



The Quest to Lower High Remittance Costs to Africa: A Brief Review of the Use of Mobile Banking and Bitcoins

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Abstract

The paper reviews the last technological tools that arguably can contribute to reducing the excessively high costs of remittance transactions in Africa. Indeed, despite huge remittance inflows to and within the continent, Africa is the most expensive destination to send money to. As remittances have become more important than Overseas Development Assistance and Foreign Direct Investment inflows in some countries, it has become crucial to explore technological advances that can contribute to reducing their transaction costs. Such reduction would enable the end beneficiaries to capture a larger share of these external resources, which in turn could have an even bigger impact on development in Africa.

In addition to revisiting the role of mobile banking in lowering remittance transaction prices, the paper takes a closer look at the newest available technology, the Bitcoin blockchain technology that underpins digital currencies. At this early stage, very few social science researchers have addressed the role that such digital currency could play in the reduction of the remittance transaction prices, except for a few innovative Bitcoin operators.

The paper proceeds as follows. It first looks at the causes of the high remittance transaction costs. Then, it reviews, presents and analyses the official remittances data downloaded from the World Bank's Remittances Prices Worldwide database. It also briefly reviews a few remittance transfer technological instruments. Given the novelty of the topic, the review of the most recent existing "literature" on Bitcoin is mainly retrieved from either on - line news sources or information from a few leading Bitcoin operators. In the light of the UN Global Working Group Post-2015 Development Agenda and Sustainable Development Goals proposal to reduce by 2030 the remittance transaction costs to even less than 3%, the effectiveness of these new technological instruments to reach such objective are discussed. Finally, a number of appropriate policy actions to foster the economic impact of remittances are proposed.

Keywords: Remittances, Mobile Banking, Bitcoins, Africa

JEL: F20, F24, F30, G21, G28, O15, O33

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1. Introduction

International remittances, the money migrants send home, have become one of the major international financial inflows to developing countries. In 2015, the official recorded remittances² are projected to reach \$440 billion,³ exceeding official development assistance flows since 1996; they are now expected to reach \$479 billion by 2017 (World Bank, 2015b). In 2012, remittances sent to and within Africa were \$60 billion, distributed almost equally between North Africa and Sub-Saharan Africa (Ratha et al., 2011). The projections by the World Bank for the subsequent years go in the same positive direction: it is expected that Middle East and North Africa (MENA) receive around \$53 billion (by the end of 2015), \$55 billion (in 2016) and \$57 billion (in 2017) and Sub-Saharan Africa (SSA) receive \$33 billion (by the end of 2015), \$34 billion (2016) and \$36 billion (in 2017).

While it has been largely claimed that remittances are used predominantly on consumption, i.e. to improve access to health, education and sanitized water, and less on investments, recent studies have shown that this assumption may not always hold true. For example, in Africa, new evidence shows that the use of remittances depends on their source (domestic, from within Africa, and from outside Africa) (for a review, see African Migration Project by the African Development Bank (AfDB) and the World Bank). However, even such studies may be questioned, as remittances are generally viewed as an extra income stream to a household, and therefore consumed in the same manner as any income stream to the household (e.g. salary, business profits, etc.). What may be looked at is whether at the margin there is any difference in how remittances are used *vis-a-vis* other income sources. Whatever may be their use, remittances are considered to be one of the tools that can contribute to reduce poverty, as they provide recipient households with extra incomes, which, in turn, increase the aggregate demand, and they are an income stream to locales, where credit and labour markets often do not work.

² Since migrants send money home also through informal and unrecorded channels, an important share of the overall remittances are not taken into account in official data. Freund and Spatafora (2005) estimated informal remittances amount to about 35-75 percent of official remittances to developing countries. Thus, not only are the actual amount of remittances unknown, but the official remittance estimates are undervalued.

³ '\$' refers to US dollars.

Regrettably, the remittance transaction cost still remains high, which, inevitably, reduces the amounts beneficiaries actually receive. This will eventually undermine the impact of remittances on inclusive growth and structural transformation. According to the Remittance Prices Worldwide database (RPW) of the World Bank, in the second quarter of 2015, the global average cost of sending money was 7.68% of the amount transferred, with the highest average cost, i.e. 9.74% of the amount transferred, in SSA.⁴ Also, perhaps surprisingly, the top ten most expensive corridors in Africa are intra-African, with a cost up to 19.35% of the amount transferred in the corridor ‘South Africa – Zambia’. In a recent study, the Overseas Development Institute (ODI, 2014) confirmed that Africa has the highest remittance transaction costs globally, which imply an annual loss of around \$1.8 billion. Such “remittance super tax” of nearly \$2 billion a year, instead of being spent in fees, may provide receivers with extra income, which would give them further opportunity to consume, save, and invest. In other words, reducing remittance transaction charges to world average levels and reaching the 5% target of the 5x5 Objective⁵ would have a real impact on poverty reduction (ODI, 2014).

This brief aims at exploring what has been put in place to reduce remittance transaction costs in Africa. Special attention is paid to new technological tools and whether they can successfully contribute to reducing transaction cost for sending remittances in Africa. The brief is organised as follows. I will first look at the causes of the remittance transaction high costs, especially in a context where the most expensive corridors are intra-African. Then, some remittance transfer technological instruments will be reviewed. Finally, in the light of the UN Global Working Group (OWG) Post-2015 Development Agenda and Sustainable Development Goals proposal to reduce by 2030 the remittance transaction costs to even less than 3%, the effectiveness of these new technological instruments to reach such objective will be discussed.

⁴ These are average costs for sending \$ 200 or the local currency equivalent. The current brief refers to such amount, as RPW database reports used in this paper refers to the same amount.

⁵ The 5x5 Objective aimed at reducing the global average costs of transferring remittances from 10% to 5% in 5 years. It was first adopted in 2009 by the G8 at its L’Aquila Summit’s G8, before the G20 committed in 2010 to a “significant reduction in the cost of remittances” and established a Development Action for Remittances. Last year in Brisbane, the G20 renewed its commitment. The RPW was launched in 2009 within such global effort to monitor the trend of the global average costs of remittance transactions.

2. Causes of the high transaction costs of remittances in Africa

The transaction costs of international remittances to and within Africa are high for several reasons. Underdeveloped financial and payment infrastructures, especially in rural areas, contribute to keep remittance prices high, since money sent and received may not circulate easily and that makes inefficient remittance services (Committee on Payment and Settlement Systems & The World Bank, 2007). Inefficient remittance services result in social costs for remittance senders and receivers, as the former may not have easy access to remittance service providers (RSPs) and the latter may not be able to collect the funds transferred in a timely manner. This relates to the underdeveloped financial system in Africa, as witnessed by its under-bankarization (the low level of access and use of formal banking services). The consequence of this will be the limited use of the financial services, which contributes to increasing remittance prices (Aggarwal, Demirgüç-Kunt, & Martinez Peria, 2006; Ratha et al., 2011).

Such an underuse of the existing formal financial infrastructures will result in a lack of transparency in the market and in a lack of competition among RSPs. The transparency issue is related to the question of whether the remittance sender is sufficiently and correctly informed on all the components of the total transaction cost (direct fee charged, exchange rate applied and any tax charged to him, on the one hand, and possible fees charged to the receiver, on the other hand) and on the speed of the transaction service (Committee on Payment and Settlement Systems & The World Bank, 2007). The lack of transparency by RSPs is the most important factor explaining high remittance prices, because it gives no chance to remitters to compare prices and to make an informed decision. Fortunately, On-line databases that offer valuable information to migrants, and help them compare RSPs' services now exist (for example RPW and Tawipay).⁶ This should positively contribute to address the lack of transparency issue. Lack of competition means that major money

⁶ The RPW database (<https://remittanceprices.worldbank.org>) monitors remittance prices across all geographic regions of the world. It was launched by the World Bank in September 2008 and remains one of the main tools used to monitor the international remittance transaction costs. Covering 227 "country corridors" that include 32 major remittance sending countries and 89 receiving countries, RPW is used as a reference to measure progress towards the "5x5" objective. Tawipay (<http://www.tawipay.com>), whose comparison website went live in August 2013, has as its mission to empower migrants with clear, transparent and complete information to help them find the best money transfer service for their needs - be it the cheapest, fastest or most convenient.

transfer operators (MTOs) in a region, namely Western Union and MoneyGram that in SSA control 2/3 of the market, are unchallenged and free to impose their own – usually high – prices (ODI, 2014; UNCTAD, 2012). Thus, there clearly exists an issue of regulatory barriers to the provision of remittance services (Committee on Payment and Settlement Systems & The World Bank, 2007). Furthermore, some African governments (for example, Tunisia, Senegal, and many countries in the African Franc Zone) put in place RSPs exclusivity arrangements⁷ that limit the institutions authorized to offer remittance services to banks and foreign exchange bureaus. This, has further reduced competition amongst RSPs (UNCTAD, 2012).

It must be argued that, although lifting or eliminating exclusivity clauses open the market's competition, as it happened in Morocco and Senegal, the remittance price reduction will not depend solely on such a policy measure. Indeed, an effective reduction of remittance transaction costs will also depend on the diversification of the market, in terms of attractive and innovative financial products and services that better meet the remittance users, i.e. senders and receivers (Épargne sans frontières, 2014). The absence of such diversified market keeps remittance prices high and encourages the use of remittance informal channels (Net Present Value Limited, 2014). Informal channels of sending money encompasses carrying cash during their visits to home, sending money through friends and relatives who travel to home or through buses and transport companies, using informal funds transfer systems such as *hawala*⁸ (Mahamoud, 2006) or even settling small trade transactions. The above mentioned diversification of the market will have a broader beneficial effect if carried out within the General principles for international remittance services (Committee on Payment and Settlement Systems & The World Bank, 2007), that assist countries to improve their remittances market by promoting transparency and competition. Indeed, the implementation of such guideline, together with other global initiatives, such as the G20 Plan to Facilitate

⁷ “Exclusivity agreements forbid domestic remittance service providers from using other transfer companies to provide international services to their customers” (Épargne sans frontières, 2014, p. 28).

⁸ The *hawala* is defined here as the informal money transfer system, where the trust amongst the agents constitutes the contract that make transfers function. The amount of money, which is transferred through a - non-formal financial - intermediary that generally speaking may not run the money transfer as a main activity, may be then collected in the same – monetary – form or in another one (GAFI, 2003; Mahamoud, 2006)

Remittances Flows (G20, 2014) and with actions performed at the country level to reform national payment systems (for example in Nigeria, Uganda or Rwanda), have contributed to lower the average global remittance prices, with a subsequent savings estimated to over US\$ 60 billion (see Figure A.2) (World Bank, 2015c). In the same vein, although the highest average cost of sending money worldwide in Q2 2015 remains 9.74% of the amount transferred in SSA, which is still much higher than the global average cost of remittance transactions (7.68%),⁹ this is much lower than the average cost in Q1 2009 (13%) when the RPW was released. Also, and – perhaps most importantly – it is the first time that such average cost goes below the psychological barrier of 10% in SSA (Figure A.1), which gives positive forecast for the years to come.

2.1. Transaction Costs of remittances to and within Africa

Migrants typically use both formal and informal channels for remitting. Remitters choose their channels, amongst others, on the basis of cost, trust, reliability and accessibility (UNCTAD, 2012). However, this paper refers to formal remittance transfer prices and to official channels. Those channels include RSPs that may be banks and non-bank financial institutions, such as *bureaux de change*, and dedicated MTOs like Western Union and MoneyGram, to name but a few. The financial or non-financial nature of RSPs, that is whether RSPs are banks, MTOs or post offices, will influence the price level of remittances, due – in part – to the different administrative costs and procedure they require. Also, the price will depend on the product through which remitters decide to send money, i.e. cash, bank account, card, etc. Thus, the average cost of sending money to and within Africa should be looked at with this in mind (World Bank, 2014b).

For example, financial institutions tend to have higher overhead costs than MTOs due to the high fixed costs related to their network of branches, automated teller machines (ATMs) and regulatory compliance requirements. Those items feed into higher remittance fees (UNCTAD, 2012). This may explain why, according to the World Bank (2014b), in the second quarter of 2014, banks were the most expensive

⁹ Data from Q3 2015 are almost unchanged: 9.78% of the amount transferred in SSA compared to 7.52% globally.

RSPs for sending money to and within Africa, with an average total cost of 18% of the transferred funds. Post offices were the cheapest RSPs of the continent (6.83%),¹⁰ followed by MTOs (7.91%). Postal systems possess numerous comparative advantages (economies of scale, affordable prices, positive network externalities and advantages of being the incumbent in a contestable market) when it comes to the financial industry (Arcand, Garbouj, & Morgandi, 2013).

As for the methods of sending money, bank accounts were the most expensive way, with an average total cost of 17.29% of the funds transferred, while the cheapest method was the mobile phone, with an average total cost of 6.30%, according to figures from the second quarter of 2014 (World Bank, 2014b). Between the two extremes, the average total costs of the other methods of sending money to and within Africa were as follows: prepaid card was estimated to 8.95%, cash services, the far most used method, was estimated to 7.81%, and the online services (especially ‘online to cash’) were estimated to 7.30% (Figure A.3). This is to say that costly problem of transferring cash via a bank or a MTO is indeed real (Figure A.4).

This said, worldwide, as highlighted before, SSA specifically remains the most expensive place for sending \$200, with an average cost of 9.74% compared to 7.68% globally, and with 3 out of 5 most expensive country corridors in the world, according to figures from the second quarter of 2015 (World Bank, 2015f). These are South Africa – Zambia (19.35%), South Africa – Malawi (17.95%), and South Africa – Botswana (17.12%). The following ones to compile the top ten most expensive corridors in SSA are Tanzania – Rwanda, Tanzania – Uganda and Tanzania – Kenya (the three corridors: 16.62%), South Africa – Angola (16.52), South Africa – Mozambique (16.22%), Ghana – Nigeria (14.48%) and South Africa – Zimbabwe (13.33%). Moreover, taken singularly, remittance costs may surpass 32%, as in the South Africa – Malawi corridor, when customers remit through bank accounts.¹¹

¹⁰ Such services are convenient when the post offices offer their own financial services. Partnering either with MTO or a financial institution will result in a sharp increase of the remittance transaction cost (Arcand et al., 2013)

¹¹ The most expensive corridors with South Africa as a sending country may be due to the controls on capital outflows in such country (OECD, 2010; USA international Business, 2011). Indeed, “every single transaction in South Africa that involves a movement of money into or out of the country is regulated by the exchange controls. There are no exceptions – it does not matter what the amount is, or who is

On the other side, it is worth noting that, a part from the Senegalese-Malian corridor, where remitting costs 4.80 % of the transferred amount, the least expensive corridors originate outside Africa. These are United Arab Emirates – Egypt, the cheapest corridor ever with an average total cost of 4.11 %, U.S.A – Nigeria, with an average total cost of 4.64 %, U.S.A – Liberia, with an average total cost of 5.61% and U.S.A – Somalia, with an average total cost of 5.67%, to name a few (Figure A.5).

3. New technologies to reduce remittance transaction costs

Remittance transfer payment systems in the South, in general, and in Africa, in particular, are evolving quickly and new remittance channels and technologies are now emerging. In such context, the Internet has played a crucial role. On the one hand, it has played an active role as a source of information, which has contributed to redefine the remittance market share and to reduce the transaction costs of remittances. On the other hand, it has ensured the success of new companies entirely based on On-line money transfers, such as the WorldRemit born in 2010,¹² and has made possible the adoption of On-line money transfer procedures by traditional remittance companies, such as Western Union.¹³ As a result, the market of remittances is increasingly diversifying in terms of innovative financial products. In particular, the emergence and growth of ‘mobile-banking’, a “form of branchless banking based exclusively on the use of mobile phones and the capacity of telecommunications operators to provide payments and assets storage i.e. electronic wallet”, will be beneficial to remitters and recipients (Épargne sans frontières, 2014, p. 14).

involved in the transaction” (Source: Foreign exchange regulations in South Africa: <http://www.moneytransfersouthafrica.org/foreign-exchange-regulations/>, retrieved on 9 October 2015).

¹² WorldRemit, a low-cost alternative to traditional money transfer companies, allows people to send money quickly, simply and securely by using industry-leading privacy and payment security systems, through three easy stages: (1) by selecting the country located in more than 120 destinations; (2) adding the recipient details; and (3) sending the money. The money can then be received as a bank deposit, cash pick-up, mobile money, or mobile airtime top-up. In 2015 WorldRemit continues to expand internationally while adding innovative ways to receive money, and developing new products and services such as their mobile apps. (Source: <https://www.worldremit.com/en/about-us> (Retrieved on 20 October 2015).

¹³ Western Union now allows customers to send money online 24/7. Money may be picked up as cash at a Western Union branch or, in certain countries, deposited in a bank account or received in a mobile wallet with one of Western Union's partner mobile operators. The latter option allows the receiver to get the money even more quickly and easily via SMS notification when the money is delivered (Source: <https://www.worldremit.com/en/about-us> (Retrieved on 20 October 2015).

First, mobile banking helps reduce remittance prices because, as the World Bank (2015d) has showed, its overhead costs are generally lower than those of the traditional financial products, and its branchless characteristic definitely contributes to this. Moreover, thanks to its sound infrastructure and the fact that mobile phones are easy to use virtually anywhere, mobile banking helps both urban and – especially – rural residents to better access financial services (UNCTAD, 2012). In some ways, this will reduce the widespread under-bankarization on the continent and facilitate financial inclusion. The use of mobile banking will also lift the use of formal channels and raise the security level of transactions, on the one hand, and reduce the use of informal channels, related to a limited access to financial services and to the high costs of formal remittance transactions, on the other hand. Indeed, since the prominent part of cross-border international informal transactions are made by cash ('cash-to-cash') and includes the risk of material loss of liquidity, the use of electronic money instruments, such as mobile banking or prepaid cards, helps reduce the flow of liquidity and increases the security of transactions (Maloumy Baka & Kingombe, 2012). In general, and interestingly, such technological instruments may be used in other development areas, such in the agriculture.¹⁴

A range of innovative business models to secure cash flow for income generating activities exists. All those models aim at replacing the current slow, expensive and insecure scenario (in person, via agent, through MTO to MTO - to agent - to person, etc.) with a new and more direct person-to-person (P2P) scenario (Kingombe, 2012). Some examples include Homestring, which offers investment opportunities for productive sectors, such as infrastructures for diaspora finance, facilitated by the Internet or the mobile technology,¹⁵ and Belgacom's wholesale subsidiary BICS, which, through the eServGlobal technology of its HomeSend Remittance Hub

¹⁴ "In 2012 the Nigerian Ministry of Agriculture launched the Growth Enhancement Support scheme, which used mobile technology to transfer fertilizer subsidies directly to 10.5 million farmers all members of a mobile wallet network. The switch meant that the Nigerian government was no longer in the business of procuring and distributing fertilizer. The direct subsidies have helped up to twice as many farmers compared to the previous non-digital scheme—at a sixth of the cost of fertilizer, thereby creating a virtuous cycle by making a dent in smallholder farmers' production costs". (Source: <http://www.cgap.org/blog/bringing-mobile-wallets-nigerian-farmers>, retrieved on 9 October 2015).

¹⁵ *Homestring* circumvented the regulations between the Diaspora and traditional development finance institutions (DFIs) by aggregating funds and investing them on behalf of the Diaspora on equal footing with the DFIs

platform, enables users to send amounts smaller than €400 instantly and regardless of location; this is done through e-banking and mobile money payments. BICS works with Airtel Africa and has been facilitating mobile money transfers throughout Africa since 2012 for unbanked customers via mobile numbers, after signing a deal with Xpress Money, one of the world's biggest money transfer companies.¹⁶

On their side, Arcand *et al.* (2013) provide examples on how mobile finance can help support mobile credit and micro-insurance products to enhance financial inclusion for both individuals and growth-oriented small and medium-sized enterprises (SMEs). The authors argue that financial companies can offer innovative mobile financial products to small firms in developing countries if they adapt their products and business models to the realities of these firms. They also provide an original review of the very few existing "mobile" financial products for small enterprises, in the areas of credit and micro-insurance, which are offered by postal systems in the developing world.

4. New technology & Remittances

New enabling technologies, such as mobile banking, as a means of reducing the remittance transaction costs can be a real instrument through which fostering the spirit of innovation and entrepreneurship between Africa and its diaspora (Kingombe, 2012). Therefore, it is essential to put into place appropriate conditions for such new technologies to emerge properly. In this regard, a framework by Ratha *et al.* (2011) underlines the importance of telecommunication infrastructures in Africa. According to the authors, governments play an essential role in this process, as they have the power to – and should – improve national telecommunication infrastructures, harmonize banking and telecommunication regulations for the mainstream African banks to be able to actively participate in mobile money transfers, and – in line with public safety necessity – “simplify anti-money laundering and combat the financing of terrorism (AML-CFT) regulations for small-value transfers... this would facilitate mobile-to-mobile cross-border transactions” (Ratha et al., 2011, p. 6).

¹⁶ Source: <http://www.mobileeurope.co.uk/News-Analysis/bics-postfinance-team-up-to-launch-p2p-mobile-payments-e-banking-service> (retrieved on 9 October 2015).

4.1. Mobile banking and mobile money in Africa

Africa is the most advanced area in the world in terms of the use of cell phones for financial purposes. The African leadership in the use of mobile banking and mobile money is the result of two key drivers: the high level of under-bankarization and the diffusion of cell phones throughout the continent. On the latter point, the Consultative Group to Assist the Poor (CGAP) estimates that 1.7 billion people would have had mobile phones in the developing countries but no bank accounts by 2012. According to the Ericsson (2014) Mobility Report (2014), with 835 million mobile subscriptions in the first quarter of 2014, African continent was the third region in the world, after Asia-Pacific region (excluding China and India) and China, with a mobile penetration level of 73%.

As a percentage of the population, Kenya and Nigeria, in SSA, are leaders in the adoption of mobile payment systems (CfC Stanbic Bank, 2013). The most known mobile payment system is without doubt the Kenyan M-Pesa service, which allows clients to transfer money through their Safaricom mobile phones. Besides giving the possibility to transfer money, M-Pesa allows its users to receive cash, pay bills, purchase goods, and manage their savings. This is possible, amongst others, because no bank account is needed to perform such operations. According to the Global Findex Database (World Bank, 2015a), Kenya leads African countries in terms of financial inclusion, with 62% of the population (aged 15 and more) holding a bank account. The World Bank credits such an important financial inclusion level to the diffused use of mobile money and to the success of this instrument in giving previously unbanked populations access to banking services. It is worth saying that M-Pesa-linked bank account models exist, though, and are still very popular. This is the case of M-Sharia, the result of a partnership between Safaricom and the commercial bank of Africa (CBA), in Kenya, and M-Pawa, the result of a partnership between Vodacom and the CBA, in Tanzania. With those instruments, customers may open accounts straight from their M-PESA wallets and easily receive some services such as accessing to loans and earning interest on savings, according to the CGAP.

M-Pesa inspired other countries, which have built up similar services and infrastructures. This is the case of Globacom in Nigeria, Orascom in Algeria, Egypt, Tunisia, and Zimbabwe or CelPay and Tigo Mobile Money Solution, in Democratic Republic of Congo, to name but a few.

Since transferring money through mobile banking and mobile money means performing two operations, i.e. making small payments and transfers by using the mobile phone, two actors are involved in such a process: a mobile phone operator and a commercial bank. The former, unauthorized to perform financial services and to implement payment systems, has to partner with the latter, which is authorized by central banks to perform a range of financial operations, such as opening a bank account for the mobile phone operator to perform compensations. For this to work, it is crucial that a functioning regulatory framework exists (Maloumy Baka & Kingombe, 2012). Also, for the mobile banking to be fully and properly used by unbanked people, especially in rural contexts where the association of the cell phone to the circulation of financial assets is not only uneasy and may even be regarded with concern, training on financial inclusion should highlight issues related to the safety of the transfers and to trust (Maloumy Baka & Kingombe, 2012).

As for the penetration, the level of mobile banking services varies across the continent, depending on the number of banks and mobile phone operators involved in offering those services, as well as on the level of functioning of infrastructure and technology networks (Net Present Value Limited, 2014). For example, one of the major problems faced when developing mobile banking and mobile money services is the fact that money transfers between two different mobile networks, for example Tigo Cash in the sending Senegal and Orange Money in the receiving Côte d'Ivoire within ECOWAS region, may not be performed (Net Present Value Limited, 2014). However, this gap seems to be progressively filled, as mobile operators are implementing the interoperability, i.e. partnering to connect their mobile money wallets and allow multiple network operations. For example, in April 2015 Vodafone Group and MTN Group formally agreed to interconnect their mobile money services in East Africa (Computer Business Review, 2015). It is reported that this venture will allow M-Pesa customers in Kenya, Tanzania, Democratic Republic of Congo and

Mozambique and MTN Mobile Money users in Uganda, Rwanda and Zambia to transfer money between the two services.

In 2011, \$350 billion were transferred between people across borders through mobile devices (World Bank, 2011). As of December 2014, there were 255 mobile banking services worldwide in 89 countries of which 53% in SSA (GSMA, 2014). In 2013, the West African Economic and Monetary union (UEMOA) counted around 10 million clients subscribing to mobile banking services. In the month of December 2014, 103 million active registered clients worldwide, of which 61.9 million in SSA, performed 717.2 million transactions valued at \$7.5 (GSMA, 2013).

4.2. Bitcoins

Increasing consumption, investment or savings by remittance recipients could contribute greatly to inclusive growth and structural transformation. This may be possible either because MTO market leaders reduce their average fees, which global initiatives such as the World Bank RPW and Tawipay have pursued, or because new cheap transfer products are made available, amongst other reasons.

Evidence has showed that new technological financial products, such as the mobile banking or mobile payments, is not only cheaper than traditional remittance instruments, but can substantially contribute to lower total average remittance costs (CITI, 2012). And this is possible because “the more favorable volume economics of large agent networks are applied at the receiving end, although the transaction will still require a MTO, such as Western Union and MoneyGram, or other intermediary between sending and receiving countries, and those costs are unlikely to be affected greatly by what happens at the receiving end” (Strategy Analytics, 2012, p. 3). In the same direction, another emerging instrument is increasingly being referred to as even cheaper than cell phones, i.e. the crypto-currency Bitcoin. This is an innovative peer-to-peer online payment system based on cryptography¹⁷ that has been active since 2008 and that is believed to be able to revolutionize the remittances market

¹⁷ “Cryptography is the branch of mathematics that lets us create mathematical proofs that provide high levels of security. Online commerce and banking already uses cryptography. In the case of Bitcoin, cryptography is used to make it impossible for anybody to spend funds from another user's wallet or to corrupt the block chain. It can also be used to encrypt a wallet, so that it cannot be used without a password” (Source: <https://bitcoin.org/en/how-it-works>, retrieved on 9 October 2015).

worldwide, in terms of reducing remittance transaction costs drastically. It is generally asserted that because transactions are performed amongst users directly, that is, without the need of any financial intermediary, transfer fees will significantly lower. This is due, Bitcoin's promoters explain, to the fact that users and volunteer developers keep track of transactions (i.e. transfers of value between Bitcoin wallets) and update the records of transactions in real time. It is worth highlighting that no single user, company or central authority, but all the Bitcoin network is in charge of keeping track of such transactions and updating their records. "The records of all confirmed transactions are then kept on a shared public ledger — that is, a big publicly available spreadsheet — known as the block chain that is visible to anyone and has, at least so far, proven impossible to tamper with"¹⁸. The block chain, whose performance and integrity are enforced with cryptography, allows Bitcoin wallets to know what their balance are and to make new transactions by the spender (Bitcoin Project, 2015). Another most cited advantage of Bitcoin is its transaction speed, which is claimed to be much quicker than that of traditional transfer instruments: a few minutes for a transaction to clear using Bitcoin, according to Michael Kimani, African Digital Currency Association's head, versus up to 6 days or more remitting through consolidated instruments, such as bank accounts, cash, and prepaid cards, according to the World Bank's RPW database.

The interest for Bitcoin in Africa is quite evident, as Bitcoin companies have emerged in the last years on the continent. This is the case of Beam and Kitima, in Ghana, and BitPesa, in Kenya, to name a few. Those companies convert Bitcoin remitted into local currencies, i.e. Ghanaian cedi and Kenyan shillings. This interest is understandable, as the number of African users of Bitcoin is increasing and their interest goes well beyond the mere money transfer operations. According to Xoin, a South Africa-based Bitcoin start-up, about 30.000 online stores already accept Bitcoin in South Africa. Moreover, just like it happened in Vancouver (Canada), where the first ever Bitcoin ATM opened in 2013, recently the first African Bitcoin ATM opened in Johannesburg (South Africa) and now allows people to convert cash into Bitcoin.

¹⁸ Source: http://www.nytimes.com/2015/08/31/business/dealbook/bitcoin-technology-piques-interest-on-wall-st.html?_r=0 (retrieved on 9 October 2015).

However, the crypto-currency in Africa brings concerns. First, users see the absence of a regulatory system of Bitcoin as risky, because no regulatory entity may protect consumer's interests. The high level of Bitcoin anonymity that explains this no-regulatory system is considered a way through which illegal activities, such as money laundering, may be taking place within this payment system (Blundell-Wignall, 2014). Another concern is related to Bitcoin's price volatility, which undermines its credibility as a payment system (European Central Bank, 2015), while exerting an even greater risk to the poorest and most vulnerable recipients. In this regard, coindesk, for example, shows that Bitcoin went from a value of US\$ 0.05, in July 2010, to a value of US\$ 1,165.89 – its highest ever – in November 2013, to drop to US\$ 235.36 in September 2015.¹⁹

Just like it happened with mobile banking years before, Bitcoin is now progressively entering into African financial habits. The first Bitcoin Africa Conference that was held in Cape Town (South Africa) last April and gathered experts to discuss and share lessons learnt on advantages and risks of this crypto-currency is a tangible signal of the extent to which there is an important technological change taking place on the continent. In the same vein, a recent OECD working paper by Blundell-Wignall (2014) recognizes the importance of the technologies associated with crypto-currencies and the fact that they may become a serious disruptive technology for financial intermediaries. However, the author argues, it is not plausible to think that such crypto-currencies may replace legal tender like dollars, for the issues raised earlier and that make the Bitcoin's future in Africa somehow still uncertain. Bitcoin might not replace legal tender, but it will certainly be used to further speed up transactions in several industries, including accounting, music and law. It is also progressively believed that such instrument may bring a new way of transacting in finance, as the interest of Wall Street major Banks has shown (New York Times, 2015).

Some actors in Africa are convinced that Bitcoin will play a central role in the market of remittances very soon. In fact a few startups are already operating on the bitcoin/remittance market. For example, BitPesa has recently raised \$1.1 million to ease

¹⁹ Source <http://www.coindesk.com/price> retrieved on 9 October 2015

bitcoins transfer from the UK to Africa. According to Elizabeth Rossiello, CEO of BitPesa, the company aims at building Africa's first and largest digital currency payments hub. This is done by using Bitcoin for remittances in Kenya and Tanzania. That is, users from anywhere in the worlds are able to send Bitcoin to BitPesa, which converts it to M-Pesa and load it into the receivers' M-Pesa account. Such a system helps M-Pesa users getting money quickly and efficiently, with only 3% of fee, significantly cheaper than the traditional transfer methods. Given the success of the combination of M-Pesa with Bitcoin in Kenya and Tanzania, BitPesa is significantly disrupting the money transfer market in the EAC region.²⁰ And it is worth having much expectations of any further development of the use of the Bitcoin in Africa at the next Bitcoin Africa Conference, scheduled in March 2016 in Johannesburg Africa.²¹

Another example is Rebittance.org. This platform allows senders to find and transact with rebittance cash-out partners worldwide. To perform transaction, the sender picks up the country where he needs to send the money to, and will be able transact if there are rebittance partners in such country. Sending a rebittance²² would require that clients first exchange legal tender like dollars or euros for the completely digital and decentralized Bitcoin. Within the transaction infrastructure, Rebittance.org forwards the received Bitcoin to the partner within 60 minutes of confirmation on the blockchain. Partners are charged 0.3% (one-third of a percentage point) of the total rebittance amount as a processing fee.²³ As of today, the Money Wiki is a good source of information on the topic, because it has provided an up-dated list of all the companies engaged worldwide in money transfer services (whether legally or without a license).²⁴

Finally, despite the obvious threats and risks - such as money laundering, hacking, currency exchange rate risk etc. - associated with an open-source technology, which relies on P2P network (i.e. connecting buyers and sellers to arrange currency

²⁰ Sources: <https://www.youtube.com/watch?v=cTVWAsymExg> and <https://www.bitpesa.co/>

²¹ Source: <http://bitcoinconference.co.za/> (Retrieved on 9 October 2015).

²² "Rebittance" is the term used for remittances powered by Bitcoin. It describes the core process that Rebittance.org uses to make money transfers cheap.

²³ Source: <https://rebittance.org/how-it-works> (Retrieved on 20 October 2015).

²⁴ The full list may be retrieved from: <http://themoneywiki.com/wiki/alternative-currency-rebittance-bitcoin-remittance>

exchanges) to operate, the Bitcoin technology “has a lot of property to attract digital remittance operators, starting with its decentralized technology and low-cost operating structure, and some money has been invested in this market as the remittance industry is quickly shifting to digital”²⁵ as explained above.

5. Conclusion and Policy Recommendations

The implications of high remittance costs are significant. According to the World Bank, international migrants may save up to \$16 billion a year if remittance prices were cut by at least 5 percentage points. The UNCTAD (2012) estimated that if the cost of remitting money to Africa had matched the global average cost, annual remittances sent to SSA could have generated an additional \$6 billion for recipients, with the subsequent benefits for development. Thus, remittances represent a great opportunity for poverty alleviation, wealth creation and consumption smoothing of recipient households, although appropriate policy actions to foster the economic impact of such significant amount of money inflows could be taken. These may be as follows:

Actions to foster the efficiency of the payment system

The African business models provide new channels for payment and banking (AfDB, 2010; Zhang, 2012). When services are offered by banks, they comply with banking regulations. The Vodafone Status Reports in December 2008 reported: “M-Pesa has been successful because it relies on traditional practices and structures and modernises these features. It is indeed a model based on indigenous payment practices, extended mobile phone networks and a large distribution network. The distribution network is based on agents who were already present in markets. Agents receive basic training from M-Pesa. Only three months after the launch of M-Pesa, the service had 400 agents, compared to 450 bank branches and 600 ATMs in Kenya. By 2009 M-Pesa had 3 400 agents. It is simple and quick, taking less than 30 seconds to carry out a transfer”.

²⁵ See ‘Bitcoin Might Be The Next Big Thing In The Remittance Market’ posted May 25, 2015 by Florian Graillot Source: <http://techcrunch.com/2015/05/25/bitcoin-might-be-the-next-big-thing-in-the-remittance-market/> (Retrieved on 20 October 2015).

Therefore, the development and the continuous modernisation of the payment system is an essential tool when it comes to remittances flows. Unfortunately, “by comparison with international practices, African payment systems are often inefficient in terms of cost, time, convenience, adaptability and finality” (UNECA/AU/AfDB, 2010, p. 267). This relates to the fact that most of the African economies are cash-based, which highlights the insecurity and inefficiency of their payment systems, generally small, fragmented and uncompetitive (UNECA/AU/AfDB, 2010).

New technologies have given rise to new financial models that could positively transform the poor and unbanked in Africa. The AfDB, together with other multilateral development banks, considers digital financial services as a real opportunity for Africa’s next generation of entrepreneurs to achieve universal access to financial services (Kingombe, 2015).

In the light of the above, some actions may be put in place to increase payment systems efficiency in order to lower remittance costs. Those may be:

- Redesigning the regional and national regulatory framework to stimulate the diffusion of new technology financial products, such as mobile banking. To implement such an action, interaction between monetary policy and international policy coordination between central banks within the same regional economic community is a pre-condition;
- Incentivizing the provision of banking services in rural areas (among financial institutions), and facilitating the networks development of dedicated credit officers and itinerant banking solutions;
- Promoting capacity development programmes for postal offices to improve its staff’s knowledge of remittances and their skills on how to process them. Also, improving the clearing mechanism of the postal system’s electronic money transfer services may be of help (Arcand et al., 2013);
- Promoting the integration of post offices with international payments networks.

Actions to implement an appropriate regulatory framework

During the last years, and in particular after the beginning of the global financial crisis, African countries have been improving their financial systems through the implementation of reforms which include more effective regulatory systems and enhanced supervision on the banking sector. New technology – like the mobile phone – may also deliver mobile banking services. This could be encouraged in the context of the central bank’s regulatory framework for branchless banking (Kingombe, 2012).

Just like in other parts of the world, encouraging competitive financial intermediation in Africa is a key element to reducing costs of sending money home and diversifying the number and the typology of providers available to offer such services. Although some countries are trying to put in place some strategies and policies to reverse this situation, such as Senegal and Morocco, and Tunisia that successively lifted the major MTO’s exclusivity clause, further actions are needed to reach the effectiveness of remittances’ market competition and transparency. For instance, revising regulatory frameworks in certain areas, such as in ECOWAS, may be crucial to identify possible inconsistencies on remittance operations (Net Present Value Limited, 2014), in particular, in relation to the nature of authorized institutions. Indeed, “even though efforts are being made to strengthen national level regulatory frameworks and supervision, without harmonized regulations governing the structure and terms of financial products, the development of uniform products for cross-border transactions and associated economies of scale will be difficult to achieve [...] From a supervision perspective, it is unclear whether the Central Banks effectively monitor the exposure of commercial banks’ holding companies that have lending operations or subsidiaries across a number of countries [...]. The EAC and COMESA as well as the Tripartite Arrangement have provisions to strengthen the regional market in financial services. Envisaged actions include the harmonization of banking regulations, legal framework, licensing, accounting, disclosure standards, internal and external audits, and IT systems. The EAC has developed a financial integration policy with the objective of creating a single harmonized market in financial services. An assessment of progress made in this regard by the EAC Monetary Affairs Committee (MAC) showed that Partner States

have made progress in modernizing and integrating payment and settlement systems [...] Specific measures being taken include developing and operationalizing legal and regulatory frameworks for anti-money laundering, credit information sharing, microfinance, risk-based supervision, supervision coordination, and cooperation in Business Continuity Management” (AfDB, 2011, pp. i, ii, Annex 7).

Actions to promote investments

An example of good practice is Homestrings (www.homestrings.com). In July 2011, it launched an interactive web portal and investment platform, which provides experienced private individual investors with a means to send their resources towards initiatives in Africa that have previously only been accessible to institutional investors and that makes a difference.²⁶

Homestrings is a unique proposition inspired by the personal experience of Eric Vincent Guichard, the Guinea-raised Founder and CEO of Homestrings, who identified a market demand from the community of African diaspora, who wanted to be able to invest in projects in their home countries and simultaneously benefit from the growth potential of the emerging markets. To help the diaspora do so, Homestrings aggregates experienced individual investors’ demand and targets access to vetted opportunities with great track records across Africa. It provides direct access to institutional private equity funds, projects and public-private partnerships that were, until now, not available to private individual investors.²⁷

In the light of the above, some of the actions that can be put in place to increase investments by the Diaspora in their origin countries may be related to two following points:

- Upper ceiling of transferred amounts: often claimed to be too restrictive, the transferred amounts ceiling – usually imposed to fight against money laundering - should be revised upwards to ease African Diaspora in their

²⁶ “Homestrings is an independent entity, majority owned by boutique asset management firm, Gravitas Capital. It is available to those the financial regulators designate as ‘Qualified Investors’. Minimum investment is less than \$1,000, although most of the projects in the investment catalog has a minimum amount of \$25,000, usually Treasury Bills and Treasury Bonds or 2 - 12 year Treasury Bonds. London, 27 July 2011”.

Source: <https://www.homestrings.com/investment-catalog> (retrieved on 9 October 2015).

²⁷ Source: <https://www.homestrings.com> (retrieved on 11 May 2015).

engagement into investment projects (crucial to sustainably reduce poverty through inclusive growth) which generally require amounts higher than those frequently transferred through conventional channels;

- Bank accounts in local and foreign currencies: revising the requirements for opening both typologies of accounts, namely in terms of documents needed, time needed, costs, and permission by the central banks, may encourage international transactions and eventually support investments and development.

Actions to promote financial literacy, investment & social entrepreneurship

Financial literacy is a crucial issue both in Africa and worldwide. In this regard, it is important to raise awareness of risks related to remitting through informal channels. This could be done, for example, by promoting campaigns that address such risks and encourage the use of most cost-effective but formal facilities, such as the mobile banking that experts consider to be characterized by reasonable costs, safety and speed (Maloumy Baka & Kingombe, 2012).

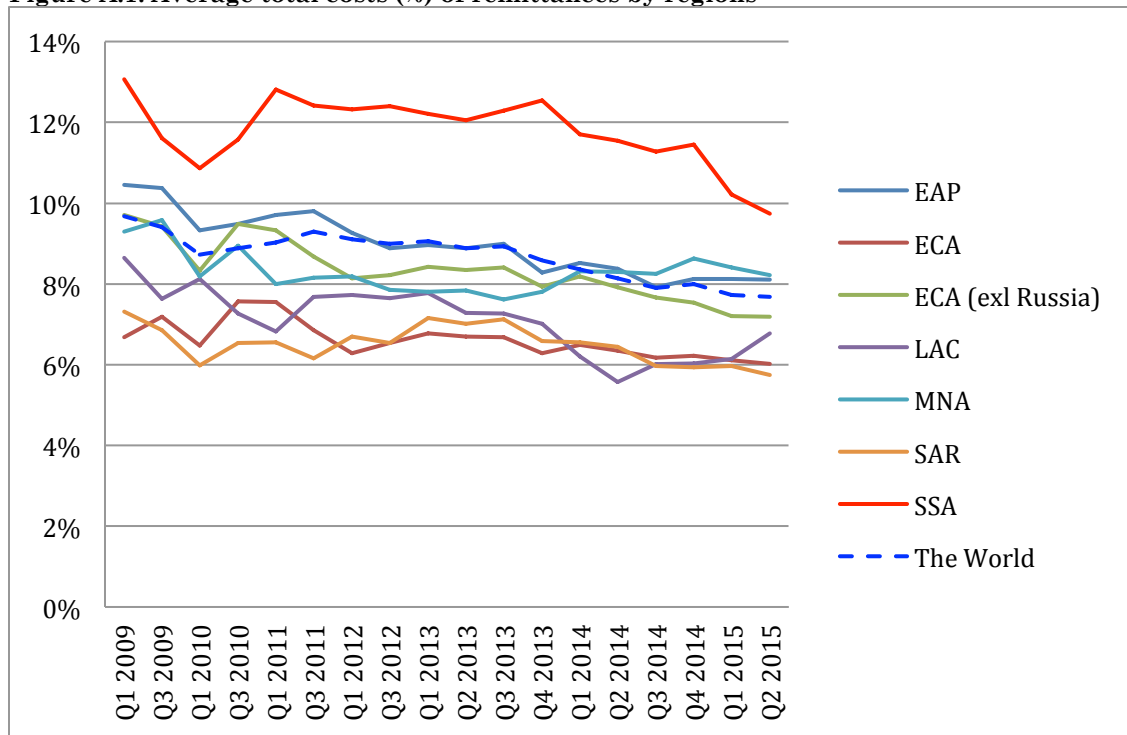
This said, some key questions still remain to be answered if African countries take full advantage of solutions offered by this leap-frogging development instrument (Kingombe, 2012). It is worth highlighting, amongst others, issues related to:

- Technology. The existence of a reliable network of agents and a critical mass of frequent users is considered a precondition to ensure that mobile money provide a large payout network for remittances: Are platforms put in place sufficiently reliable to make this happen?
- User-friendly mobile banking. It is essential to have a good domestic functioning payment system to take advantage of cross-border remittances. In particular, the ability to regularly pay out money is crucial for the mobile banking to take off effectively: How to ensure this happen, so that customers fully trust such instrument, and how to protect consumers, in general, and illiterate consumers, in particular, from scams and rip-offs?

- Diaspora. The private savings of the diaspora could be transferred much faster towards productive projects in Africa, and would this entail both higher social benefits and higher economic returns to the investments:
 - As the World Bank (2014a) points out, some developing countries are taking initiatives in order to link, on the macro-side, migration and capital market access through diaspora bonds, and, on the micro-side, migration and development through financial products for individuals and SMEs. Hence, it will be useful to look at best practices on diaspora bond projects that address the untapped potential of diaspora savings.
 - Establish international and national coalitions amongst willing stakeholders able to advocate for lower international remittances costs.
 - Encourage comparison websites for MTO services, such as RPW and Tawipay, to work closer with diaspora for inputs to ensure a fuller picture covering both formal and informal channels.

Annexes

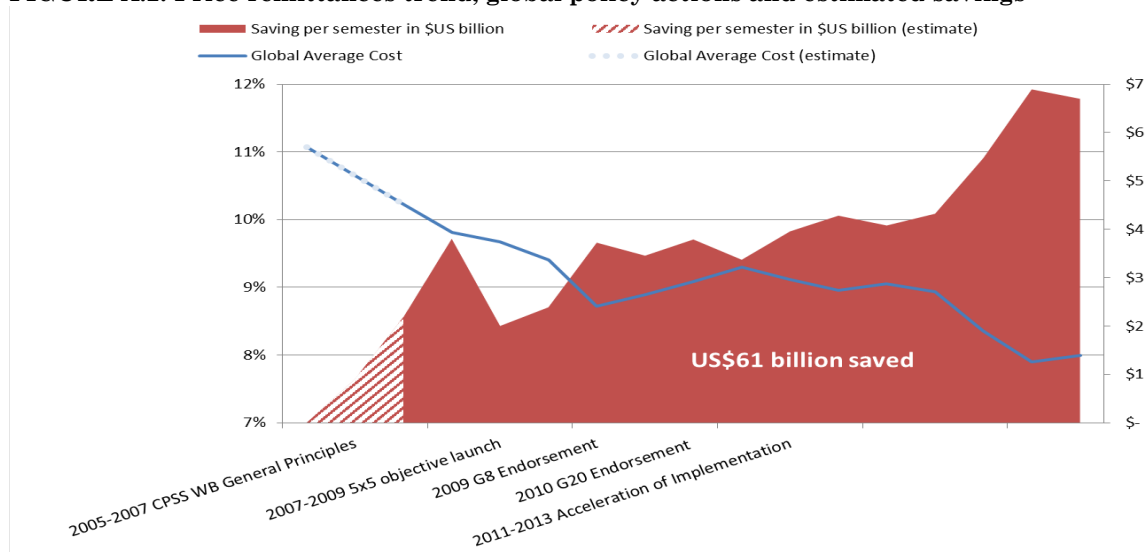
Figure A.1: Average total costs (%) of remittances by regions



Source: World Bank (2015e)

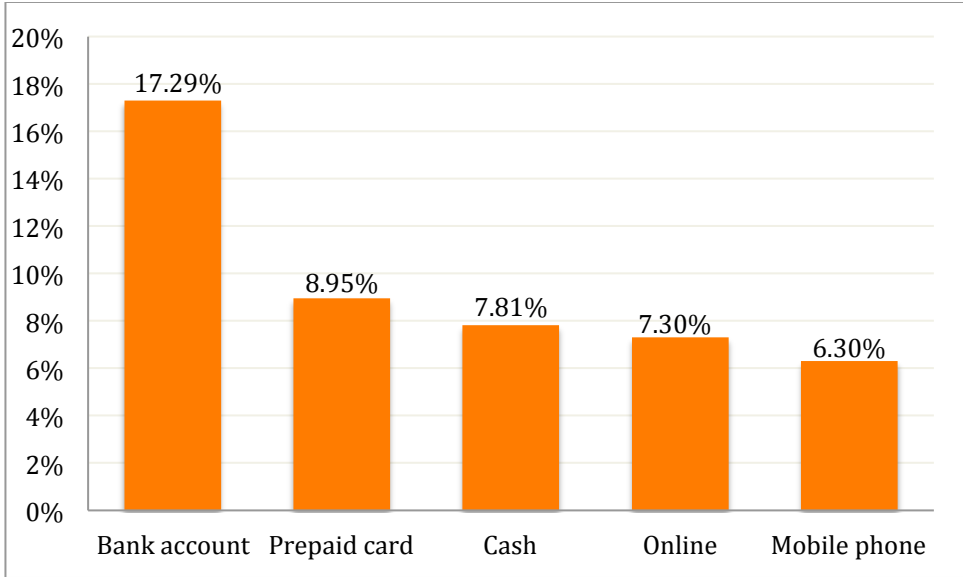
Notes: EAP = East Asia and Pacific; ECA = Europe and Central Asia; LAC = Latin American countries; MENA = Middle East and North Africa; SA = South Asia; SSA = Sub-Saharan Africa.

FIGURE A.2: Price remittances trend, global policy actions and estimated savings



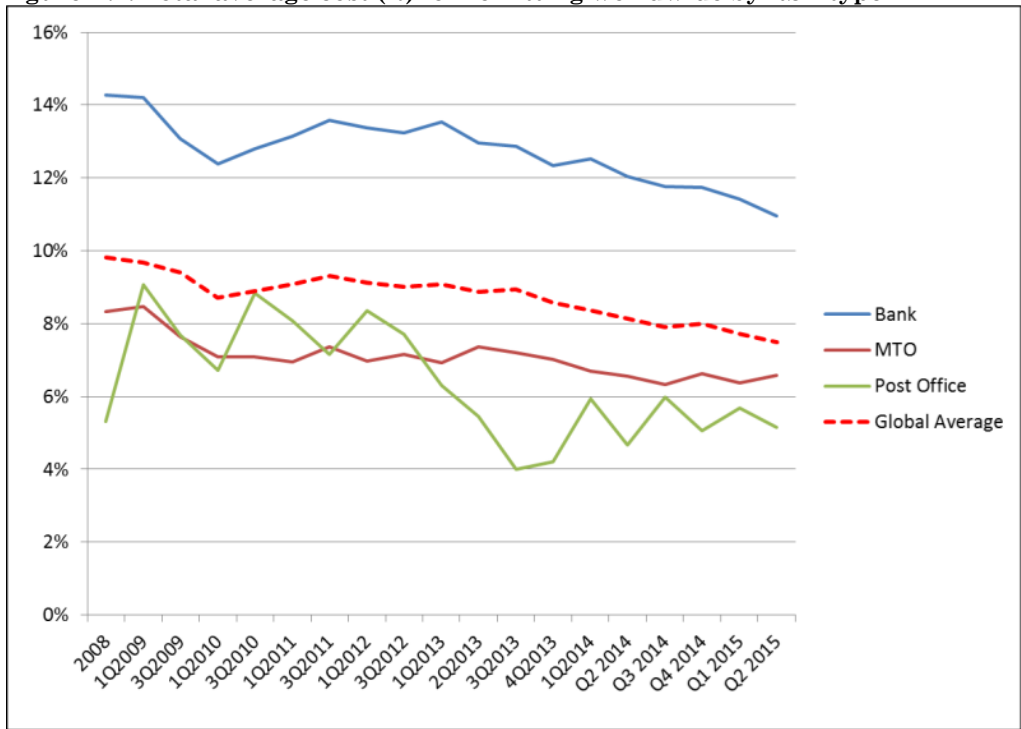
Source: World Bank (2015c).

Figure A.3: Total average cost (%) for remitting to and with Africa by the main formal channels



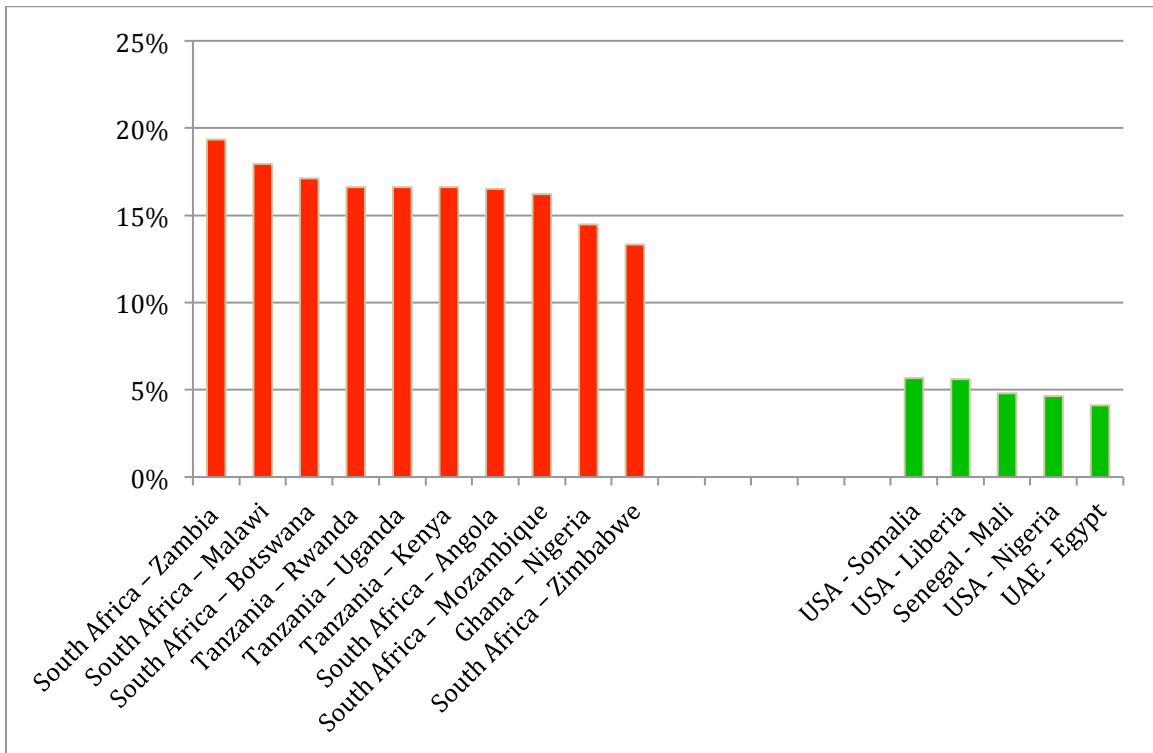
Source: World Bank (2014b)

Figure A.4: Total average cost (%) for remitting worldwide by RSP type



Source: World Bank (2015e)

Figure A.5: Remittances fees to and within Africa, Q2 2015 (in percentage)



Source: Authors calculation based on Remittances Prices Worldwide database, World Bank 2015.

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