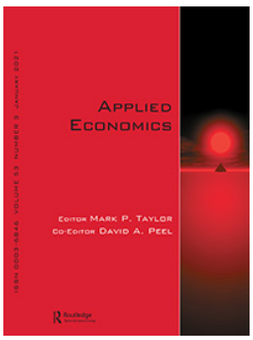

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The contribution of digital financial services to financial inclusion in Mozambique: an ARDL model approach

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ABSTRACT

This paper analyses the contribution of digital financial services to financial inclusion in Mozambique, based on the Autoregressive Distributed Lag (ARDL) model, for the period from January 2011 to September 2019. We study two models to analyse the contribution of digital financial services to financial inclusion (measured by the number of bank accounts) in Mozambique. The first model uses traditional digital means of payments as independent variables, such as the volume of financial transactions through automated teller machines (ATMs), point-of-sales (POSs), electronic transfers of inter and intrabank funds, direct debit, and domestic and cross-border remittances. The second model considers innovative digital means of payments, such as internet banking, mobile banking and electronic money. We conclude that, excluding domestic remittances and direct debit, which present low levels of penetration in the country, and internet banking transactions, the remaining variables contribute to financial inclusion. Our results confirm the crucial role that digital financial services play in financial inclusion, particularly in improving access to and the use of services by the under-served population.

KEYWORDS

Financial inclusion; digital Financial Services; ARDL model; Mozambique

JEL CLASSIFICATION

G20; G21; G28

I. Introduction

In Mozambique, as in most other African countries, electronic and digital financial services have been on the rise, in recent years. The country currently has digital financial services provided through channels made available by banks, through computers (internet banking, home banking), automated teller machines (ATMs), point-of-sale (POS), and mobile (mobile banking), as well as non-banking (provided using USSB technology offered by the electronic money institutions).

The literature highlights several success stories regarding developing or emerging countries using digital financial services to accelerate levels of financial inclusion. Such are the cases of Kenya, Tanzania, and India, among others (Gupta et al. 2017; Di Castri and Gidvani 2014). The literature also identifies that the main benefits of electronic or digital payments are as follows: (i) for traders, security in reducing cash deviations and fraud, quick access, and carrying out transactions, the ability to generate revenue for users, simplicity of the payment process, and the creation of a transaction history, and; (ii) for governments, the possibility of providing a platform for monitoring consumer and retail spending trends and for improving levels of access and inclusion.

Mozambique is increasingly using electronic channels such as ATMs and POSs, in addition to the traditional electronic real-time clearing and state payments systems. More than 7 years after the start of the use of the first electronic money in the country, it is relevant to assess whether the availability of digital financial channels and services has been reflected in the improvement of the access and use levels of financial services by the Mozambican population.

About 67% of the Mozambican population is excluded from financial services. Of the 33% of the financially included population, 20% have a bank account, 2% use other non-bank financial services, and 12% are served informally. In rural areas, the financially excluded population amounts to 77%. In turn, data from the Bank of Mozambique show that the role that electronic

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and digital financial services have been playing for the country's financial inclusion is on the increase. Indeed, data for September 2019 show that there are 228 POS per 100,000 adults (compared to 22 POS in 2005) in the country, 11 ATMs per 100,000 adults (compared to 2 in 2005), and 334 agents per 100,000 adults (compared to none in 2005 and 21 in 2011), as well as 7 banking agents per 100,000 adults, which was non-existent in 2005. In addition, the economy's 'bankarisation' rate (percentage of the adult population with a bank account) remained 32% in 2019 (compared to 6.5% in 2005). When considering bank accounts opened with electronic money institutions, the bankarization rate was 55% in September 2019.

The objectives of this study are to analyse the contribution made to financial inclusion in Mozambique by digital financial services, using formal econometric methods – the autoregressive distributed lag (ARDL) cointegration approach, and to propose policy measures to accelerate the impact of digital financial services on Mozambique.

The remainder of the paper is organized as follows. Section 2 presents a literature review. Section 3 reviews the conceptual agenda. Section 4 provides the data. Section 5 presents a brief description of the statistical methodology. Section 6 reports the empirical findings and discusses the results, and, finally, Section 7 concludes and discusses policy implications.

II. Literature review

There is a consensus in the literature regarding the concept of digital financial services, which are defined as being financial services offered through digital platforms, including mobile phone, internet, cards, and POS, among others, with a low usage of cash and traditional bank branches (Manyika et al. 2016; Wright et al. 2013; Alexander 2017). More specifically, digital financial services refer to the use of electronic financial services which can be provided by both banking and non-banking institutions. Nowadays, as postulated by Soriano (2017), digital financial services go beyond traditional retail and large bank electronic payment platforms, as they include e-money, cloud computing, big data analytics, blockchain, and distributed ledger technologies – all of which allow people to have access to cost-effective financial services and products.

In turn, financial inclusion is 'the process that ensures easy access, availability and use of the formal financial system by all members of the economy' (Sarma 2008, 2012; Sarma and Pais 2010). A financially included system facilitates the efficient allocation of productive resources, contributes to better management of daily finances, reduces the use of informal lending facilities, and promotes safe and efficient practices in the provision of financial services.

Digital financial-inclusion results from the provision of digital financial services and involves the use of digital platforms to reach the financially excluded population which is not served by traditional financial services, which are offered by providers on a sustainable basis. Several bodies advocate the advantages of digital financial services in the economy, such as the Alliance for Financial Inclusion (AFI), the Consultative Group to Assist the Poor (CGAP), and the Global Partnership for Financial Inclusion (GPFI). The GPFI, for example, argues that digital financial services contribute to: (i) boosting financial inclusion through key innovations in digital payment infrastructure; (ii) increasing the access of the underserved population to financial services, and; (iii) improving the levels of the utilization of financial services. In this way, digital financial services contribute to the expansion of traditional banking services to customers through technological innovations such as internet banking, mobile solutions, e-money models, and digital payment platforms.

Recognizing the importance of digital financial services, yet recognizing the aim to mitigate the potential risks associated with these services, in 2016 the G20 approved the 'G20 High Level Principles for Digital Financial Inclusion'. These principles constitute a set of rules which countries must comply with in order to benefit from the benefits of digital financial inclusion. These include measures such as promoting a favourable approach to financial inclusion through digital technology, leveraging innovation and risk, providing a legal and regulatory environment conducive to digital financial inclusion, expanding the digital financial services ecosystem, promoting responsible digital

financial services practices for consumer protection, strengthening financial literacy and consumer protection, improving customer identification of digital financial services, and monitoring the evolution of digital financial inclusion.

However, barriers limiting financial inclusion exist, which include, according to Soriano (2017), factors such as a lack of formal identification, low levels of financial literacy, high costs of financial services, and lack of banking infrastructure in the rural areas. However, according to the same author, the identified barriers to expanding financial inclusion can be minimized by the use of digital financial services, such as digital financial solutions, which can: (i) help expand access and reach all consumers, especially non-bank consumers; (ii) contribute to significantly reducing the costs of financial services, and; (iii) contribute to the emergence of new business models which can address consumer needs, whilst generating new sources of revenue for financial service providers.

In terms of the study of the determinants of financial inclusion, Olaniyi and Adeoye (2016) examined a panel data using the number of clients with deposit accounts per 1,000 adults as a proxy for financial inclusion, with the determinants of financial inclusion including, amongst others, the number of internet users per 100 people and the number of institutions providing safe internet. Their results showed that these indicators have a significant impact on financial inclusion and concluded that internet access and coverage are key factors for achieving an economy based on digital financial services and financial inclusion, especially for populations without physical access to bank branches. Similarly, Abel, Mutandwa, and Le Roux (2018) also studied the impact of internet access as one of the determinants of financial inclusion, and concluded that increased internet connectivity has a significant and positive impact on financial inclusion. Gebregziabher and Makina (2015) studied the determinants of financial inclusion in 27 African countries for the period of 2004 to 2013, and found a positive impact for mobile infrastructure and the use of mobile phones on financial inclusion. Oyelami, Saibu, and Adekunle (2017), in turn, analysed the determinants of financial inclusion in sub-Saharan Africa from 2004 to 2015. These authors considered as a proxy for financial inclusion the volume of credit and deposits per thousand adults, and as explanatory variables, a set of bank variables including the number of ATMs, POSs and bank branches. Socio-economic variables included the number of individuals with access to a mobile phone service. The authors found that the number of ATMs, internet providers, and mobile banking services, all have a significant positive effect on financial inclusion, in sub-Saharan Africa.

Other studies strictly analysed the relationship and impact that digital financial services have on financial inclusion. Ouma, Odongo, and Were (2017) measured financial inclusion as being the volume of financial savings, and studied its dependence on two sets of indicators: firstly, the access or use of mobile financial services by individuals, and secondly, a group of control variables, such as education, gender, age, location, and income. These authors concluded that the impact of digital financial services on savings is positive and highly significant, showing that users of these mobile financial services are more likely to save than those without access to them, confirming the role of mobile financial services in mobilizing savings, as they reduce distance and transaction costs. Agyekum, Locke, and Hewa-Wellage (2016) studied the effects of digital financial services on the financial inclusion of Ghana's economy. They analysed the impact of information and communication and technology (ICT) and concluded that mobile subscription has a significant and positive impact on financial inclusion, which suggests that the adoption of mobile financial services will favourably affect the financial sector.

Chatterjee and Anand (2017) studied the effects of technology diffusion on financial inclusion and economic growth. The authors considered an ICT development index developed by the United Nations International Telecommunications Union (ITU), calculated for 175 countries, which includes indicators such as mobile and fixed network penetration, internet usage, and technology import. Their study also uses other digital financial services indicators, such as the number of ATMs. These

authors concluded that the impact of internet users on the number of deposit accounts is positive and significant. They found that indicators such as the number of individuals with access to ATMs, the volume of credit to the private sector, and the number of bank branches also have a positive and significant impact on the number of bank accounts. Kithinji (2017) studied the case of Kenya, from 2012 to 2016. His analytical model consisted of a regression where the dependent variable was the sum of the number of bank and mobile accounts available from electronic money institutions. Independent variables included the value of the investment in e-money, online banking, bank branches, and ATMs. The author concluded that digital finance strategies have a statistically significant effect on financial inclusion and that the most significant digital finance strategy is mobile banking, followed by ATMs, banking agents, and online banking. Harelimana (2018) analysed data from a sample of 253 individual questionnaires, using as dependent variables indicators the electronic payment system, such as the number of bankcards, mobile banking, internet banking, and online remittances. This study concluded that electronic payments are critical for improving financial performance.

III. Digital financial services in Mozambique

The Mozambican payments system

With the introduction of electronic clearing in 1996, the release of the first bank payment cards in the country in 1997, the introduction of Europay, Mastercard, and Visa standards (EMV), electronic payment channels such as point of sales (POSs) and automated teller machines (ATMs) all came to life in Mozambique. Further milestones of the Mozambican Payments System were the introduction of the electronic clearing system (CEL) in 2001 and the Government's electronic fund transfers system (STF) in 2005, as well as the real-time gross settlement system (MTR) in 2008. The update made to the Credit Institutions and Financial Companies Act (LICSF) in 2004 introduced electronic money institutions, which are defined as being credit institutions whose main purpose is the issuance of payments in the form of electronic money, subject to the applicable terms and conditions. Electronic money is defined under this law as being the monetary value represented by a credit to the issuer, which: (i) is stored on an electronic mean, and; (ii) is accepted as a means of payment by the other party and is convertible into cash.

A constant modernization of the channels and means of payment made available to the public occurred with the massification of electronic payments and the objective to achieve the national payment system public objectives – namely security, reliability, transparency and efficiency. These channels included electronic money offered by bank led and non-bank led institutions, internet and home banking, mobile banking, near-field communication (NFC), and contactless payments, among others, which all enable transactions such as digital bill payments, payment to merchants, cross-border remittances, and government disbursements, among others.

Table 1. Financial inclusion indicators in Mozambique.

Year	2011	2018
Mobile subscribers in % of adult population	62.4%	87.3%
E-money subscribers as % of adult population	0.4%	49.5%
Mobile Banking Subscribers as a % of adult population	[(a)]	14.4%
Internet Banking Subscribers as% of adult population	[(a)]	2.1%
Bank Accounts per 100,000 adults	18,819	32,204
E-money accounts per 100,000 adults	355	49,484
Bank branches per 100,000 adults	3.6	4.5
E-money agents per 100,000 adults	23	310
Financial Inclusion Index (IIF)	13.20	14.61

(a) Data not available for 2011
Source: Authors' calculations based on data from BM, INE and INCM

Digital financial services indicators

The improvements observed in the mobile network coverage in Mozambique have contributed to leveraging digital financial services and have made an impact on the country's financial inclusion. In 2018, 87.3% of the adult population had a mobile network subscription, compared to 62.4% in 2011 – which was the year when Mozambique's first electronic money institution came into operation (see Table 1).

The mobile phone channel is one of the main means of access and use of financial services. The

increased use of mobile financial services led to 49.5% of the adult population in 2018 having an electronic money account, compared to 23.2% in 2014, and 0.4% in 2011, as well as 14.4% of the population having adhered to mobile banking services.

By comparing the demographic access levels of bank and e-money accounts, as well as the coverage of bank branches with respect to e-money agents, it can be observed that the country had a greater coverage of adult population with e-money accounts and agents in 2018, compared to bank accounts and branches, which demonstrates the ability of mobile channels to reach customers in remote areas.

Advances in the indicators of access and the use of digital financial services led to an improvement in the financial inclusion index (IIF) from 13.2 points in 2011, to 14.6 points in 2018. However, these levels of financial inclusion are low, which highlights the challenges that still exist in terms of financial inclusion. Figure 1 shows the volume of transactions carried out mainly through retail financial services, namely ATM, POS, internet banking, mobile banking, e-money, inter and intra-bank electronic transfers (excluding STF and MTR), direct debit, and domestic and international remittances (excluding bank swift transfers).

Figure 1 shows that there was high acceptance of ATM financial services from 2013 on, as well as an increase of mobile banking and e-money services, part of this phenomenon being due to the massification and acceptance of mobile network services in Mozambique. Although e-money only entered the Mozambican market in 2011, its use has grown remarkably from 2015 to the present.

Data from the Bank of Mozambique shows that the role that electronic and digital financial services have been playing in the country's financial inclusion is on the increase. Indeed, data for September 2019 show that in the country there are 228 POSs per each 100,000 adults (compared to 22 POSs in 2005), 11 ATMs per 100,000 adults (compared to 2 in 2005), and 334 agents per 100,000 adults (compared to none in 2005, and 21 in 2011), as well as 7 banking agents per 100,000 adults – which were non-existent in 2005. In addition, the economy's bancarization rate (percentage of adult population with a bank account) remained 32% in 2019 (compared to 6.5% in 2005). In September 2019, 55% of all accounts opened were with electronic money institutions.

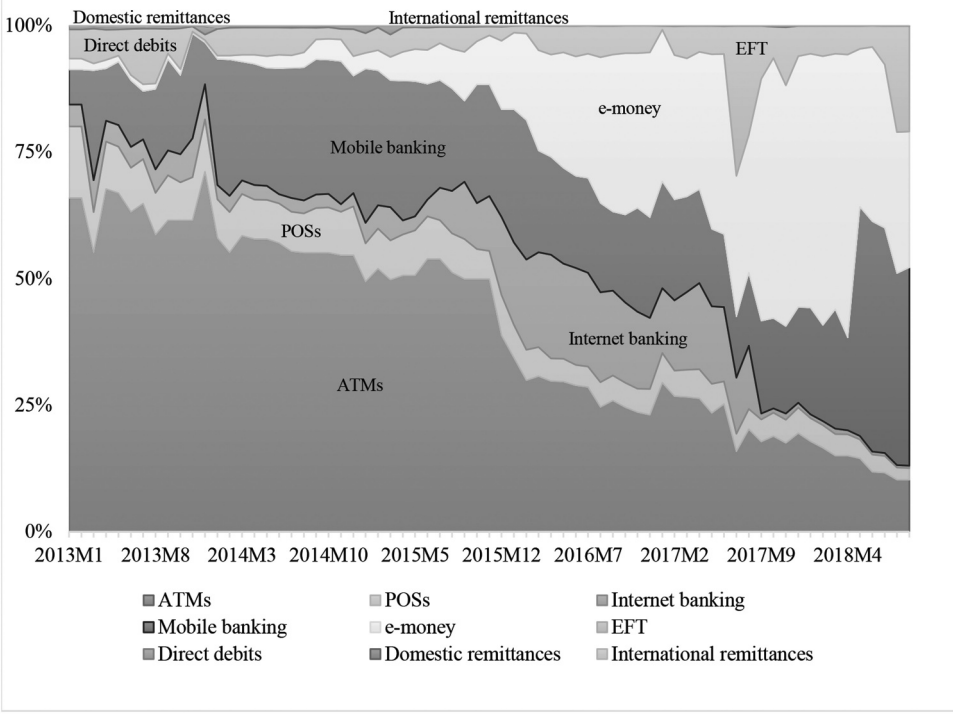

Figure 1. Levels of concentration of digital financial services (2011–2018). Source: Authors' calculations, based on BM data

IV. Data

This study covers a monthly data series from January 2011 to September 2019, comprising a database of 105 observations, desegregated into two models. Financial inclusion is the dependent variable for both of the models. The first model includes the traditional digital means of payments as an independent variables, such as ATM, POS, electronic funds transfers, direct debits, and domestic and cross-border remittances. The second model considers as independent variables the innovative digital means of payments such as internet banking, mobile banking, and e-money.

Data included in this study were obtained from the Central Bank of Mozambique database. Independent variables included in both models are expected to have a positive relationship with financial inclusion, as proposed by Harelimana (2018), Oyelami, Saibu, and Adekunle (2017), Ouma, Odongo, and Were (2017), Chatterjee and Anand (2017a) and Kithinji (2017).

The description of the variables included in the models is as follows: Financial inclusion (FI) is the dependent variable for the purposes of this study, calculated as being the sum of the number of bank accounts in local and foreign currency; Automated teller machines (ATM) is the volume of transactions carried out at ATMs, namely: (i) card withdrawals; (ii) withdrawals of funds deposited in mobile phones; (iii) transfer to bank accounts; (iv) mobile phone transfers; (v) consultation of balances, and; (vi) bill payments; Automatic payment terminals (POS) is the volume of payments made with cards at POSs; Internet banking (IB) includes all banking transactions carried out via the internet and a bank-specific website, being the sum of the volume of the following transactions: (i) transfers; (ii) payments; (iii) check request; (iv) consultation of balances and movements; (v) purchase of air time (top-up for mobile phone roaming services), and; (vi) other services; Mobile banking (MB), includes all banking transactions performed on mobile phones – usually using an application created by the bank for this purpose, such as the sum of the volume of the following transactions: (i) transfers to bank accounts; (ii) transfer to mobile phones; (iii) check requests; (iv) consultation of balances; (v) purchase of air time; (vi) consultation of movements, and; (vii) other services; Electronic money (EMONEY) is the volume of the following transactions that are carried out by customers of electronic money institutions that operate in Mozambique: (i) deposits; (ii) withdrawals; (iii) domestic remittances, and; (iv) payments of goods and services; Electronic fund transfers (EFT) is the sum of the transaction volumes of interbank electronic transfers and intrabank transfers in domestic and foreign currency; Direct debits (DD) is the sum of the volume of transactions in domestic and foreign currency using direct debits; Domestic remittances (DR) are the transfers made within Mozambique, and is the sum of the volumes of transfers made by remittances operators such as Western Union and Money Gram; and Cross-border remittances (CBR) are defined for the purposes of this study as being the volume of transfers sent and received through Western Union and Money Gram remittance operators from, and to Mozambique.

V. Methodology

The first step of our study is to determine whether the variables are stationary in first or second differences. The Augmented Dicky Fuller (ADF) test is used to determine the number of unit roots (if any) in each of the variables. Three models are employed in the ADF (Dickey and Fuller 1979) test, namely: regression without the constant ($\Delta Y_t = \gamma Y_{t-1} + \sum_{j=1}^{p} \varphi_j \Delta Y_{t-j} + \varepsilon_t$), regression with the constant ($\Delta Y_t = \alpha + \gamma Y_{t-1} + \sum_{j=1}^{p} \varphi_j \Delta Y_{t-j} + \varepsilon_t$) and regression with the constant and time trend ($\Delta Y_t = \alpha + \beta t + \gamma Y_{t-1} + \sum_{j=1}^{p} \varphi_j \Delta Y_{t-j} + \varepsilon_t$). The null hypothesis of a unit root is $H_0 : \gamma = 0$, and the alternative hypothesis is $H_1 : \gamma < 0$. The test statistic is the t-ratio of the estimate of γ. Critical values are obtained via simulation (see, for example, Mackinnon 1991).

If the variables are stationarity in first or second differences, then autoregressive

distributed lag (ARDL) models can be applied. These are linear time series models that include lags of both the dependent and independent variables as regressors. These models have been widely used in recent years as a method for examining cointegrating relationships between economic variables (see Pesaran and Shin 1999; Pesaran, Shin, and Smith 2001).

The dynamic estimation of the ARDL model is based on the Beveridge–Nelson decomposition and uses standard least squares techniques. We estimate the ARDL model using automatic lag selection, with a maximum of six lags for both the dependent variable and regressors. Next, the cointegration relationship between the dependent variable and the regressors is estimated and the long-run parameter estimates are derived. Finally, we test for cointegration by deriving the conditional error correction (CEC) in the cointegration bounds test of Pesaran, Shin, and Smith (2001). This standard F-test or Wald-test is robust as to whether variables of interest are I(0), I(1), or mutually cointegrated.

The error correction model estimates the speed of adjustment to equilibrium in the cointegrating relationship. The coefficient of the ECM term is derived as being the levels of the cointegration equation, which represents the speed of adjustment to equilibrium in each period. If variables are cointegrated, we then expect this coefficient to be negative and highly significant.

VI. Results

Table 2 shows the results of the unit root ADF test results found for regressions with a constant term. The unit root tests indicate the presence of one-unit root at 10% for all the variables, except for DD, DR, and CBR. All variables reject the hypothesis of two-unit roots at the conventional significance levels, and therefore each of the series is either I (0), or I(1).

We estimate two ARDL models with FI as the dependent variable, and ATM, POS, EFT, DR, CBR and DD as regressors in Model 1, which represents the traditional electronic means of payments, and IB, MB, and EMONEY as regressors in Model 2, which represent the innovative

Table 2. Unit root test of individual series.

	Augmented Dicky Fuller tests	
Variable	I(1)	I(2)
ATM	−2.11 (3)	−8.80* (2)
DD	-4.20* (0)	-7.90* (0)
EFT	-1.90 (2)	-8.46* (2)
EMONEY	1.28 (12)	-2.80*** (11)
IB	-1.75 (4)	-8.54* (2)
FI	-1.44 (0)	-9.93* (0)
MB	-6.15 (12)	-3.45** (12)
POS	-2.30 (0)	-11.82* (0)
DR	-2.65*** (7)	-4.10* (6)
CBR	-3.46** (2)	-9.12* (2)

*, **, *** significant at 0.01, 0.05, and 0.10, respectively. Lag length selection based on Akaike Information Criterion (AIC) indicated in brackets. The ADF regressions for both unit root tests, I(1) and I(2) include a constant term.

Table 3. ARDL estimation and cointegration test.

	Model 1	Model 2
Dependent variable	FI	FI
Independent variables	ATM, POS, EFT, DR, CBR, DD	IB, MB, EMONEY
Fixed regressors	2017m09 C @trend	2017m09 C @trend
Selected ARDL Model (lags)	(1,0,3,2,0,1,6)	(1,2,1,1)
R^2 adjusted	0.996	0.996
LM test	20.026 (0.067)	8.907 (0.711)
BPG test	40.235 (0.007)	35.008 (0.000)
Cointegration regressions (long-run)	FI − 0.02 ATM − 0.05POS − 0.18EFT + 30.51DR − 1.14CBR + 1.45DD − 46,895@trend	FI + 0.66IB − 0.01MB − 0.04EMONEY − 50,241@trend
ECM coefficient (speed of adjustment)	−0.282*	−0.194*
Cointegration test (F-test)	5.322* Possible cointegration	3.451*** Possible cointegration

*, **, *** significant at 0.01, 0.05, and 0.10, respectively. ARDL model selection by Akaike Information Criterion (AIC). Lagrange multiplier (LM) test for serial correlation up to lag 12 (probability value in brackets). The Breusch-Pagan-Godfrey (BPG) test is a Lagrange multiplier test of the null hypothesis of no heteroscedasticity.

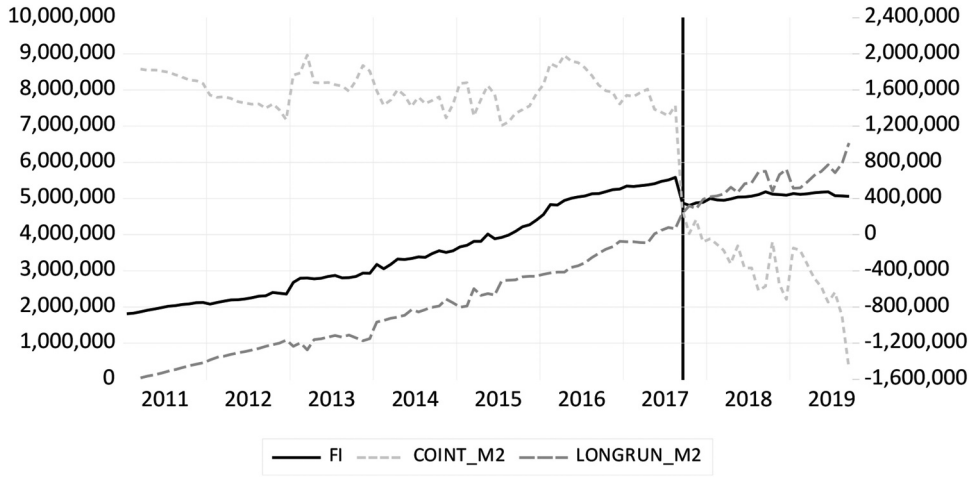

Figure 2. Long-run relationship for ARDL, model 1.

digital means of payments. We include a dummy variable for September 2017 (2017m09), a constant (C), and a trend (@trend) as fixed regressors. The automatic selection using the Akaike Information Criterion was used with a maximum of six lags of both the dependent variable and regressors. The results of ARDL estimation and cointegrating test of Pesaran, Shin, and Smith (2001) are shown in Table 3.

In Model 1, each of the regressors (with the exception of EFT) is significant and the coefficient of the one period lag of the dependent variable is both high (0.718) and highly significant (p-value = 0.000). The serial correlation LM test results for this equation with 12 lags in the test equation does not reject the null of no serial correlation at 5% significance level; however, the BPG test statistic (40.235) rejects the null hypothesis of homoscedasticity at the 1% level. To solve the heteroscedasticity problem, we use the HAC (Newey–West) covariance matrix adjustment to correct any standard errors and to test the statistics in the model estimation. As the cointegration F-statistic (5.322) is greater than the I(1) critical value bound at 1%, we reject the null hypothesis of no cointegration relationship. In the error correction (EC) equation, the speed of adjustment coefficient is negative (−0.282) and is highly significant.

In Model 2, the coefficients of IB and MB are statistically insignificant at 5% level. The EC term (−0.194) is also negative and significant and the cointegration F-statistic value (3.451) is large

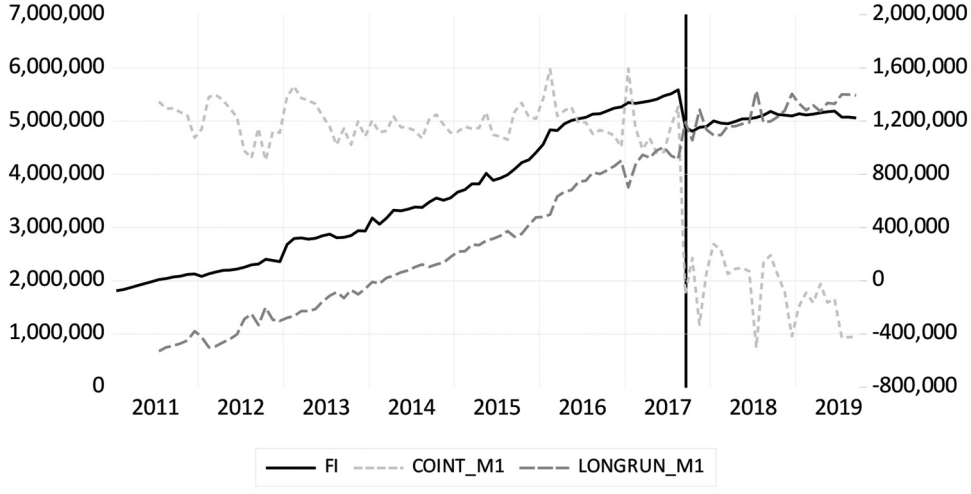

Figure 3. Long-run relationship for ARDL, model 2.

enough to reject the null hypothesis of no cointegration at the 10% significance level, but not at the 5% level.

Figures 2 and 3 show the long-run relationships (LONGRUN) for Models 1 and 2, by subtracting, respectively, EC terms (COINT) from the dependent variable FI. Each graph includes a structural change in September 2017.

The structural change in September 2017 reflects the fall in the number of bank accounts as a result, on the one hand, of the increase in the number of electronic money accounts as an affordable alternative do access to financial system, and also, on the other hand, as a result of the upward revision of the fees and commissions by the banking institutions.

The long-run relationship for ARDL, Model 1 and 2 represented in Figures 2 and 3 reflects that despite the structural change observed in 2017, the long-run relationship between financial inclusion and the traditional and innovative means of payments is increasing and stable, which reflects the positive impact of digital financial services for financial inclusion in Mozambique.

VII. Conclusions

This study aims to analyse the contribution of digital financial services for financial inclusion in Mozambique, based on the ARDL model for the period of 2011 to 2019. In general, this study confirms the positive impact that digital financial services have on financial inclusion in Mozambique, particularly with regards the traditional means of payments, such as ATM, POS, and CBR, as well as innovative ones, such as e-money.

It can be observed that efforts aimed towards financial inclusion must first focus on the widespread access and use of traditional electronic payment instruments. This requires policies aimed at creating different incentives which contribute to improving levels of bank access and usage in the financial sector, through the simplification of the requirements for opening a bank account and the consequent expansion of banking services to rural areas. Furthermore, such polices should include the implementation of a simplified bank account regime for low-risk citizens, and the coordination of efforts with other government entities to ensure that the necessary identification elements for opening bank accounts are assured.

In addition, given the emergence of digital financial services and the confirmed impact on financial inclusion, particularly with respect for electronic money, it is necessary to implement policies that aim to promote digital financial services and to reduce all barriers to their use. Such policies can include actions which aim to: (i) accelerate the interoperability between different financial entities, be they banks or non-bank entities, and improve the massification of innovative digital financial services; (ii) ensure a continuous modernization of the payments infrastructure, in order to ensure the efficiency, speed, and quality of the payments cycle; (iii) create an open and flexible environment to promote innovation by payments providers to enable them to operate without discouraging necessary risk assessment, and; (iv) ensure a continuous investigation of the challenges, benefits, and opportunities to promote innovative means of payments, particularly for the rural population.

Lastly, taking into account the advance of digital financial services and their impact on improving the levels of access and usage of financial services in the country, the Regulator needs to analyse the impact that financial inclusion, led by digital financial services, has on monetary and financial stability in Mozambique. In this respect, the central bank will have to incorporate variables that reflect the advances observed in the level of digital financial services in their models and risk analyses, in order to capture the effect of digital financial services on monetary policy, as well as to minimize the potential risks of financial innovations for financial integrity and stability.

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