012 to 2017.

On the Remittance Price Worldwide dataset, remittance amount exhibited little variations between transactions that incorporate mobile money and transactions that do not incorporate mobile money. However, remittance transfer cost is lower by 46% for transactions that incorporate mobile money compared to the cost for transactions that do not incorporate mobile money. The gap between the groups incorporating mobile money and those that do not goes down to 11.5%, when other factors are controlled for. Similarly, foreign exchange rate margin for transactions that incorporate mobile money is lower by 24% relative transactions that do not incorporate mobile money. On the other hand, mobile money use in international remittances is common among countries that share common borders. The use of mobile money in international remittances for corridors that share a common border is twice that of corridors that do not share a common border.

For every US $ 100 remitted US $ 7.3 is absorbed by remittance transfer cost. For the average remittance flows to SSA of US$ 91.42, the share of fixed cost is 8.1%. When the main cost component of remittance transfers is fixed cost then it is expensive to send small amounts of remittances. A reduction in the fixed cost component of remittance transfer cost will benefit remitters of small amounts than remitters of large amounts. To encourage regular remittances or increase frequency of remittances, policy should target at reducing fixed cost component of remittance transfer cost.

Except for a few countries such as Lesotho and Togo, the main source of remittance flows to SSA is outside of SSA. In 2017, intra-SSA remittances exceeded remittances from the rest of the world for 45% of the countries with recorded remittances. Furthermore, remittance received (% GDP) varied widely across SSA countries, with the highest receiving about 15% of GDP and the lowest as low as 1% or less of GDP. International remittance transfer costs and mobile money services have no effects on international remittance flows. Other key theoretical drivers of remittances such as income of the remittances receiving country, income of the migrant host country, remittance transfer costs and migrant stock do not matter in the case of remittance

flows to SSA. The evidence that corridors that incorporate mobile money faces lower remittance transfer cost by almost half compared to corridors that do not incorporate mobile money implies that improving cross border mobile money service interoperability -- linking mobile money service providers in different countries -- will lead to reduction in remittance transfer cost.

References

Adams Jr, R. H. (2009). The determinants of international remittances in developing countries. *World Development*, 37(1), 93–103.

Agarwal, R., & Horowitz, A. W. (2002). Are international remittances altruism or insurance? Evidence from Guyana using multiple-migrant households. *World development*, 30(11), 2033–2044.

Ahamada, I., and Coulibaly, D. (2011). How does financial development influence the impact of remittances on growth volatility? *Economic Modelling*, 28(6), 2748–2760.

Ahmed, J., & Martínez-Zarzoso, I. (2016). Do transfer costs matter for foreign remittances? *Economics: The Open-Access, Open-Assessment E-Journal, 10*(2016-4), 1–36.

Akobeng, E. (2016). Out of inequality and poverty: Evidence for the effectiveness of remittances in Sub-Saharan Africa. *The quarterly review of economics and finance*, 60, 207–223.

Al Mamun, M., Sohag, K., Uddin, G. S., and Shahbaz, M. (2015). Remittance and domestic labour productivity: Evidence from remittance recipient countries. *Economic Modelling*, 47, 207–218.

Anzoategui, D., Demirgüç-Kunt, A., & Martínez Pería, M. S. (2011). Remittances and financial inclusion: evidence from El Salvador. *The World Bank.*

Aydas, O. T., Metin-Ozcan, K., & Neyapti, B. (2005). Determinants of workers' remittances: the case of Turkey. *Emerging Markets Finance and Trade, 41(3)*, 53–69.

Azizi, S. (2018). The impacts of workers' remittances on human capital and labor supply in developing countries. *Economic Modelling,* 75, 377–396.

Batista, C., & Narciso, G. (2016). Migrant remittances and information flows Evidence from a field experiment. *The World Bank Economic Review*, 32(1), 203–219.

Batista, C., & Narciso, G. (2018). Migrant remittances and information flows: evidence from a field experiment. *The World Bank Economic Review*, 32(1), 203–219.

Batista, C., & Umblijs, J. (2016). Do migrants send remittances as a way of self-insurance? *Oxford Economic Papers*, 68(1), 108–130.

Bettin, G., Presbitero, A. F., & Spatafora, N. L. (2017). Remittances and vulnerability in developing countries. *The World Bank Economic Review,* 31(1), 1–23.

Bettin, G., & Zazzaro, A. (2018). The impact of natural disasters on remittances to low-and middle-income countries. *The Journal of Development Studies*, 54(3), 481–500.

Carling, J. (2008). The determinants of migrant remittances. *Oxford Review of Economic Policy, 24*(3), 581–598.

Clarke, K., & Drinkwater, S. (2001). An investigation of household remittance behaviour. *Manchester School of Economic Studies Discussion Paper, Manchester, England.*

Darmon, E., Chaix, L., and Torre, D. (2016). M-payment use and remittances in developing countries: A theoretical analysis. *Revue d'économie Industrielle, 156,* 159–183. https://doi.org/10.4000/rei.6469

Demirguc-Kunt, A., Klapper, L., Singer, D., & Van Oudheusden, P. (2015). *The global findex database 2014: Measuring financial inclusion around the world.* The World Bank.

Elbadawi, I. A., & Rocha, R. R. (1992). Determinants of expatriate workers' remittances in North Africa and Europe (No. 1038). *Country Economics Department, World Bank.*

El-Sakka, M. I., and McNabb, R. (1999). The macroeconomic determinants of emigrant remittances. *World Development, 27*(8), 1493–1502.

Freund, C., and Spatafora, N. (2008). Remittances, transaction costs, and informality. *Journal of Development Economics,* 86(2), 356–366.

Gibson, J., McKenzie, D., & Rohorua, H. T. A. S. (2006). How cost elastic are remittances? Estimates from Tongan migrants in New Zealand.

GSMA (2019). Global Mobile Money Dataset. https://www.gsma.com/mobilemoneymetrics/#global?y=2017?v=overview?g=global

Gupta, M. P. (2005). Macroeconomic determinants of remittances: evidence from India (No. 5–224). *International Monetary Fund.*

Gupta, S., Pattillo, C. A., & Wagh, S. (2009). Effect of remittances on poverty and financial development in Sub-Saharan Africa. *World development, 37*(1), 104–115.Hadi, 1999

Hagen-Zanker, J. and Siegel, M. (2007). The Determinants of Remittances: A Review of the Literature. MGSoG Working Paper No. 003. Available at SSRN: https://ssrn.com/abstract=1095719 or http://dx.doi.org/10.2139/ssrn.1095719

Imai, K. S., Gaiha, R., Ali, A., & Kaicker, N. (2014). Remittances, growth and poverty: New Evidence from Asian countries. *Journal of Policy Modeling, 36*(3), 524–538.

Jack, W., & Suri, T. (2014). Risk sharing and transactions costs: Evidence from Kenya's mobile money revolution. *American Economic Review, 104*(1), 183–223.

Kakhkharov, J., Akimov, A., and Rohde, N. (2017). Transaction costs and recorded remittances in the post-Soviet economies: Evidence from a new dataset on bilateral flows. *Economic Modelling, 60*, 98–107.

Kannan, K. P., & Hari, K. S. (2002). Kerala' gulf connection: emigration, remittances, and their macroeconomic impact, 1972–2000.

Lucas, R. E. B., and Stark, O. (1985). Motivations to Remit: Evidence from Botswana. *Journal of Political Economy*, *93*(5), 901–918. JSTOR. https://www.jstor.org/stable/1833062

Lueth, E., & Ruiz-Arranz, M. (2008). Determinants of bilateral remittance flows. *The BE Journal of Macroeconomics, 8(1).*

Merritt, C. (2011). Mobile money transfer services: the next phase in the evolution of person-to-person payments. *Journal of Payments Strategy & Systems, 5*(2), 143–160.Morawczynski & Pickens (2009)

Munyegera, G. K., & Matsumoto, T. (2016). Mobile money, remittances, and household welfare: panel evidence from rural Uganda. *World Development, 79*, 127–137.

Singh, R. J., Haacker, M., Lee, K., and Le Goff, M. (2011). Determinants and macroeconomic impact of remittances in Sub-Saharan Africa. *Journal of African Economies, 20*(2), 312–340.

Torero, M., and Viceisza, A. (2015). To remit, or not to remit: That is the question. A remittance field experiment. *Journal of Economic Behaviour & Organization, 112*, 221–236. https://doi.org/10.1016/j.jebo.2015.01.012

World Bank (2017). Remittance Prices Worldwide. Issue 21, March 2017. Available at https://remittanceprices.worldbank.org/en/resources

World Bank (2017). Remittance Prices Worldwide. Issue 24, December 2017. Available at https://remittanceprices.worldbank.org/en/resources

World Bank (2020). Remittance Prices Worldwide. Issue 36, December 2020. Available at https://remittanceprices.worldbank.org/en/resources

Yang, D. (2003). Remittances and Human Capital Investment: Child Schooling and Child Labour in the Origin Households of Overseas Filipino Workers. *Unpublished manuscript Gerald R. Ford School of Public Policy and Department of Economics. Ann Arbor: University of Michigan.*

Mission

To strengthen local capacity for conducting independent,
rigorous inquiry into the problems facing the management of economies in sub-Saharan Africa.

The mission rests on two basic premises: that development is more likely to occur where there is sustained sound management of the economy, and that such management is more likely to happen where there is an active, well-informed group of locally based professional economists to conduct policy-relevant research.

Bringing Rigour and Evidence to Economic Policy Making in Africa

- Improve quality.
- Ensure Sustainability.
- Expand influence.

www.aercafrica.org

Learn More

www.facebook.com/aercafrica

www.instagram.com/aercafrica_official/

twitter.com/aercafrica

www.linkedin.com/school/aercafrica/

Contact Us
African Economic Research Consortium
Consortium pour la Recherche Economique en Afrique
Middle East Bank Towers,
3rd Floor, Jakaya Kikwete Road
Nairobi 00200, Kenya
Tel: +254 (0) 20 273 4150
communications@aercafrica.org