



HAL
open science

The State of Digital Financial Services in Francophone West Africa

Jenny Aker, David A Carroll

► **To cite this version:**

Jenny Aker, David A Carroll. The State of Digital Financial Services in Francophone West Africa. [Research Report] Ferdi. 2022. <hal-03642499>

HAL Id: hal-03642499

<https://hal.science/hal-03642499v1>

Submitted on 15 Apr 2022

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons CC BY-NC-ND 4.0 - Attribution - Non-commercial use - No Derivative Works - International License

Chair “Digital Trust”
Digital for Development Research Initiative
Report #2

The State of Digital Financial Services in Francophone West Africa

 JENNY C. AKER, Professor of Development Economics, Tufts University, Boston, USA. Co-head of the Digital Trust Chair

 DAVID A. CARROLL II, Doctoral student, Friedman School of Nutrition Science and Policy, Tufts University, Boston, USA

The State of Digital Financial Services in Francophone West Africa

March 2022

Jenny C. Aker and David A. Carroll II

Abstract. The introduction of digital financial services (DFS) offers new opportunities to reduce the transaction costs associated with money transfers. Over the past decade, the number of DFS deployments has increased substantially, with over 300 deployments worldwide as of 2020. While there is substantial potential for such services to address the constraints to financial inclusion, especially in West Africa, widespread adoption and usage of these services remains relatively concentrated in particular markets. Economic research shows promise in terms of DFS increasing access to money transfers, smoothing consumption and reducing poverty in the long-term, but few studies have more sustained impacts. This can, in part, be explained by the agent network in several countries and the regulatory framework. We conclude by providing recommendations for the further growth of mobile money in West Africa.

Keywords: *West Africa, digital financial services (DFS), mobile money, financial inclusion, agents, interoperability.*

1. The Potential of Digital Financial Services (DFS) for Financial Inclusion in West Africa

1.1. Financial Inclusion in West Africa: The Financial Inclusion Ecosystem

Financial services are crucial for development (Demurgic-Kunt et al 2017). They allow households to transact, smooth consumption in the face of shocks, invest in their education and businesses, and save money. Throughout the world, many of the most resource-strained households lack access to the full range of financial services that would enable them to conduct the abovementioned functions, and instead these households must rely upon cash or informal financial services. Yet a combination of formal and informal financial services, including (but not limited to), credit, savings, remittances, and insurance, and, more recently digital financial services – are needed.

Across sub-Saharan Africa, access to formal financial services has grown rapidly over the past few decades, and especially in the common currency zone of West Africa (WAEMU).¹ While precise estimates differ, surveys suggest that 35% of the adult population in WAEMU held an account at a formal financial institution as of 2014, with similar estimates in 2017 (FINDEX 2017).² This figure increases to 61% when mobile money accounts are included (BCEAO 2015).³

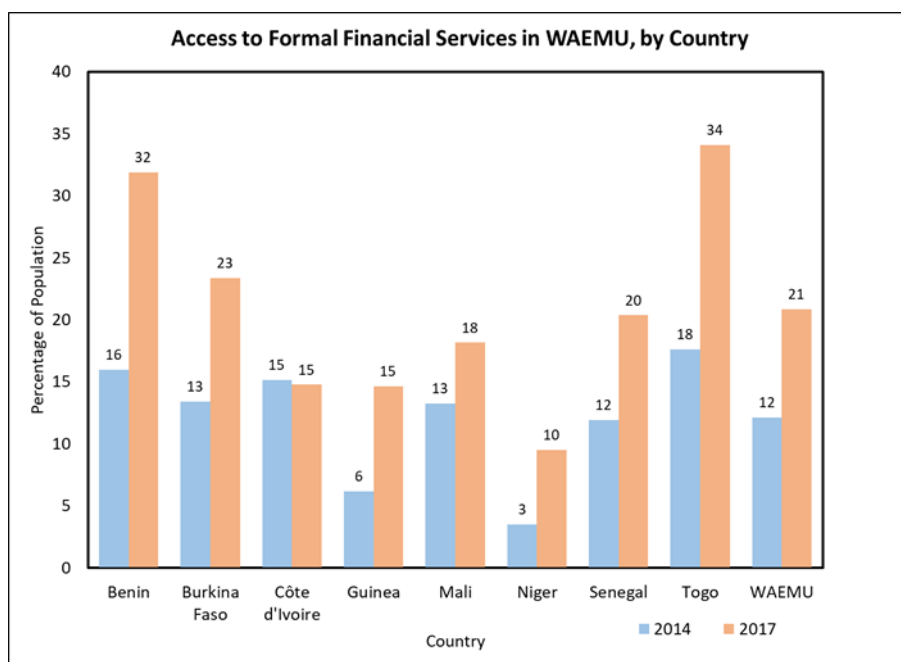


Figure 1. This figure shows access to formal financial services in the countries of the West African Economic and Monetary Union (WAEMU) in 2014 (blue bars) and 2017 (orange bars). Data are taken from the Global Findex Database 2017 (Demirgüç-Kunt et al 2020).

¹ Financial inclusion is defined as “all initiatives that make formal financial services available, accessible, and affordable to all segments of the population. (Triki and Faye, 2013. “Financial inclusion in Africa”. *African Development Bank*.)

² The Global FINDEX database is a set of indicators that measure how adults in 148 economies save, borrow, make payments, and manage risk. It is compiled using nationally representative surveys of more than 150,000 adults age 15 and above and includes indicators on access to and use of formal and informal financial services. In the WAEMU, face to face surveys were conducted of 1000 people per country, chosen through rigorous sampling procedures Demirgüç-Kunt et al, 2020.

³ CGAP (2016) estimated that 20 percent of adults in the WAEMU have an account at a formal financial institution, raised to 35% when mobile money is included (CGAP 2016).

Despite these advances, there is still significant heterogeneity in financial inclusion within and across the region (Figure 1). Niger and Togo offer a helpful contrast— while Niger has the lowest take-up of formal financial accounts and mobile money accounts (16%), Togo has the highest at 45%. Beyond heterogeneity across countries, there is also intra-country variation in access to financial services, often driven by socioeconomic and demographic indicators (Figure 2). In general, those with access to formal financial services are more likely to be male, have a secondary education, and higher levels of income.

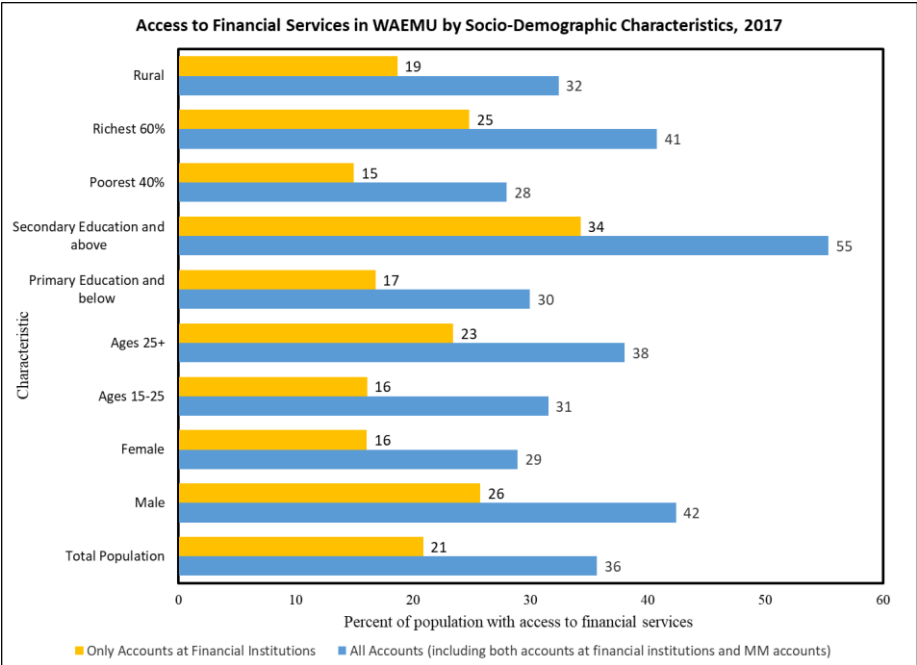


Figure 2. This figure shows access to formal financial services in the WAEMU by socio-demographic characteristics (poverty, educational attainment, rural/urban status, gender, and age). Yellow bars show only financial institution accounts, while blue bars show financial institution accounts plus mobile money (MM) accounts. Data are taken from the Global Findex Database 2017 (Demirgüç-Kunt et al 2020).

In light of limited access to formal financial services, households often use a variety of *informal* mechanisms to save, borrow, invest, transact, and send remittances. Informal mechanisms prove critical to basic welfare, and are much more widely used than formal mechanisms (only half of those with an account at a financial institution reported making at least one withdrawal in the last year). Similar statistics describe behavior surrounding deposits to formal financial accounts. Often, households take a hybrid approach to meeting their financial needs, using both formal and informal channels. For instance, 45% of those with an account at a formal financial institution had engaged in some form of savings the year prior to being surveyed, primarily to start a business or for retirement purposes. They did so primarily through informal channels, such as savings collectors (*susus*) or savings groups, despite retaining formal bank accounts.⁴ Similar results emerge for borrowing: 45% of individuals in WAEMU borrowed money at some point in the past year (FINDEX 2017), but the majority did so with family or friends or Rotating Savings and Credit Associations (ROSCAs) (7.6%). Only 6% reported borrowing with formal institutions.

1.2. Remittances: A Key Driver for Financial Services

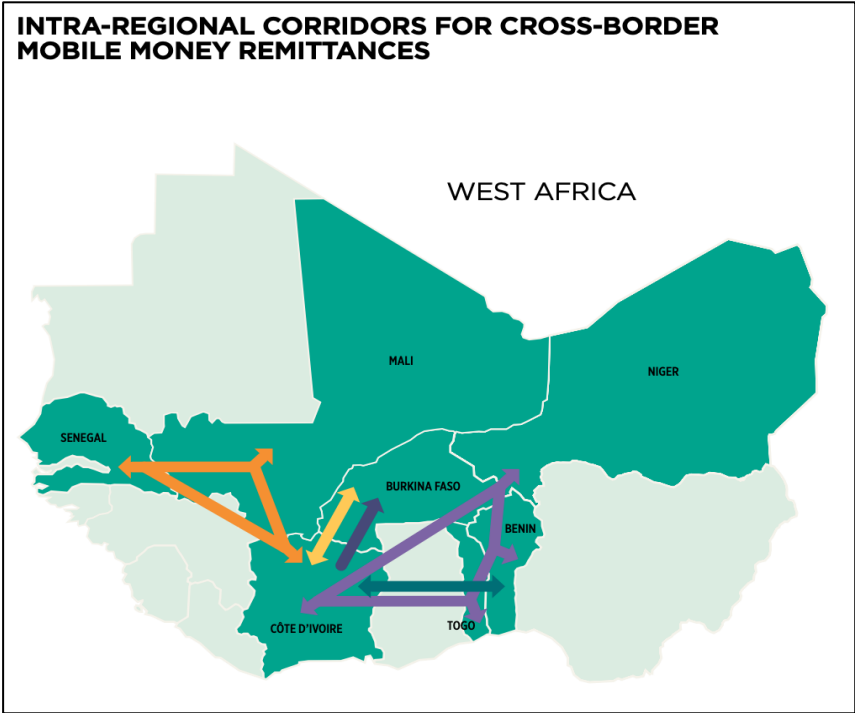


Figure 3, GSMA 2015. This map, provided by GSMA, shows major corridors for international MM remittances in West Africa (Scharwatt and Williamson 2015).

⁴ This savings behavior is primarily via informal mechanisms such as ROSCAs (23%), rather than formal institutions (7.7%).

International, regional and domestic migration play a vital role in the welfare of West African households (ICPMD 2015, Radha et al 2011).^{5,6} In 2016, an estimated 84% of international migration from WAEMU remained within-region, either for seasonal or permanent migration. Migrants in Sahelian countries, for example, primarily take advantage of popular and well-traveled “migration corridors” to Nigeria, Côte d’Ivoire, and Ghana, and send significant flows of remittances back home (ICPMD 2015, ICPMD 2016).⁷ The corridor between Burkina Faso and Ivory Coast, for example, is considered to be one of the largest remittance corridors in all of sub-Saharan Africa.

As a result of these patterns, sending and receiving remittances is a key driver for financial services in WAEMU. In 2017, 42% of adults reported sending or receiving any remittances, a large percentage of which were domestic (Findex 2017). Cross-border remittances in the region totaled US\$ 6.12 billion around the same period (World Bank 2016).

Traditionally, the primary regional money transfer service providers have been banks, international money transfer services, postal services and local money transfer operators (IFAD 2009, World Bank 2019). Regional remittance flows within WAEMU have historically been managed by partnerships between local companies and international money transfer services (GSMA 2015).⁸ However, in recent years, the remittances industry in WAEMU has expanded to mobile network operators (MNOs), with over 60 MNOs in the region with some form of remittance partnership (GSMA 2015).⁹

Despite the multitude of options, the cost of sending remittances in sub-Saharan Africa – and WAEMU in particular - is one of the highest in the world, averaging 9%, as compared with the world average of 7% and the 3% target set by the United Nations Sustainable Development Goals (SDGs) (GSMA 2017).

5 “Remittance Markets in Africa.” World Bank 2011

6 While regional statistics are difficult to obtain, many of the regional and domestic migration patterns across West Africa can be typified by the example of Niger. Between 2008 and 2017, 50 percent of Nigerien households had a migrant. The majority of these (40%) were seasonal migrants, traveling for work during the dry season, as opposed to permanent migration (Aker et al 2020). 27% of migrants worked internally within Niger, with 15% migrating to Nigeria and 21% migrating to other destinations within West Africa, namely, Ivory Coast, Ghana and Senegal. Data on the drivers of migration in Niger shows that migration is correlated with household size, education and wealth. Perhaps surprisingly, climatic shocks (such as drought) are negatively correlated with the likelihood of migration

7 The primary destination for Burkina Faso and Mali is the Ivory Coast; the primary destination for Nigeria, Benin and Ghana is Nigeria; the primary destination for Liberia and Sierra Leone is Guinea; and the primary destination for Senegal is the Gambia and France. The Burkina Faso-Ivory Coast migration corridor is the second largest in Africa, following the corridor between Algeria and France (ILO 2020).

8 Scharwatt, C., & Williamson, C. (2015). Mobile money crosses borders: New remittance models in West Africa. GSMA, London. Available: https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/04/2015_MMU_Mobile-money-crosses-borders_New-remittance-models-in-West-Africa.pdf

9 Adults used a variety of transfer mechanisms to send remittances, primarily dominated by friends and family (36%), the mobile phone (34%), banks (28%) and money transfer services (20%) (FINDEX 2017). For recipients, the primary mechanisms for receiving remittances was friends and family (41%), the mobile phone (33%), a bank account (24%) and money transfer services.

1.3. What Inhibits Financial Inclusion in WAEMU?

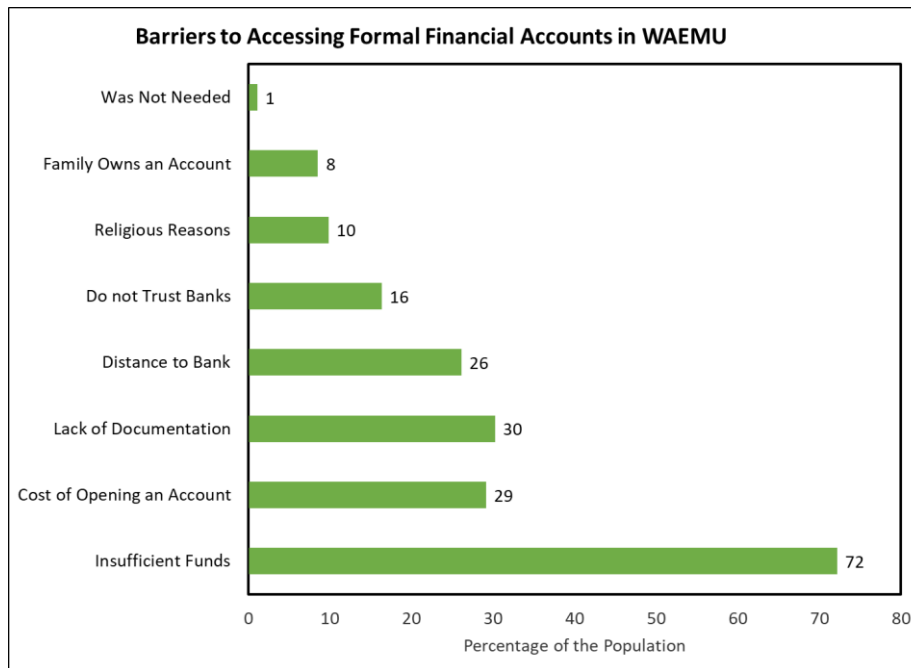


Figure 4. This graph shows the percentage of the population in WAEMU reporting various barriers to accessing formal financial accounts. Data are taken from the Global Findex Database 2017 (Demirgüç-Kunt et al 2020).

There are a number of barriers related to accessing formal financial institutions in WAEMU, including long distances, low population densities, relatively high account costs, lack of sufficient identification and the limited relevance of products and services (CGAP 2018). These can be summarized as the following:

1. **Low Income:** Poverty in WAEMU and poor-quality financial products stifle demand for financial services across the region. Amongst those adults in WAEMU without access to a formal banking account, 72% cited not having enough money to open an account.
2. **High Transaction Costs:** The lack of necessary documentation (30%) and the cost of opening a formal account (29%) were the other key reasons given for not using formal financial services (Figure 4). Côte d’Ivoire offers an illustrative example of the challenges and constraints to accessing formal financial services in the region. Opening a checking account requires an initial deposit of 50,000 FCFA (USD \$80)¹⁰ in the country, as compared to an average GDP per capita of \$1,600 (World Bank data repository), whereas cashing a check takes three times longer than in France (Morisset 2016).¹¹ These monetary costs are compounded by transaction costs required to reach a financial access point. Countries in the WAEMU region have few access points, varying from 5.6 bank branches and 4.9 automatic teller machines (ATMs) per 100,000 people in Senegal to 1.6 bank branches and 1.3 ATMs per 100,000 people in Niger.¹² In fact, 26% of those surveyed by FINDEX cited distance as a barrier to accessing an account (FINDEX 2017, Triki and Faye 2013).

¹⁰ BNI Bank Website

¹¹ “Why Ivorians do not use their banks?” <https://www.brookings.edu/blog/future-development/2016/07/14/why-ivorians-do-not-use-their-banks/>

¹² G20 Financial Inclusion database (2014,2017)

3. **High Information Costs:** Moral hazard contributes to high interest rates and insufficient documentation required to open an account.
4. **Imperfect Competition:** Imperfect competition between financial service providers, due in large part to regulatory challenges and roadblocks to interoperability.

2. The Potential of Digital Financial Services: The DFS Landscape in WAEMU

DFS are defined as “the broad range of financial services accessed and delivered through digital channels, including payments, credit, savings, remittances and insurance.” (AFI 2016). One type of DFS in particular, mobile money, has become particularly widespread across sub-Saharan Africa after originating in East Africa (Demirgüç-Kunt et al. 2020; Islam & Muzi 2021). DFS, especially mobile money services¹³, are particularly well-suited to combat the various market failures which limit financial inclusion in WAEMU (Table 1). DFS can indeed bypass the high transactions costs associated with formal banking in SSA through reduction of fees and balance requirements, as mentioned above, and also through reducing transportation and other transaction costs. In the case of mobile money, this is especially true if mobile money agent networks are fully developed in rural as well as urban areas (Aker & Mbiti 2011; Kikulwe et al. 2014; Suri & Jack 2016).¹⁴ DFS can also reduce high information costs through reducing problems of asymmetric information and moral hazard, and hence the need for setting high interest rates and requiring extensive documentation to open an account, as is commonly seen in the banking industry. This is accomplished through mobile phone technology, which digitally records information about all transactions made by an account holder, which can be used to compute a continuously evolving digital credit score that can then be used to access formal mobile financial services such as interest-bearing savings accounts or modest loans (Aron & Muellbauer 2019). For example, first-generation DFS services, such as mobile money, can address issues of low demand for financial services, in that they enable individuals to save money without the significant minimum balance requirements that often impede resource-limited households from accessing formal bank accounts in SSA (Kikulwe et al. 2014; Okello et al. 2018).

¹³ Mobile Money (MM) is a digital application that relies on the mobile phone network to deliver basic financial services – money deposits, money transfers, and withdrawals – without requiring bank account ownership. MM runs on simple mobile phone devices, which explains why its adoption has been rapid and expansive throughout Sub-Saharan Africa, where the telecommunications, transportation, and financial infrastructures are often lacking and transaction costs are high (Mothobi & Grzybowki, 2017; Aker, 2017; Suri, 2017; Aron, 2018).

¹⁴ Mobile money (MM) services generally follow the functioning principle of M-Pesa, the MM system developed in Kenya: consumers first have to create an MM account with an MM agent, providing a proof of identity document, and then to deposit money into their account. Once this step is complete, MM users can make PIN-secured transfers to any mobile phone owner in the country, receive money transfers from other MM users in the country (individuals, businesses, or government agencies), and withdraw money in the presence of MM agents.

Table 1. Mobile money as a solution to market failures

Market Failure	Mobile Money Solution
Poverty	No minimum balance requirements - anyone with a mobile phone can open an account
High transaction costs	Widely distributed MNO agent networks in rural and urban areas reduce travel and other transaction costs associated with brick-and-mortar banks
High information costs (moral hazard)	Digital record of mobile financial transactions serves a digital credit score, reducing moral hazard and enabling MM providers to forego high interest rates and extensive documentation requirements
Imperfect competition	Low-value, high-volume transaction business model of DFS encourages increased interoperability between MNOs within countries, MNOs and formal banks, and across country borders. Also, regulatory environment is more relaxed for DFS than for traditional banking sector.

Finally, mobile money can address the issue of imperfect competition through its business model of high-volume, low-value transactions and its more relaxed regulatory environment, in contrast to traditional banks which focus on a lower volume of higher value transactions and are subject to more stringent regulations (Naji 2020). Certain MNO providers have taken advantage of this encouraging regulatory environment and favorable business model to offer account-to-account (A2A) interoperability for their MM clients. This means that MM users can make transactions with accounts that belong to MM providers other than their own, or between their MM account and a traditional bank account. A2A interoperability is also available in some cases for international transactions (ex. an MM user in Burkina Faso sending money to a family member with an MM account with a different provider in Côte d'Ivoire). both within countries and across national borders. A greater degree of interoperability has been shown to promote increased financial inclusion, increased usage of MM services, and higher profit margins in several sub-Saharan African countries (Naji 2020). In order to better conceptualize how expanding DFS might help expand financial inclusion in WAEMU, it is important to first understand the WAEMU DFS ecosystem. The following section outlines the current state of DFS access and take-up in the WAEMU region, followed by a brief review of the DFS actors and products available to consumers across West Africa. This section highlights the potential for poverty reduction that DFS offers in WAEMU.

2.1. Opportunities and Evidence for First- and Second-Generation DFS

DFS products are often categorized into two types: first-generation services, such as M-money, which allows customers to store money, top-up airtime, send money to other users via SMS and withdraw already stored money for a small price per transfer or withdrawal (CGAP 2016); and second-generation services, which primarily offer other types of financial services – such as savings, credit, and insurance – through other digital channels.

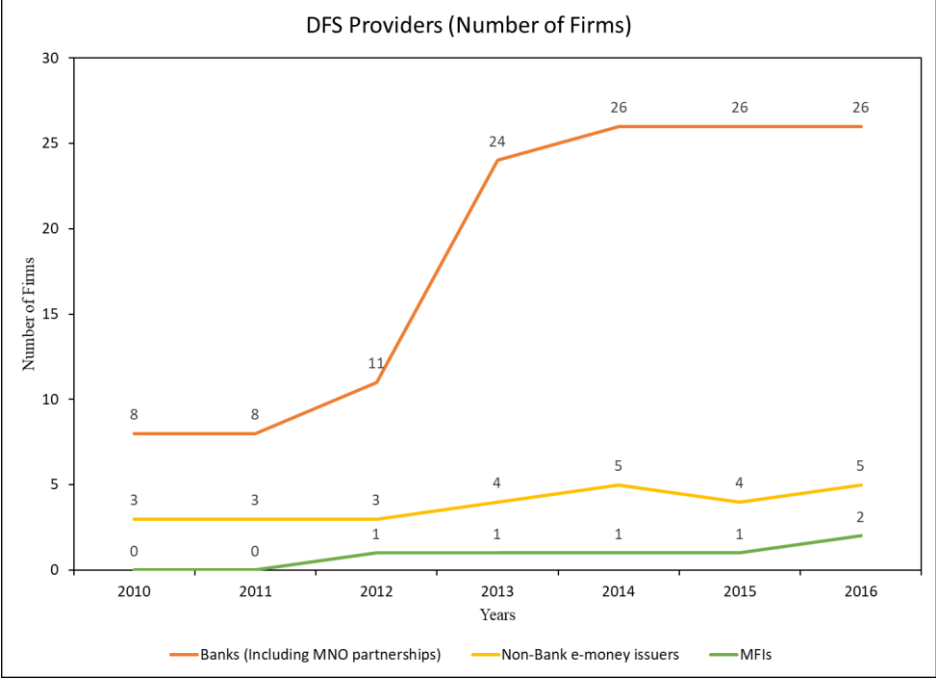


Figure 5. This figure shows the number of digital financial services provider firms operating in the banking (orange line), non-bank e-money (yellow line) and microfinance (green line) sectors, respectively (BCEAO 2017).

DFS can be provided by a number of financial and non-financial institutions, including banks, non-banking financial institutions, MFIs, MNOs and money transfer operators. All of these institutions offer DFS in the West Africa region, although in different models and combinations. The Central Bank of West African States (BCEAO) is the primary regulatory body for DFS and electronic money in WAEMU. BCEAO authorizes two types of models for issuing electronic money in WAEMU: **bank-based or non-bank-based**. In the bank-based model, the customer has a contractual relationship with the bank, and the bank is licensed or permitted by the regulator to provide mobile financial services (AFI 2019). In such models, the bank often outsources certain transaction details to a partner, such as an MNO. In the non-bank-based model, then, the customer has a contractual relationship with a non-bank service provider, and is permitted to provide digital financial services (AFI 2019). Figure 5 shows the relative importance of first-generation DFS providers, based upon the number of firms providing them (rather than the number of clients).

While digital channels vary broadly,¹⁵ the mobile phone remains one of the most widespread. Over the past 12 years (see Figure 6 below), mobile phone adoption in the region has grown rapidly. In 2017, FINDEX estimated that 67% of individuals had a simple or smart mobile phone (Demirgüç-Kunt et al. 2020).

¹⁵The term “digital channels” refers to the “internet, mobile phones, ATMs, POS terminals, NFC-enabled devices, chips, electronically enabled cards, biometric devices, tablets, phablets and any other digital system.” (AFI 2016)

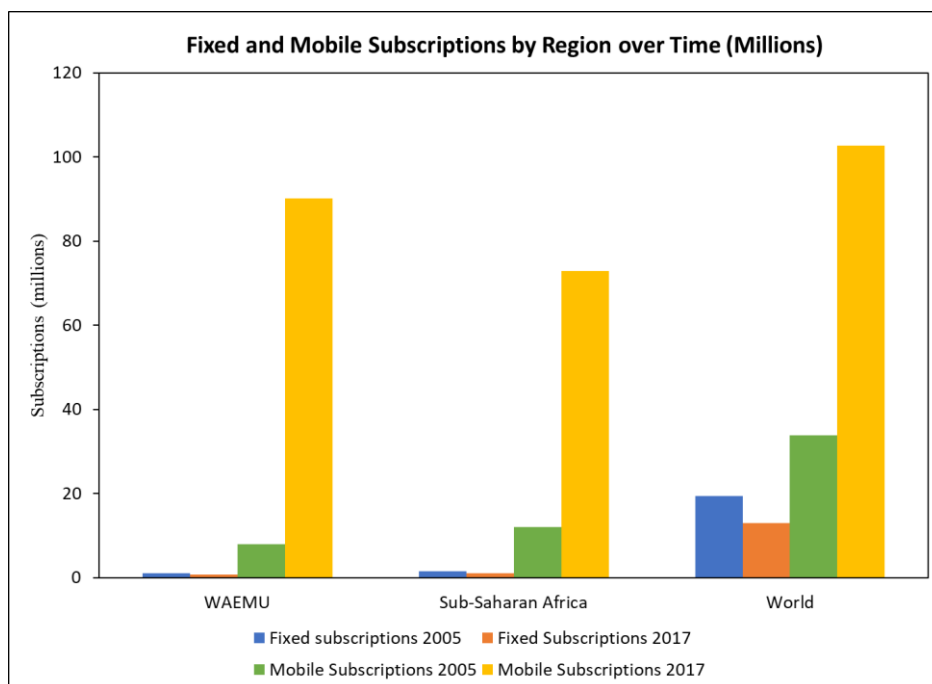


Figure 6. This figure shows the number of fixed and mobile subscriptions in the WAEMU, SSA, and worldwide in 2005 and 2017. Data are taken from the Global Findex Database 2017 (Demirgüç-Kunt et al 2020).

One of the most visible and ubiquitous DFS products is mobile money (M-money), or electronic money. M-money products usually involve “a set of applications that facilitate a variety of financial transactions via mobile phone, including transmitting airtime, paying bills and transferring money between individuals.” (Aker and Mbiti 2010). Aker and Mbiti (2010) described M-money as a product that “allow(s) the user to store value in an account accessible by the handset, convert cash in and out of the account, and transfer value between users by using a set of text messages and personal identification numbers (PINs). A “pseudo account” can be established by purchasing “electronic money” (e-money) from an agent, usually a third party or someone who works for the mobile phone operator or bank. The user can then send e-money to another recipient with a phone, who then withdraws the e-money from their local transfer agent. Fees are generally charged for each transaction.”

Since 2005, m-money products have spread globally. Over the past 10 years, there has been increasing evidence of the impact of digital financial services – and in particular, mobile money – on financial inclusion, risk management, and poverty (Aker and Cariolle, 2020; Cariolle, 2020; Suri et al, 2021). Studies demonstrate that simple mobile money reduces the cost of G2P and P2P transfers (Aker et. al. 2016, Jack and Suri 2014); increases access to private cash transfers (Jack and Suri 2014, Blumenstock et al 2014); smooths consumption in the face of shocks (Jack and Suri 2014); and improves savings, reduces poverty, and strengthens food security (Aker et al 2016, Jack and Suri 2014, Bahety 2020).

These mobile money services have great potential to expand quality of life and overall wellbeing in West Africa. For instance, Aker et al. (2016)¹⁶ find that those who received cash transfers through mobile money accounts in Niger after a drought saw improvements in household welfare with increases in diet diversity, improved child nutrition, and shifts in intrahousehold bargaining power for women. Studies conducted in Kenya, one of the early adopters of mobile

16 See: <https://www.journals.uchicago.edu/doi/full/10.1086/687578>

money in Sub-Saharan Africa, demonstrate that mobile money reduces transaction costs and allows for more flexible risk sharing between households, reducing their vulnerability to economic shocks. This study also found that access to mobile money transfer services increased per capita household consumption and reduced poverty in the longer-term (Jack and Suri 2014, 2016).¹⁷

These benefits of mobile money are primed to transform how governments and individuals address poverty and construct socioeconomic safety nets. Potential for G2P through mobile money offers one example. Gentilini (2020) finds that 195 countries have implemented over 1,000 social protection measures as of 2020, more than 200 of which involve some form of cash transfers to the poor. 59% are new programs, implying a significant increase in coverage. As of 2019, approximately 290 mobile money deployments were active worldwide (GSMA 2019), 144 of which were in SSA and 59 of which were in WAEMU (GSMA 2019). Furthermore, 100 million unbanked adults received their payments in cash as of 2017 (Gentilini 2020). This growth has coincided with an increase in mobile money adoption. Reports indicate a total estimated number of 163 million accounts in WAEMU alone as of 2019.

DFS in West Africa typically focus on first-generation services (CGAP 2016), which are largely regulated by BCEAO.¹⁸As of 2019, there were anywhere between two and six MNOs providing first-generation mobile money services in a given country of WAEMU, as shown by Figure 7 (Andersson-Manjang & Naghavi 2021, Vasudevan et al. 2016).

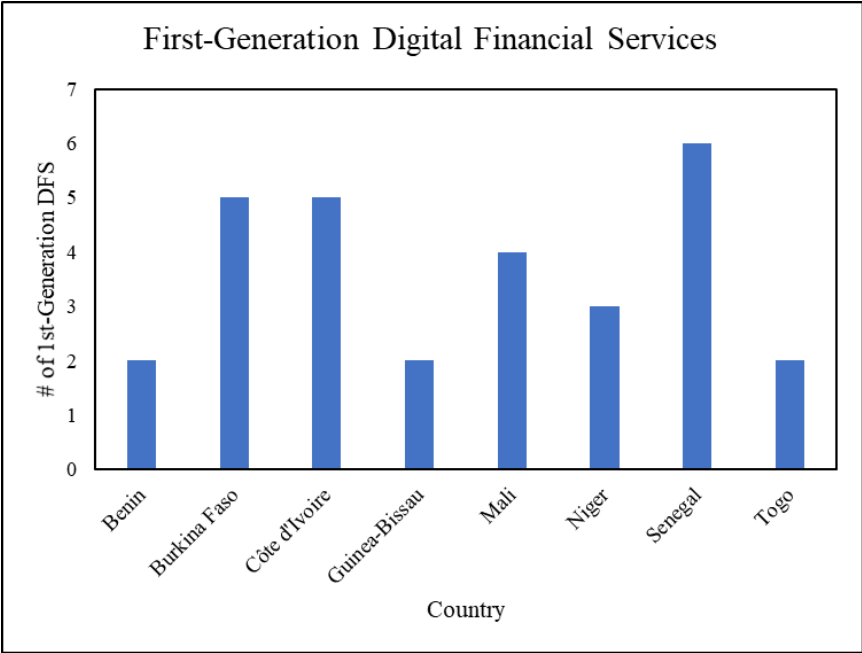


Figure 7. This figure shows the number of first-generation digital financial services in each of the WAEMU countries in 2019 (Andersson-Manjang & Naghavi 2021, Vasudevan et al. 2016).

¹⁷ See: https://science.sciencemag.org/content/354/6317/1288?casa_token=_HuHLKowHC4AAAAA:zS5M7z6Pat9JDvduREGZ4ZioZwCxya-Ah9krxXdaDGvrn5xy7bXKRfUla_JNODTtnRmJdZc1k72lwg
¹⁸ In Ivory Coast, the microfinance institution Advans partnered with MTN to link existing clients with their MTN MM e-wallet to so as to be able to use the e-wallet to access the savings options provided by the client’s MFI account through USSD services (Advans 2018). Tigo Senegal partnered with Bima, a microinsurance specialist, to offer insurance services to its customers. (Stuart 2014). Orange Mali and NSIA developed an associated life/disability and maternal health insurance product called Tin Nogoya on the Orange Money platform.

These MNO- provided m-money services offer a wide variety of first-generation financial services products. All MNOs offer person-to-person (P2P) domestic payments (what we have called domestic remittances), online billing (with the exception of TMoney in Togo), and cash-in and cash-out services. None of the products offered the ability to top off airtime or make direct payments to merchants with mobile technology. Similarly, none of the services offered person-to-government (P2G) payment capacities. The following graph in Figure 8 summarizes the other financial services offered by various first-generation products currently active in WAEMU, which include government-to-person (G2P) payments, other bulk payments, and sending and receiving remittances.

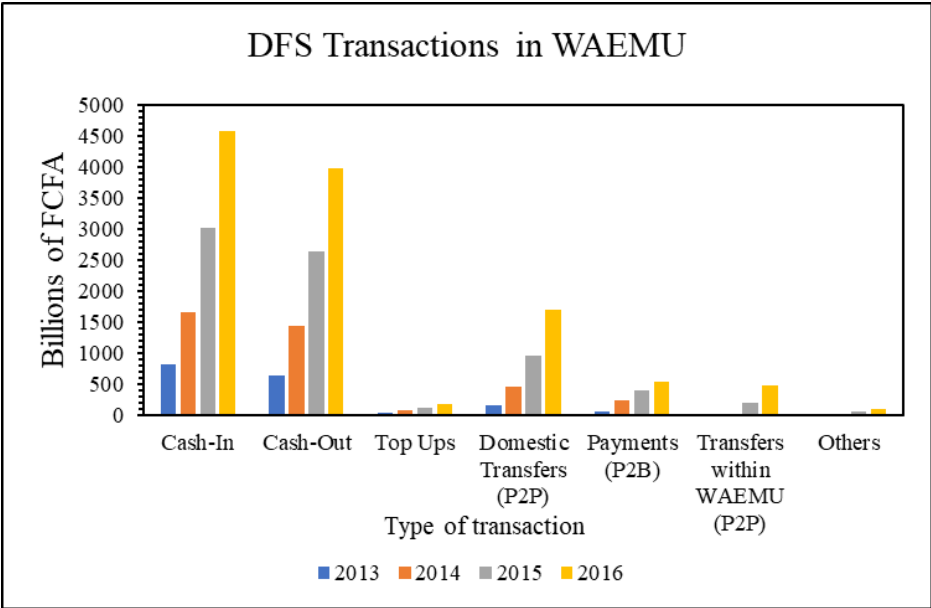


Figure 8. This figure shows the total value of various categories of first-generation DFS transactions in WAEMU in billions of CFA francs from 2013 to 2016 (BCEAO, 2017).

Expanding DFS in WAEMU promises to further strengthen access to and usage of first-generation services such as M-money in the region. However, it also stands to bolster access to second-generation services and transform financial inclusion in the region as a result. While second-generation DFS have proliferated across East and Southern Africa—Kenya alone had 18 digital credit products by 2017 (EGAR 2017)—WAEMU has yet to catch up with other parts of SSA in expanding second-generation DFS. Second-generation programs offering digital savings and credit, credit scores, and digital services can rapidly grow if well-developed: in Kenya, for example, M-Shwari (a digital savings and credit product launched in 2012) boasted over 10 million users in 2015, representing 47% of Kenya’s adult population (CGAP 2016). M-Pawa in Tanzania and MoKash in Uganda offer additional savings and credit services. M-Shwari provides loans at an annual interest rate of 3-5% (Safaricom),¹⁹ but also charges clients high interest rates for loans, at an annual interest rate of 90%. This is approximately twice the average interest rate that microfinance institutions (MFIs) charge for loans (CGAP 2016).

19 <https://www.safaricom.co.ke/personal/m-pesa/do-more-with-m-pesa/loans-and-savings>

Though it lags behind other SSA regions, WAEMU also offers some limited examples of innovation in and expansion of second-generation financial services. Observers have reported relatively new deployments in Côte d’Ivoire, Benin, Nigeria, and Togo, and bank-MNO partnerships have grown rapidly. In Côte d’Ivoire, for example, MFI Advans has partnered with MTN to link existing MFI clients directly with their M-money account, so as to be able to access the savings more efficiently. As of 2017, 188 agricultural cooperatives had used this service (Advans 2018).²⁰ In Mali, Orange introduced a savings product called *Sini Tonon* in partnership with NSIA Bank linking savings accounts digitally to clients’ mobile phones (GSMA 2016).²¹ In Senegal, Niger, and Côte d’Ivoire, MNOs are exploring ways to use automated credit-scoring algorithms that use client mobile transaction histories to make instantaneous loan decisions (CGAP 2016).

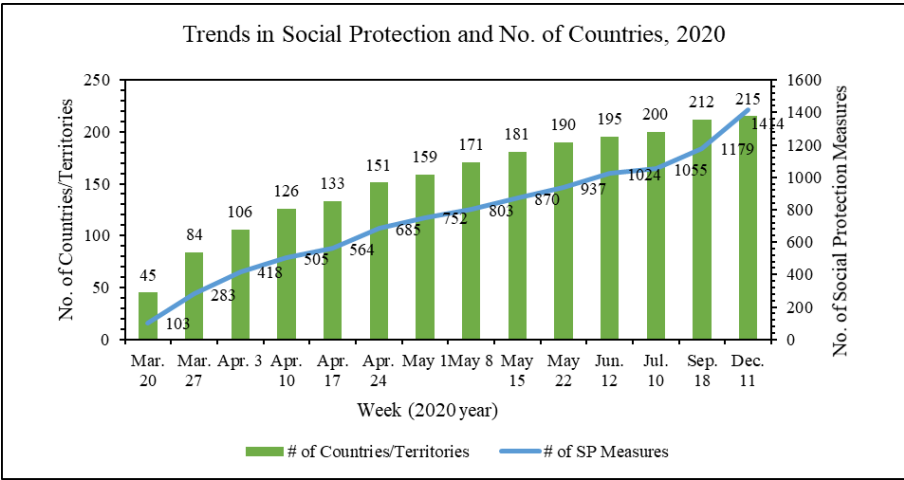


Figure 9. This figure shows the number countries and territories instituting social protection measures and programs between March and December of 2020 (green bars) and the number of overall social protection measures worldwide during the same period (blue line) (Gentilini et al. 2020).

Beyond digital savings and credit, second-generation digital insurance products are also on the rise in WAEMU, though they lag behind bank-MNO partnerships in growth. Such models often involve an incentive scheme. Customers are encouraged to spend specific amounts on airtime or maintain a certain balance to qualify for tiered coverage levels, or to pay a premium for either daily, weekly, or monthly coverage.²² In Ghana, Tigo introduced mobile microinsurance in 2010. MTN followed suit in 2011, adding over 2.7 million policyholders (National Insurance Commission 2015).²³ ²⁴ In Senegal, Tigo partnered with Bima, a regional microinsurance specialist, to offer insurance services. JUMO in Nigeria has also entered the second-generation DFS space, though in a more restricted capacity, as digital credit products in Nigeria require a bank account, salaried employment, and an application via a website or mobile app—which many potential customers lack. Finally, in Mali, Orange Mali and NSIA partnered to develop an associated life, disability, and maternal health insurance product called *Tin Nogoya*. The insurance activates automatically when a savings balance reaches 40,000 FCFA, and gives the

20 See: <https://www.advansgroup.com/media/news/advans-ci-wins-the-ema/>

21 GSMA 2016. Case Study: Orange Mali

22 There are also “freemium” models which combine both of the above models (GSMA 2018). GSMA 2018. Spotlight On Mobile-Enabled Insurance Services

23 NIC 2015, Mobile Insurance And Risk Framework In Ghana

24 Prashad, Pranav, Jeremy Leach, Aparna Dalal, and David Saunders. "Mobile phones and microinsurance." Enterprise development & microfinance 25, no. 1 (2014): 72-86.

user 12 months of life or disability and maternal health insurance (GSMA 2015).²⁵ Therefore, while second-generation services continue to lag behind more popular and widely-available first-generation services, the WAEMU second-generation DFS ecosystem continues to diversify.

2.2. DFS Providers in WAEMU: An Evolving Ecosystem

2.2.1. Banking Institutions

Partnerships between banks and MNOs made up 29 of the 33 mobile money initiatives in WAEMU as of 2015 (BCEAO 2017). Traditional banks are thus the most ubiquitous mobile money providers in the region (Figure 8 in section 2.1 above). Of the banks in WAEMU, NSIA, Ecobank, Banque Atlantique, Bank of Africa (BOA), and the West African subsidiaries of BNP Paribas and Société Générale have prioritized partnerships with MNOs. As of 2016, Ecobank was the largest bank provider of mobile money, followed by Banque Atlantique and NSIA. Amongst the MNOs, Orange, MTN, Moov, and Airtel are the dominant mobile money players in the WAEMU market, with a strong presence in several countries across the region. According to BCEAO, Orange has the largest presence in the WAEMU market, with Orange Money available in four WAEMU countries (Senegal, Mali, Côte d'Ivoire, and Niger). Orange has 38% of the market share in WAEMU (BCEAO 2017), followed by MTN, Moov and Airtel.²⁶

These bank-MNO partnerships find creative solutions to DFS challenges. For example, UBA Bank in Senegal and NSIA Bank in Côte d'Ivoire have collaborated with over-the-counter (OTC) providers to offer prepaid cards, which enable non-banked individuals to make e-commerce purchases and use ATMs.²⁷ Yet the lack of OTC access points across WAEMU countries, especially in rural and peri-urban areas (CGAP 2016), continue to constrain access to these services—²⁸ highlighting the challenges that high transaction costs present to expanding financial inclusion and DFS in WAEMU.

2.2.2. Microfinance Institutions (MFIs)

While MFIs in WAEMU are ubiquitous, they have generally been slow to develop DFS. As of 2016, only two MFIs provided DFS in the region. As of 2017, there were approximately 13.6 million clients using DFS in WAEMU (BCEAO 2017).²⁹ Some MFIs have started experimenting with agent banking through the support of banks and merchant networks. For example, MicroCred Senegal launched a branchless banking pilot in 2014 with the support of the MasterCard foundation and IFC. In Mali, *Soro Yiriwaso* planned on developing and testing a number of digital savings and credit products such as village savings and loan associations (VSLAs) and commitment savings accounts linked to MFIs via mobile accounts (Global Resilience Partnership 2015).³⁰

Other MFIs, such ASUSU in Niger, MFI Advans in Côte d'Ivoire, or the *Association pour la Solidarité des Marchés du Bénin* (ASMAB Microfinance) in Benin, have developed partnerships with MNOs to link their respective employee accounts and savings accounts with mobile money

25 Case Study Orange Mali: Reaching Women Customers With Mobile Savings And Insurance. GSMA. March 2015

26 Overview, BCEAO 2017

27 A transaction is considered to be over the counter (OTC) when it is conducted by an agent's account on behalf of the customer (GSMA 2015).

28 <https://www.jonijoni.net/index.php/fr/>

29 BCEAO 2017, Annual report

30 <https://www.globalresiliencepartnership.org/teams/linking-social-financial-capital/>

wallets for easy withdrawals and deposits. According to CGAP, “ASMAB in Benin was the first MFI to obtain an e-money issuer license in WAEMU. This has enabled ASMAB to develop the CARMES platform, allowing clients to conduct several types of transactions (savings, transfer, credit imbursement, bill payment, etc.) via their mobile phone. ASMAB expects to partner with the MFI professional association in Benin (the Alafia Consortium) to allow its members to offer the same mobile banking services to their clients.” (CGAP 2016). However, it remains unclear whether this platform will generate traction for similar services (CGAP 2016).

2.2.3. Non-Banking Financial Institutions

In addition to banks, non-banking financial institutions also provide DFS throughout WAEMU (BCEAO 2017). A number of companies initially emerged in this space, including Ferlo, Inova, CelPaid, and Qash. Yet these non-banking institutions struggle to compete with banks. Two of these DFS companies have already shuttered their operations (CGAP 2016).

Several technology companies that focus on payments but do not issue e-money have also emerged in WAEMU in recent years. These non-banking DFS technology companies partner with banks and other institutions to provide payment platforms for domestic and cross-border money transfer services. In general, these technology companies fare better in the market for non-bank DFS, in part because they complement services provided by banks and can work together to provide products and platforms. eMoney Solutions, a technology provider offering an e-money platform and point-of-sale (POS) devices (essentially a wireless, portable cash register for smartphones and tablets with an Android operating system), offers one helpful example. eMoney Solutions partners with the postal service in Benin and Niger, demonstrating the effectiveness of public-private partnerships in this space. LemonWay, a French payment services provider operating in Mali, has partnered with the Banque Internationale pour le Mali to offer PIN-based based payment delivery compatible with any mobile carrier. LemonWay has also experienced moderate success due in part to this partnership.

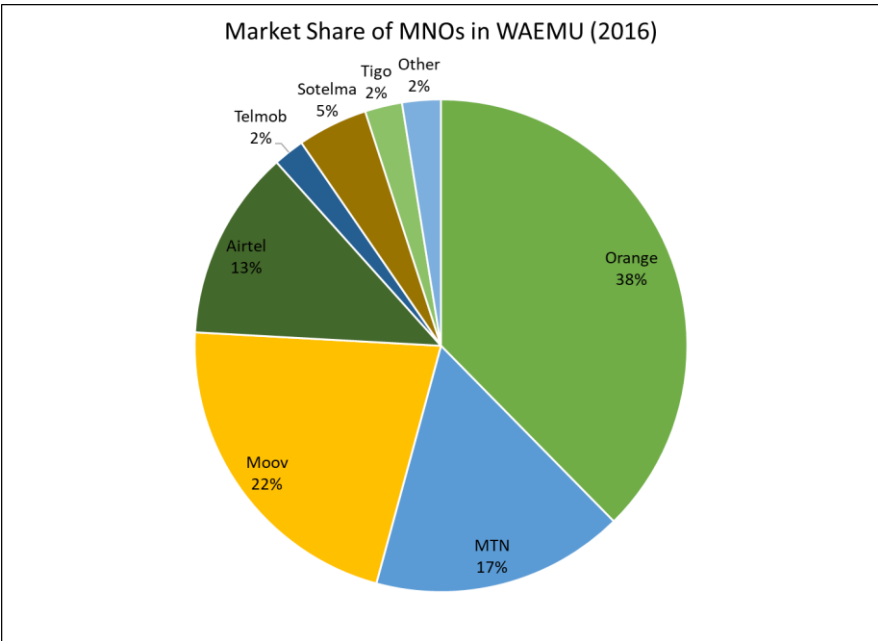


Figure 10. Market share of all MNOs operating in WAEMU countries for the year 2016 (BCEAO 2017).

3. DFS in WAEMU: Improving on Market Failures

As the previous section makes clear, the landscape for first- and second-generation DFS across WAEMU continues to grow and evolve with various bank, non-bank, and technology partnerships that offer unique financial services solutions. Such services could increase households' access to and

usage of a number of formal financial services in WAEMU by addressing market failures that restrict financial inclusion amongst low-income households. The following sub-sections detail how mitigating market failures such as high transaction costs and imperfect information can increase households' usage of formal financial services.

3.1. Reducing Transaction Costs

Expanding access to DFS in WAEMU serves to reduce transaction costs for financial inclusion by shortening distances between clients and financial access points, lowering the cost of sending money compared to market competitors, and increasing the potential for government-to-person (G2P) and person-to-person (P2P) transfers. Digitizing payments of government wages and social program benefits has the potential to dramatically reduce costs, increase the level of efficiency and transparency in payments, and familiarize more individuals with mobile money (Klapper & Singer 2017). Additionally, when the government adopts DFS to disburse G2P transactions, they can act as a catalyst for promoting the proliferation of digital payments in other sectors, including P2P, G2P, G2B, B2P, etc. (Klapper & Singer 2017). A study of the Prospera conditional cash transfer program in Mexico found that transition to DFS payments promoted increased financial inclusion for poor households through crowding in use of other DFS services (Mariscal & Rojas-Lozano 2020). Research has shown similar positive effects on financial inclusion when governments in sub-Saharan Africa adopt DFS for their social protection programs, especially in the context of the ongoing Covid-19 crisis (Ebuenyi 2020). Indeed, mobile money (MM) has been used during the Covid-19 crisis as a way to dramatically scale up the delivery and scope of social protection programs, especially those aimed at informal business owners; for example, the Novissi program in Togo has enabled the government to reach increased numbers of taxi drivers and other informal sector workers, while simultaneously encouraging digital payments for utility bills (Davidovic et al 2020). DFS also increases financial inclusion of the poor by making person-to-person (P2P) transfers less costly and more convenient due to a number of factors. For example, fees for MM P2P transfers are much lower than traditional money transfer services, and the wide distribution of MM agent networks reduces travel and other transaction costs; this enables more frequent and lower-value P2P transfers in SSA countries (Okello et al. 2018). One study found that adoption of MM in 12 SSA countries significantly increased the propensity to both send and receive domestic P2P remittances in response to idiosyncratic shocks, thus leading to increased financial inclusion and resiliency in the face of shocks; it was found that the effect of adoption on sending was significantly greater in magnitude than the effect on receiving (Koomson et al. 2021).

In general, WAEMU countries are characterized by relatively small economies and highly dispersed populations. With the exception of Côte d'Ivoire, all of the WAEMU member states are classified as least developed countries (UNCDP 2018), with a combined GDP of 125 billion USD (World Bank 2018). Populations are primarily rural, with 60% of households living away

from urban centers (World Bank 2018). These characteristics increase the transaction costs of accessing financial services, which often rely upon physical infrastructure, such as bank branches and ATMs (with the exception of mobile money) (Beck and Cull 2013, Beck et al 2011). Formal financial service providers face an expensive tradeoff between investing in more access points closer to potential customers in remote, largely rural areas, or providing fewer access points in more densely populated areas.³¹ This is evident in the density of bank branches and ATMs in West Africa, suggesting that most banks have chosen to focus on providing fewer access points and to concentrate on urban areas: On average, there are 3.9 bank branches and 4.8 ATMs per 100,000 people for the entire region (World Bank Indicators 2018). Access challenges for traditional financial institutions such as banks help explain why expanding financial services in WAEMU has been slow and incremental.

However, DFS offers a cost-cutting alternative to formal ATM expansion and therefore helps to mitigate high transaction costs. Accessing DFS only requires access to a mobile phone handset and access to an agent. For the former, the reduced costs of mobile phone handsets have substantially increased their adoption in West Africa and worldwide. The majority of the population now enjoy access to basic mobile phones. For the latter, DFS agents are typically retailers of a variety of sizes and in various locations.³² DFS providers should therefore, in theory, be able to reduce investments in their own infrastructure significantly and minimize fixed costs by leveraging existing retail or mobile phone outlets. Whereas a traditional bank branch can cost up to \$250,000 and an ATM can cost \$10,000, an agent with a mobile phone can cost \$400 (CGAP 2018).³³

The monetary cost of transferring money digitally (such as via M-money) is also lower than the transaction costs that users incur when sending remittances through banks or money transfer companies, such as MoneyGram and Western Union. As outlined above, estimates suggest the cost of cross-border payments in WAEMU is one of the highest globally (BMGF, GSMA 2015). Research in Kenya and Niger suggests that the cost of sending money transfers via DFS are the same, or cheaper, than traditional services. This includes informal methods of sending remittances, such as through friends and family members, the bus, or local remittance providers (Jack and Suri 2014, Aker et al 2020). Thus, DFS—especially the use of M-money—offers a plausible solution to help reduce transaction costs and expand financial inclusion in WAEMU.

3.2. Reducing Information Costs

Similarly, DFS stands to improve financial inclusion in WAEMU by lowering know-your-customer (KYC) compliance requirements and leveraging M-money transactions to create credit scores for unbanked individuals.

KYC issues arise in WAEMU due to uneven access documentation in the poorest households. Employment within and across WAEMU is primarily in the informal sector, with approximately 65% of the population engaged in informal employment (WTO 2017).³⁴ In the absence of

31 Hallum, Christian, and Kwesi W. Obeng. "The West Africa Inequality Crisis: How West African governments are failing to reduce inequality, and what should be done about it." (2019).

32 While the definition of the agent varies considerably by country, agents are linked under contractual agreements with a parent Mobile Network Operator (MNO), or a partnership between a prudentially regulated bank and an MNO (Aron 2017).

33 Gina Porter 2011

34 WT/TPR/362

universal identification, households engaged in informal work often do not have formal documentation, such as an enterprise registration or land title.³⁵ This reduces poor households’ access to formal financial institutions (Beck and Cull 2013), as they cannot meet KYC requirements. While many countries have gotten around this issue by creating tiered KYC accounts, many of these accounts remain basic and unequipped to meaningfully link poor households to bank accounts.³⁶

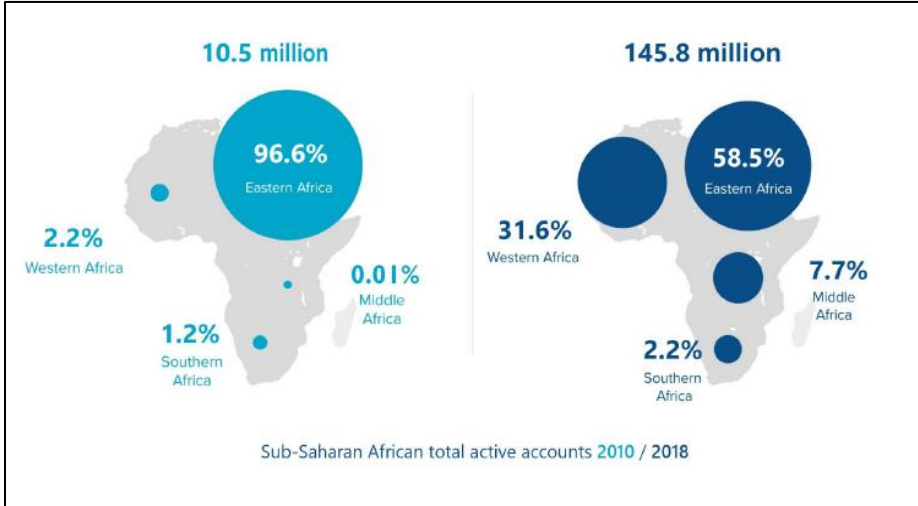


Figure 11. This figure, provided by GSMA, shows the relative share of active mobile money accounts by region of Sub-Saharan Africa in 2010 (left) versus 2018 (right). From the figure, it is apparent that account ownership has been growing particularly rapidly in the Western Africa region in recent years (GSMA 2017, GSMA 2020).

DFS have the potential to overcome information asymmetries and increase access to formal financial services in two ways. First, mobile money platforms demand more relaxed KYC and documentation requirements than formal banks (CGAP 2016). In the absence of national identification documents, MNOs have been able to identify other documents which could be used as a substitute, such as letters from village leaders (Frydrych and Aschim 2014). Second, since mobile money transfers are recorded digitally, mobile money records can be used to create credit scores as an alternative to existing documentation (Aron 2017; 2018). This can expand the types of customers that are eventually able to join more traditional banks, by presenting their credit scores in lieu of other forms of documentation that they lack access to. Yet even if clients are unable to open formal bank accounts, mobile money accounts help to replace some traditional functions of banks and therefore increase financial inclusion. One way they achieve this is by expanding access to safe and reliable savings accounts—especially for women and other vulnerable groups. In addition to facilitating transfers, mobile money accounts provide a secure location to store money privately. This can reduce the observability of the amount and timing of cash transfers and remittances, which could affect women’s bargaining power within the household and increase savings for education, childcare, and consumer goods as a result (Aker 2016). The potential of MM accounts for use as savings tools among unbanked individuals is becoming more apparent with time in West Africa, as can be seen In Figure 11, which shows that the relative share of MM accounts in West Africa relative to other regions increased significantly between 2010 and 2018.

35 In April 2020, the World Bank approved \$273 million in International Development Association (IDA)* financing for Togo, Benin, Burkina Faso and Niger for the West Africa Unique Identification for Regional Integration and Inclusion (WURI) Program to build the foundational identification systems.

36 Gelb A. and Castrillon, D. (2019). Identifying and Verifying Customers: When are KYC Requirements Likely to Become Constraints on Financial Inclusion? Center for Global Development; Dec 17.

4. The Pitfalls of DFS in WAEMU

4.1. Impact, Adoption, and Usage

While mobile money and DFS have expanded in WAEMU in recent years, heterogeneity in usage, a stark contrast between adoption and usage, low agent density, and low interoperability of services remain barriers to DFS as a clear path to financial inclusion in WAEMU. Furthermore, studies suggest that M-money and second-generation services, such as digital credit and insurance, do not guarantee increased financial inclusion, either at the individual or the firm level.

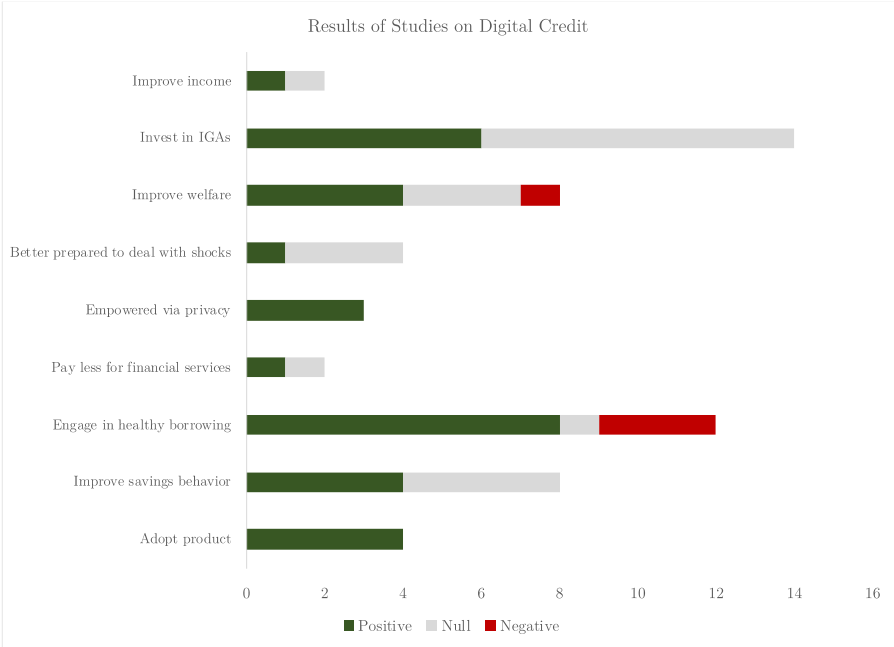


Figure 12. This figure, using data from CGAP, shows the results of a number of studies conducted on digital credit, including the number of studies that found positive, neutral, or negative effects of digital credit on various firm-level outcomes (CGAP 2020).

For evidence of this, see Figure 12, which shows that several studies found negative effects of digital credit on various firm-level outcomes. In fact, Bharadwaj and Suri (2020) and Bharadwaj et al. (2020) demonstrate that the existence of these services does not indicate increased short- or long-term financial inclusion. DFS researchers and policymakers also lack evidence of how DFS impacts agricultural outcomes, small and medium enterprise (SME) productivity, or the sustainability of long-term financial inclusion. Thus, it remains impossible to know whether sustained investments in DFS offer a sure and reliable path to expanding financial inclusion in WAEMU.

Furthermore, heterogeneity in deployments and adoption across the region makes M-money offerings uneven, which in turn reduces the potential for DFS to impact financial inclusion in WAEMU (see Figure 11 above for a depiction of heterogeneity in MM deployment at the regional level). At the country level in West Africa, amongst all mobile money subscriptions, Côte d’Ivoire, Mali, Benin, and Senegal have a particularly high number of accounts (see Figure 13), in part due to strong cross-border remittance flows between these countries (see Figure

3) (BCEAO 2017, GSMA 2016)³⁷. Other countries in the region, while also experiencing growth in numbers of accounts, lag further behind.

Despite the number of M-money subscribers across WAEMU, there also remains a stark contrast between mobile money adoption and usage, as defined by the number of “active” accounts. While the definition of “active accounts” varies, a common definition is an account that “has been used to conduct at least one transaction during a 90-day period.” (GSMA 2019).

Using this definition as a benchmark, the number of active accounts in WAEMU region fell from 38.78% of total accounts in 2015 to 34.6% in 2016 (Figure 13; see also BCEAO 2015, 2016; GSMA 2019).³⁸ Information gaps about mobile phone and internet access contribute to these adoption and usage challenges (Cariolle, 2020). Given that access to mobile phones and internet penetration currently exceeds bank penetration in the WAEMU region, one might expect that DFS could dramatically improve financial inclusion across the region. Yet there are also stark differences in access to internet and mobile technology among demographic groups in WAEMU (Figure 13). These inconsistencies could hinder the equitable expansion of financial inclusion in WAEMU through DFS. Though mobile penetration in WAEMU is widespread, familiarity with and use of DFS is low. The 2017 Global FINDEX Database highlights this discrepancy— according to the database, only 21.6% of people in WAEMU have used a mobile phone or internet to access their financial or e-money account, and less than 6% have used the internet to pay bills or make purchases. The richest 40% of the population is almost twice as

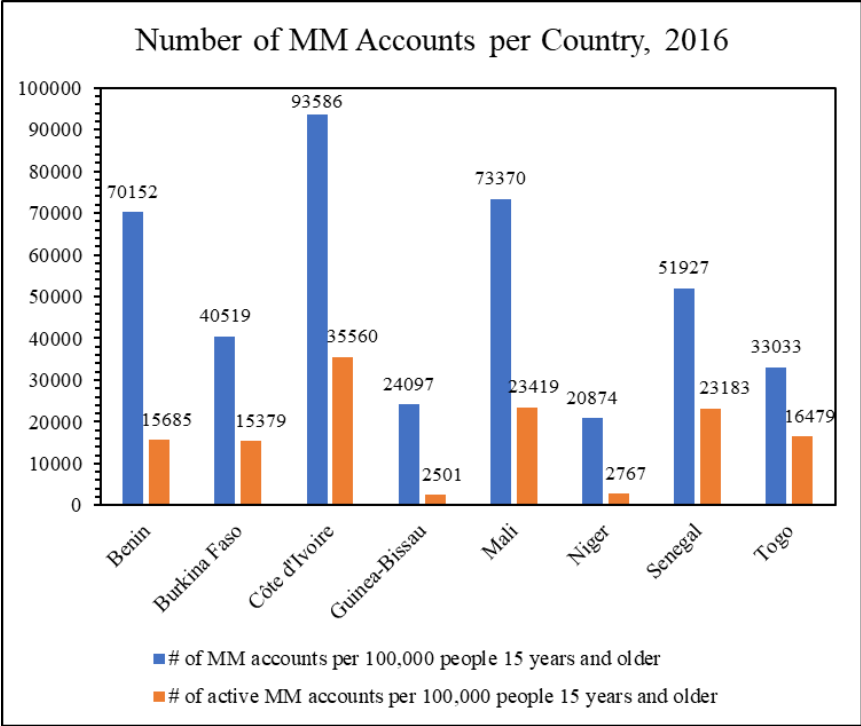


Figure 13. Number of total MM accounts and active MM accounts per 100,000 people age 15 years and older per country in 2016 (BCEAO 2017).

³⁷ Overview of Mobile Financial Services Data In The West African Economic And Monetary Union (WAEMU) In 2016. BCEAO 2017

³⁸ One explanation for this has been that because own multiple SIM cards registered with DFS, this could also be a factor inflating the number of total subscribers, while keeping active subscriber counts low (IFC 2015). Lonie, Susie, Meritxell Martinez, Christopher Tullis, and Rita Oulai. "The Mobile Banking Customer that Isn't: Drivers of Digital Financial Services Inactivity in Côte d'Ivoire." International Finance Corporation (2015).

likely as the poorest 60% of the population to have used the internet to make payments and purchases. These gaps are notably gendered as well. Women are half as likely as men to have made payments and purchases online. Furthermore, those with at least a secondary education were more than three times more likely to do so than those with less educational attainment.

Documentation issues help to explain why a notable gap between DFS adoption and usage persists. Despite BCEAO raising the limit of e-money account transactions for unidentified customers in 2015 (leading to greater adoption), providers often do not offer this option to customers in practice (prohibiting usage). Furthermore, when second generation DFS are offered, they can only be provided through partnerships with financial institutions. This requires users to have the associated identification documents. Strict KYC requirements pose a barrier to further innovation in, and expansion of, DFS in WAEMU. Regulators must examine why the raised limit has not led to results or create alternative solutions to the identification conundrum. For example, introducing risk-based KYC requirements, like in Mexico, for both accounts at a financial institution and with e-money issuers is one strategy to encourage higher adoption (CGAP 2016).³⁹

Identification challenges exist on the telecommunication side of DFS as well. Identification is required to purchase a SIM card — a key prerequisite for using mobile money. This SIM requirement may prove problematic for many people who do not possess identification. Thus, the BCEAO should coordinate with different national governments and telecom authorities to ramp up efforts to provide people with identification, to ensure that DFS remains accessible.

Low agent density also threatens the forecast for DFS in WAEMU and decreases adoption and usage. An extensive agent network is critical for providing DFS customer service, especially in remote towns and villages. Certain conveniences of mobile money, such as accessibility, are proportional with the ubiquity of e-money agents. These agents provide essential customer services, such as handling cash deposits and withdrawals. Agent networks also differentiate DFS from banks, whose limited reach inhibits their ability to extend payment services nationwide. Expanding the DFS market thus requires making sizeable financial and organizational investments to build an extensive agent network (CGAP 2016, UNCDF 2018)⁴⁰.

The growth of the MNO agent networks is not uniform within different WAEMU countries. The Microfinance Information Exchange (MIX) FINclusion Lab finds that agent networks in Côte d'Ivoire, Senegal, and Benin have been growing rapidly but are more concentrated in urban and commercial centers, and more dispersed in rural and agricultural areas. In Benin, financial access points actually contracted in 29 out of 77 communes between 2016 and 2017 while in Côte d'Ivoire, 59% of all access points were concentrated in Abidjan district in 2017 (FINclusion Lab 2018)⁴¹. Not only are agent networks heterogeneous across countries, but there are only 600,000 agents total in WAEMU—approximately 228 for every 10,000, dispersed unequally between rural and urban areas. Like ATMs, the density of agents across WAEMU remains insufficient for widespread DFS expansion.

Interoperability challenges between MNOs, DFS providers, and banks also represent a barrier to DFS adoption and usage in WAEMU. International remittances enabled by mobile money have been growing globally, with \$7.3 billion processed in 2019, compared to \$5.5 billion in 2018. This growth has been driven primarily by strong provider appetite for cross-border

39 CGAP 2016

40 UNCDF 2018. Benin – How is the digital finance market evolving?

41 <https://public.tableau.com/profile/finclusionlab#!/>

interoperability and integration with traditional remittance service providers (RSPs) like the popular money transfer operators MoneyGram and Western Union (GSMA 2019).

For instance, Mowali is a pan-African mobile money interoperability project implemented jointly by Orange and MTN. Mowali hopes to “maximize the experience of both operators, together covering over 100 million registered mobile money accounts and mobile operations in 22 Sub-Saharan African markets” (GSMA 2018). This is a useful example of emergent interoperable systems in Africa (GSMA 2018).⁴² This Orange initiative has enabled its mobile subscribers in France to send remittances to Orange Money customers in Côte d’Ivoire, Guinea, Madagascar and Mali. MTN also launched its Homeland remittance service in 2019, which could help facilitate money transfers between Europe and Africa, provided the necessary regulations are in place (GSMA 2019).

Low interoperability thus exacerbates various growth challenges for DFS providers across African markets, including WAEMU. Insufficient interoperability also generates regulatory challenges at the regional (BCEAO) and national government levels. Although the WAEMU region has common currency and central bank, there is little interoperability between the 32 mobile money deployments across the region and corresponding banks. Uneven agent networks exacerbate reduced interoperability for mobile money and DFS more broadly across the region, contributing to the concentration of mobile money growth in countries such as Côte d’Ivoire (CGAP 2016).

Finally, adoption and usage of second-generation DFS in WAEMU suffers from high default and interest rates for digital credit and loan-based products (see Figure 14 for a comparison of three countries). According to EPAR (2017), the average APR for a digital loan can reach 90%-- out of reach for most prospective clients for second-generation DFS. Though interest rate caps in WAEMU and additional regulation of the second-generation DFS space may dampen these effects, for the moment second-generation services remain unattainable for the majority of the ultra-poor in WAEMU.

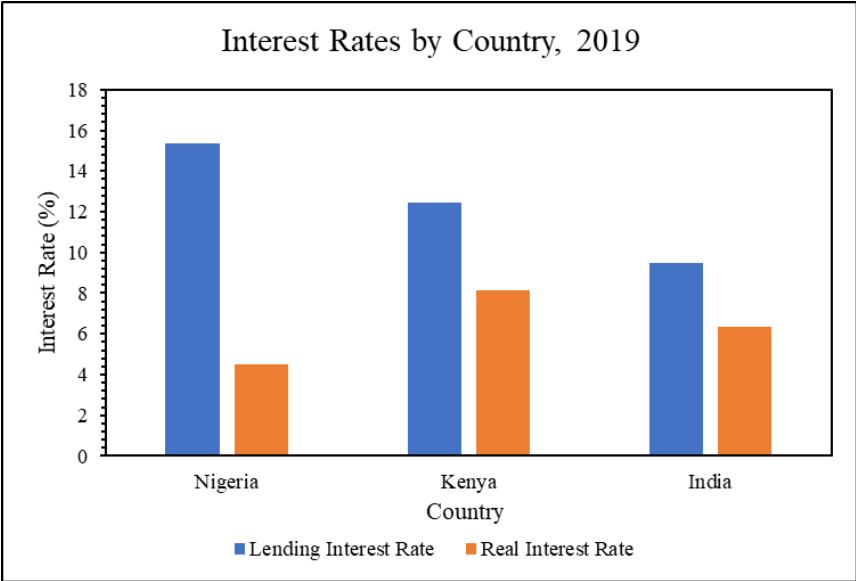


Figure 14. This figure compares lending interest rate (blue) and real interest rate (orange) between Kenya, India, and Nigeria. The high interest rate in Nigeria is characteristic of many other Sub-Saharan African countries, including WAEMU countries (World Bank Indicators 2020).

⁴² <https://www.gsma.com/mobilefordevelopment/uncategorized/unlocking-mobile-money-interoperability-and-merchant-payments-across-africa-through-mowali/>

4.2. Regulatory Challenges

Challenges to interoperability foreground regulatory challenges at the regional and national levels that exacerbate challenges for expanding access to agents, as well as robust interoperability in the WAEMU DFS market. As **BCEAO** is the main institution regulating financial sector activities, including e-money, in the WAEMU region, the regulatory framework for e-money is the same across all eight WAEMU member states. BCEAO has set a target to include 75% of adults in the formal financial sector by 2020, as part of its initiatives to expand financial inclusion and financial sector development more broadly. To do this, BCEAO has developed a regional financial inclusion strategy and has released various regulations governing e-money issuance, payment systems, agent networks, KYC compliance, consumer protection, and anti-money laundering and combatting the financing of terrorism (AML/CFT).

Historically, under BCEAO regulations MNOs and other nonbank providers have had the option to either become e-money issuers through creating an e-money subsidiary, or to partner with banks. In these partnerships, banks would act as the e-money issuers and focus on compliance issues. This would leave the e-money distributors to concentrate on developing and distributing the final e-money product. However, the BCEAO found it difficult to supervise e-money distribution occurring through partnerships and was concerned about MNOs' increasing presence in the financial sector without direct bank or regulatory oversight. In 2015, BCEAO adopted new e-money regulatory guidelines in an attempt to combat these issues. These guidelines clarified the roles and obligations of different stakeholders along the e-money value chain, including banks and MNOs.

The 2015 guidelines increased the threshold of transactions not requiring the identification of users from 10,000 FCFA per transaction and 100,000 FCFA per account to 200,000 FCFA for all transactions per month on an account. The new guidelines also made it possible to open an account without presenting a valid identification, as long as transactions remain within this new monthly threshold. These efforts attempted to address documentation market failures and transaction costs in the WAEMU DFS ecosystem. Furthermore, the new guidelines reinforce and clarify stakeholders' options to issue e-money. Under these rules, DFS providers must work with subsidiaries to deliver first-generation services, and must partner with formal financial institutions, such as banks, to provide second-generation financial services. The guidelines also specify the roles and responsibilities of e-money issuers *vis-à-vis* clients and agents and set clear limits on the scope of activity allowed in mobile money accounts. By prohibiting agent exclusivity and setting clear obligations for price transparency, transaction values, distribution rights, and personal data protection, the guidelines also strengthen consumer protection. Finally, these guidelines outline recourse and complaint mechanisms for mobile money clients and set ceilings on the amount of money to be held in mobile money accounts.

However, the 2015 guidelines do not address all potential challenges and concerns in the WAEMU e-money universe. The new guidelines do not sufficiently address the **agent-banking model**. Questions about agent relationships to clients and banks remain ambiguous. For example, the 2010 BCEAO guidelines⁴³ stipulate that banks can only leverage alternative delivery channels through the *Intermédiaires en Opérations de Banque* (IOB, or Intermediary in Banking Operations), rather than agents or MFIs. However, the regulation is not sufficiently clear or precise. As a result, the majority of banks have not demonstrated any particular interest

43 n°15-12/2010/RB of 13 December 2010

in utilizing agents to distribute financial services (BCEAO 2018). Failing to clarify this regulation limits opportunities for agents and MFIs to partner with banks to innovatively provide DFS. While there have been cases where an MFI asks for special authorization from BCEAO to pilot an agent banking model, this authorization is not guaranteed and criteria to receive the authorization remain opaque.

As previously noted, a robust environment of **interoperability** benefits all participants in the payments ecosystem (Benson et al 2015).⁴⁴ According to Benson et. al. (2012), “interoperability in payments systems can also produce cost efficiencies and enable superior risk management” for DFS (Benson et al 2012).⁴⁵ Experience suggests that regulators need to encourage DFS providers to move towards interoperability because market forces alone are unlikely to provide sufficient incentive in the medium-term to do so (UNCDF 2018).⁴⁶ ⁴⁷ Yet strict or unclear regulatory policy can adversely impact DFS providers’ ability to work with partners and synergize service provision. In WAEMU, MNOs have been able to reach interoperability in cross-border payments through bilateral agreements between different mobile money providers. Yet new guidelines for interoperability have also failed to adequately address ambiguities. For instance, WAEMU launched a new project in 2017 to create the infrastructure to allow transactions between all DFS providers.⁴⁸ ⁴⁹ Yet even these guidelines do not, for example, describe the roles that different DFS stakeholders should play in the market. As a result of these regulatory ambiguities, sector-wide interoperability remains a challenge for many providers in the WAEMU market.

4.3. Additional Regulatory Concerns

4.3.1. Limited Business Registration

Business registration offers yet another regulatory challenge inhibiting DFS expansion. Current BCEAO regulations require both mobile money and OTC service agents to register their businesses in the Registry of Trade and Property Credit or another equivalent registry. The same requirements apply to merchants who accept mobile money payments, which could include a wide swath of consumer services. However, registered businesses are not very common in WAEMU, especially in rural areas. More flexible **registration requirements** could help DFS providers expand their agent networks as well as that of merchant acceptors and contribute to greater mobile money uptake as a result.

4.3.2. Pricing, Taxation, and Privacy Regulatory Challenges

Pricing and taxation decisions impact a consumer’s decision to adopt and use DFS technology. Benefits from DFS depend on the network of other users— as a result, the allocation of DFS is

44 Benson, Carol Coye, and Scott Loftesness. "Interoperability in Electronic Payments: Lessons and Opportunities." CGAP report commissioned to Glenbrook, available at: http://www.cgap.org/sites/default/files/Interoperability_in_Electronic_Payments.pdf (accessed 15th June, 2015) (2012).

45 Benson, Carol Coye, and Scott Loftesness. "Interoperability in Electronic Payments: Lessons and Opportunities." CGAP report commissioned to Glenbrook, available at: http://www.cgap.org/sites/default/files/Interoperability_in_Electronic_Payments.pdf.

46 Independent development efforts may produce processes or use technologies that are not compatible, and, often, market competitors have reasons to hope that interoperability will not occur, and that their proprietary solutions will win.

47 The Role of Regulators in Building Consumer Demand for Mobile Money Briefing. UNCDF MM4P

48 BCEAO 2018. Rapport Annuel Sur La Situation De L’inclusion Financiere Dans L’uemoa Au Cours De L’annee 2017

49 <https://fr.allafrica.com/stories/201909300650.html>

likely to be economically inefficient. Individuals are unlikely to internalize all the benefits their adoption generates for the larger DFS ecosystem in WAEMU. Hence, adoption is also likely to be suboptimal. If markets are competitive and standards are compatible, any single e-money firm will internalize only a small share of the benefits it generates. Combined, these consumer and producer inefficiencies contribute to low take-up and limited expansion of DFS in WAEMU. To address these issues, governments should impose taxes for welfare schemes while also addressing market failures, such as those described above, in the telecom sector. Policymakers should consider fixing tax rates with caution, as these taxes can sometimes have substantial welfare costs that disproportionately affect poorer users (Daniel 2019).⁵⁰

Inadequate privacy protections can also contribute to low DFS adoption by opening the door for abuse by governments and service providers. When personal information is susceptible to security challenges, user trust may be damaged. This effectively limits adoption and use of DFS (Harris et al 2013).⁵¹ Furthermore, the effectiveness of monitoring systems for mobile money is highly variable. BCEAO and national governments in WAEMU do not offer systemic privacy protections for DFS, which might also put customers' data at risk. National governments or regulatory bodies should clearly designate monitoring mechanisms to decide who can have access to the "trail" of mobile money, and under which conditions access is granted.

4.3.3. Telecommunications and National Security Concerns

Telecommunications authorities in WAEMU have generally not intervened in DFS or mobile money regulations (CGAP 2016). Mobile money is typically considered a value-added service (VAS) by telecom authorities. This means that MNOs are required simply to notify the telecom authority of the e-money offering and confirm that its service meets central bank requirements. This is a relatively low bar to meet from a regulatory standpoint. However, this is changing. There is a growing consensus among these regulators that they need to be more involved in the development of the mobile money market and coordinate with the BCEAO, specifically regarding service quality and data confidentiality.

Although regulating and monitoring of DFS and e-money largely falls on BCEAO, **national governments** also monitor e-money flows to some extent. They primarily do this through their Financial Intelligence Units (CENTIF), which focus on AML/CFT issues. Yet not all governments have a national financial inclusion strategy that sufficiently incorporates DFS ecosystem development. Côte d'Ivoire, which has its own financial sector development strategy supported in the highest levels of government, is one exception. Following legislation in 2014, 94% of secondary school fees in Côte d'Ivoire are paid digitally. Benin and Burkina Faso have also made some progress in national government support for DFS development. Each country has begun working on a national financial inclusion strategy and were in the financial services demand and stakeholder discussion stages, respectively, as of 2017.

50 Björkegren, Daniel. "The adoption of network goods: Evidence from the spread of mobile phones in Rwanda." *The Review of Economic Studies* 86, no. 3 (2019): 1033-1060.

51 Andrew Harris, Seymour Goodman, and Patrick Traynor. "Mobile Money in Developing Countries: Financial Inclusion and Financial Integrity." *Washington Journal of Law, Technology & Arts* 8 (2013): 245-587.

5. Conclusion: Recommendations for DFS in WAEMU

Digital financial services offer the potential to increase access to financial services, especially money transfers and remittances, at lower cost and closer distance across WAEMU. Research findings stress that the most basic usages of DFS, such as mobile money on simple phones, can yield the greatest benefits for the poor. But limited adoption and usage, confounded by low literacy rates, intermittent agent density, and high cost, hampers the scaling-up of existing initiatives and hinders more sophisticated usages of digital technologies.

To leverage access to DFS in WAEMU and pave the way for increased financial inclusion in the region, lawmakers, DFS providers, MNOs, and national governments must take various steps toward improving access to, adoption and usage of, and regulation for first- and second-generation DFS. Decision-makers should focus on investing in basic technologies accessible by the whole population, especially the low-literate, in order to expand equitable access to digital channels for financial inclusion. They should also implement policies that ensure affordable and quality access to basic DFS, focusing on strengthening and expanding agent networks and interoperability. This includes necessary clarifications and adjustments to current regulatory policy, which leaves agent-banking relationships and interoperability options ambiguous. Lawmakers must also make significant investments in second-generation DFS, building upon lessons from East Africa. Improving regional and intra-continental mobile and Internet connectivity, expanding access to last-mile financial infrastructure (such as kiosk, street-corner stores, agents, etc.), reducing digital vulnerabilities such as threats to the telecommunication network integrity, and increasing smartphone penetration will also help to strengthen DFS across WAEMU. By taking these steps as well as continuing to invest in research related to DFS expansion and financial inclusion, development organizations and governments in West Africa can come one step closer to extending financial inclusion, and financial freedom, to all.

Bibliography

1. Adida, C. L., Bouko, A. C., Verink, A., Chockalingam, G., & Burney, J., 2018. Pilot of a mobile money school fee payment system in rural Benin. *PloS one*, 13(6), e0198240.
2. Aker, J. C., and Mbiti, I. M., 2010. Mobile phones and economic development in Africa. *Journal of Economic Perspectives*, 24(3), 207–232.
3. Aker, J. C., & Wilson, K., 2013. Can Mobile Money be used to promote savings? Evidence from Northern Ghana.
4. Aker, J. C., Boumniel, R., McClelland, A., & Tierney, N., 2016. Payment mechanisms and antipoverty programs: Evidence from a mobile money cash transfer experiment in Niger. *Economic Development and Cultural Change*, 65(1), 1-37.
5. Aker, J.C., S. Prina and J. Welch. 2020. "Migration, Money Transfers and Mobile Money: Evidence from Niger." AEA Papers and Proceedings 110: 589-593.
6. Aker, J.C. and A.D. Carroll. ???
7. Aker J.C., Cariolle J. (2020) "The Use of Digital for Public Service Provision in Sub-Saharan Africa" Ferdi Note brève B209, septembre
8. Andersson-Manjang, S., & Naghavi, N., 2021. State of the industry report on mobile money, 2021. *GSMA Mobile Money Programme*.
9. Andrianaivo, M., and Kpodar, K., 2011. ICT, financial inclusion, and growth evidence from African countries. IMF Working Paper No.11/73, April.
10. Aron, J., 2018. Mobile money and the economy: A review of the evidence. *The World Bank Research Observer*, 33(2), 135-188.
11. Aron, J., & Muellbauer, J., 2019. The Economics of Mobile Money: harnessing the transformative power of technology to benefit the global poor. *Centre for the Study of African Economies*, University of Oxford.
12. BCEAO, 2017. Overview of mobile financial services data in the West African Economic and Monetary Union (WAEMU) in 2016.
13. Beck, T., Pamuk, H., Ramrattan, R., & Uras, B. R., 2018. Payment instruments, finance and development. *Journal of Development Economics*, 133, 162-186.
14. Björkegren, D., 2018. The adoption of network goods: Evidence from the spread of mobile phones in Rwanda. *The Review of Economic Studies*, 86(3), 1033-1060.
15. Buys, P., Dasgupta, S., Thomas, T. S., and Wheeler, D., 2009. Determinants of a digital divide in Sub-Saharan Africa: A spatial econometric analysis of cell phone coverage. *World Development*, 37(9), 1494-1505.
16. Cariolle J. (2020) *The Use of Digital for Public Service Provision in Sub-Saharan Africa*, FERDI Report, 82p.
17. CGAP, 2016. CGAP Annual Report 2016: Advancing financial inclusion to improve the lives of the poor.
18. Davidovic, S., Nunhuck, S., Prady, D., & Tourpe, H., 2020. Beyond the COVID-19 Crisis: A Framework for Sustainable Government-To-Person Mobile Money Transfers. *IMF*

19. David-West, O., Iheanachor, N., & Kelikume, I., 2018. A resource-based view of digital financial services (DFS): An exploratory study of Nigerian providers. *Journal of Business Research*, 88, 513-526.
20. Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J., 2020. The Global Findex Database 2017: Measuring financial inclusion and opportunities to expand access to and use of financial services. *The World Bank Economic Review*, 34, S2–S8.
21. Dupas, P., Karlan, D., Robinson, J. and Ubfal, D., 2018. Banking the unbanked? Evidence from three countries. *American Economic Journal: Applied Economics*, 10(2), 257-297.
22. Dupas, P. and Robinson, J., 2013a. Savings constraints and microenterprise development: Evidence from a field experiment in Kenya. *American Economic Journal: Applied Economics*, 5(1): 163-192.
23. Dupas, P. and Robinson, J., 2013b. Why don't the poor save more? Evidence from health saving experiments. *American Economic Review*, 103(4): 1138-1171.
24. Ebuenyi, I. D., 2020. COVID-19: an opportunity for African governments to rethink social welfare benefits and protection. *Pan African Medical Journal*, 35, 2. doi:10.11604/pamj.suppl.2020.35.2.23875
25. Geng, X., Janssens, W., Kramer, B., & van der List, M., 2018. Health insurance, a friend in need? Impacts of formal insurance and crowding out of informal insurance. *World Development*, 111, 196-210.
26. Gentilini, U., Almenfi, M., Orton, I., & Dale, P., 2020. Social Protection and Jobs Responses to COVID-19: A Real-Time Review of Country Measures. *World Bank, Washington, DC*.
27. Gorman, S.P., Schintler, L., Kulkarni, R. and Stough, R., 2004. The revenge of distance: Vulnerability analysis of critical information infrastructure. *Journal of Contingencies and Crisis Management*, 12(2), 48-63.
28. GSMA 2019, L'économie mobile en Afrique de l'Ouest.
29. GSMA 2018, 2018 State of the Industry Report on Mobile Money.
30. Howard, P. N., and Mazaheri, N., 2009. Telecommunications reform, Internet use and mobile phone adoption in the developing world. *World Development*, 37(7), 1159–1169.
31. International Telecommunication Union, 2016. Measuring the information society report. UIT Report.
32. Islam, A. M. and Muzi, S., 2021. Does mobile money enable women-owned businesses to invest? Firm-level evidence from Sub-Saharan Africa. *Small Business Economics*, 1-27. doi:10.1007/s11187-021-00562-w
33. Jack, W. and Suri, T., 2014. Risk sharing and transactions costs: Evidence from Kenya's mobile money revolution. *American Economic Review*, 104(1), 183-223.
34. Karlan, D., Kendall, J., Mann, R., Pande, R., Suri, T. and Zinman, J., 2016. Research and impacts of digital financial services. *NBER Working Paper* 22633.

35. Kikulwe, E. M., Fischer, E., & Qaim, M. (2014). Mobile money, smallholder farmers. and household welfare in Kenya. *PLoS ONE*, 9(10), 1–13.
36. Klapper, L., & Singer, D., 2017. The Opportunities and Challenges of Digitizing Government-to-Person Payments. *The World Bank Research Observer*, 32(2), 211-226. doi:10.1093/wbro/lkx003
37. Koomson, I., Bukari, C., & Villano, R. A. (2021). Mobile money adoption and response to idiosyncratic shocks: Empirics from five selected countries in sub-Saharan Africa. *Technological forecasting & social change*, 167, 120728. doi:10.1016/j.techfore.2021.120728
38. Ky, S., Rugemintwari, C., & Sauviat, A., 2017. Does Mobile Money Affect Saving Behaviour? Evidence from a Developing Country. *Journal of African Economies*, 27(3), 285-320.
39. Lashitew, A. A., van Tulder, R., & Liasse, Y., 2019. Mobile phones for financial inclusion: What explains the diffusion of mobile money innovations? *Research Policy*, 48(5), 1201-1215.
40. Lepoutre, J., & Oguntoye, A., 2018. The (non-) emergence of mobile money systems in Sub-Saharan Africa: A comparative multilevel perspective of Kenya and Nigeria. *Technological Forecasting and Social Change*, 131, 262-275.
41. Mariscal, J., & Rojas-Lozano, D., 2020. A State-led Model of Financial Inclusion Through Mobile Services. *Information Technologies & International Development*, 16, 20-31. Retrieved from <Go to ISI>://WOS:000612982000002
42. Mora, T., & Prior, F., 2018. The impact of mobile financial services' usage on microfinance delinquency. *Applied Economics*, 50(50), 5354-5365.
43. Mothobi, O., & Grzybowski, L., 2017. Infrastructure deficiencies and adoption of mobile money in Sub-Saharan Africa. *Information Economics and Policy*, 40, 71-79.
44. Murendo, C., Wollni, M., De Brauw, A., & Mugabi, N., 2018. Social network effects on mobile money adoption in Uganda. *The Journal of Development Studies*, 54(2), 327-342.
45. Naji, L., 2020. Tracking the journey towards mobile money interoperability - Emerging evidence from six markets: Tanzania, Pakistan, Madagascar, Ghana, Jordan and Uganda. *GSMA Mobile Money*.
46. Okello, G., Bongomin, C., Ntayi, J. M., Munene, J. C., & Malinga, C. A., 2018. Mobile Money and Financial Inclusion in Sub-Saharan Africa: the Moderating Role of Social Networks, *Journal of African Business*, 19(3), 361-384.
47. Riley, E., 2018. Mobile money and risk sharing against village shocks. *Journal of Development Economics*, 135, 43-58.
48. Scharwatt, C., & Williamson, C., 2015. Mobile money crosses borders: New remittance models in West Africa. *GSMA, London*.
49. Schumann, R., and Kende, M., 2013. Lifting barriers to Internet development in Africa: Suggestions for improving connectivity. In *Report for the Internet Society*, Analysis Mason and Internet Society.
50. Suri, T., 2017. Mobile money. *Annual Review of Economics*, 9, 497-520.

51. Suri, T. and Jack, W., 2016. The long-run poverty and gender impacts on mobile money. *Science*, 354(6317), 1288-1292.
52. Suri, T., Aker, J., Batista, C., Callen, M., Ghani, T., Jack, W. Klapper, L. Riley, E., Schaner, E., and Sukhtankar, S. *Mobile Money*. *VoxDevLit*, 2(1), February 2021
53. Sutherland, E., 2014. Undersea cables and landing stations around Africa: Policy and regulatory issues, *25th European Regional Conference of the International Telecommunications Society (ITS)*, 22–25 June 2014, Brussels, Belgium.
54. Vasudevan, R., Lahaye, E., Riquet, C., & Seck, T., 2016. Market System Assessment of Digital Financial Services in WAEMU. *CGAP Working Paper*.
55. World Bank Group, 2016. The digital dividends. *World Development Report 2016*, Washington: World Bank. doi: 10.1596/978-1-4648-0671-1.
56. World Bank Group, 2017. Remittance Prices Worldwide. Issue 21. Washington, D.C.

“Sur quoi la fondera-t-il l'économie du monde qu'il veut gouverner? Sera-ce sur le caprice de chaque particulier? Quelle confusion! Sera-ce sur la justice? Il l'ignore.”

Pascal

FERDi

Créée en 2003, la **Fondation pour les études et recherches sur le développement international** vise à favoriser la compréhension du développement économique international et des politiques qui l'influencent.



Contact

www.ferdi.fr

contact@ferdi.fr

+33 (0)4 73 17 75 30