Financial Inclusion in Africa Smallholder

AERC Senior Policy Seminar XVIII,
Nairobi, Kenya

March 21–22, 2016

Seminar Papers

African Economic Research Consortium
Consortium pour la Recherche Economique en Afrique
P.O. Box 62882 City Square
Nairobi 00200, Kenya
Middle East Bank Towers, 3rd Floor, Milimani Road
Tel: (254-20) 273-4150
Fax: (254-20) 273-4173
www.aercafrica.org

NOT OR SALE

About African Economic Research Consortium (AERC)

African Economic Research Consortium, established in 1988, is a premier capacity building institution in the advancement of research and training to inform economic policies in sub-Saharan Africa. It is one of the most active Research and Capacity Building Institutions (RCBIs) in the world, with a focus on Africa. AERC's mission rests on two premises: First, that development is more likely to occur where there is sustained sound management of the economy. Second, that such management is more likely to happen where there is an active, well-informed cadre of locally-based professional economists to conduct policy-relevant research. AERC builds that cadre through a programme that has three primary components: research, training and policy outreach. The organization has now emerged as a premier capacity building network institution integrating high quality economic policy research, postgraduate training and policy outreach within a vast network of researchers, universities and policy makers across Africa and beyond. AERC has increasingly received global acclaim for its quality products and services, and is ranked highly among global development think tanks.

Financial Inclusion in Africa - AERC Senior Policy Seminar XVIII
Nairobi, Kenya, March 21-22, 2016, Seminar Report

Published by: African Economic Research Consortium
P.O. Box 62882 City Square
Nairobi 00200, Kenya

ISBN: 978 9966 61 031 7
© 2016, African Economic Research Consortium

Contents

Preface iv

Financial Inclusion in Africa 1
by ***Thorsten Beck***

Digital Financial Services and Regulation Policies in Africa 26
by ***Mthuli Ncube***

Financial Inclusion and Development in Africa: Gaps, Challenges and Policy Recommendations 49
by ***Isaac Otchere***

Preface

The More than two billion people worldwide don't use formal financial services, and up to 50% of adults in the poorest households are unbanked (Global Findex, 2015). And yet, financial inclusion is a key enabler to reducing poverty and boosting prosperity. In Africa, less than a quarter of adults have an account with a formal financial institution, and many of these adults use informal methods to save and borrow. Similarly, the majority of small and medium enterprises in Africa are unbanked and access to finance is a major obstacle. Compared with other developing economies, high-growth small and medium enterprises in Africa are less likely to use formal financing, which suggests formal financial systems are not serving the needs of enterprises with growth opportunities.

The AERC Senior Policy Seminar (SPSXVIII) was a great occasion to share the lessons emerging from financial inclusion initiatives in Africa and the rest of the world with relevant policy makers and private sector actors in the continent. These contributions heightened the debate on the importance of financial inclusion as a catalyst for inclusive growth. The theme for the AERC Senior Policy Seminar was "**Financial Inclusion in Africa**". The seminar was held in Nairobi, Kenya, March 22-23, 2016.

AERC senior policy seminars are forums designed specifically to bring together senior policy makers from sub-Saharan African countries to exchange experiences and deliberate on topical issues pertaining to sustainable development of their economies. Participants in these seminars are drawn from the highest levels of government, including the presidency, ministers, governors of central banks, heads of civil services, permanent secretaries and heads of government agencies and parastatals.

AERC is immensely grateful to the Government of Kenya and the Central Bank of Kenya, for co-hosting Senior Policy Seminar XVIII. I also thank the authors who produced high-quality papers, and the participants for their active participation in producing the seminar's policy recommendations to be shared with other African policy makers who did not find time to take part in this event.

We are grateful to all those who made the seminar a success. We thank Dr. Witness Simbanegavi, AERC Research Director, for his valuable input into the preparation and implementation of the seminar. Similarly, AERC appreciates the hard work of Dr. Charles Owino, Manager, Publications, who took charge of the coordination of activities and conduct of conference and Dr. Wilson Wasike, Manager, Research Programme for his role as a rapporteur. AERC also acknowledges with thanks Juffali Kenzi, Manager, ICT and Stephen Kinuthia, ICT Administrator who helped with promotional materials, Edith Mutui, Publications and Communications Assistant, worked on logistics and Bertha Chedeye, Programme Assistant, Catherine Chang'oli, Training Administrator, Hellen Makimi, Administrative Assistant as well as Susan Miyengi, Programme Assistant who assisted with logistics. To all of these and the many others who were involved, AERC says a big thank you.

Prof. Lemma Senbet
Executive Director
African Economic Research Consortium

One

Financial inclusion in Africa

by Thorsten Beck*

Abstract

This paper takes stock of the recent literature and the state of financial inclusion in Africa. There has been progress in financial inclusion across Africa, partly driven my improvements in the policy and competitive environment, partly driven by financial innovation. The literature and recent experience from Africa has shown that the quickest and deepest return to financial inclusion efforts comes in the area of payment services. While efforts to increase payments and savings services to large population segments can have very positive welfare implications for individual and positive aggregate growth effects, efforts to increase access to credit and insurance services should be much more targeted. Governments have an important role in providing the necessary institutional framework, ensuring a level playing field between incumbent players and new entrance and implementing an adequate regulatory framework.

Keywords: Sub-Saharan Africa; Financial Inclusion; Mobile Money

JEL Classification: G2; G3; O55

* Corresponding author: Cass Business School, London and CEPR. E-mail: TBeck@city.ac.uk

Introduction

Access to financial services still tops the financial sector agenda across the continent. Given that the majority of households and enterprises still do not have access to appropriate payment, savings, credit and insurance services, they cannot participate to the full extent in modern economies, hurting not only themselves but also the overall economy and society. Over the past decade, however, quite some progress has been made, driven both by policy reforms and substantial financial innovation, in the form of new institutions, new products and new delivery channels.

Financial inclusion refers to the access by enterprises and households to reasonably priced and appropriate formal financial services that meet the needs of enterprises and households. Access to financial services can be defined along several dimensions, including geographic access (i.e. proximity to a financial service provider) and socio-economic access (i.e. absence of prohibitive fees and documentation requirements). Appropriate design of products that meet the needs of clients, are sustainable for both providers and users, but do not involve abusive pricing, are other important aspects.[1] While there is an extensive empirical literature on the effect of aggregate financial development (as measured by total credit or deposit stock relative to GDP) on real sector outcomes, the empirical literature on the effects of financial inclusion is relatively young. The latter can be explained by the rather recent availability of observational data on the extent to which individuals or enterprises have access to or use specific financial services as well as by the only recent wave of randomized control trials, which gauge the effect of reducing barriers to specific financial services on household welfare or firm growth, with the intervention and data collection process largely under the control and/or direct monitoring of the researchers.

Financial inclusion in Africa has improved significantly between 2011 and 2014, i.e. the first two waves of the Global Findex survey, though there is still substantial variation across the region. The improvement in financial inclusion has gone hand in hand with a reduction in the gender gap and the poorest two income quintiles have benefitted relatively more. There is clear evidence that the mobile money revolution has contributed to the improvement in financial inclusion.

As important as gaining better insights into the state of financial inclusion in Africa is the development of appropriate policy tools and institutional frameworks to foster the sustainable provision of formal financial services across the region. While private-sector driven efforts to financial inclusion should take precedence over government-driven efforts, the government has to play an important role in providing the necessary environment where sound and effective financial innovation can take place. On the broadest level, one can distinguish between long-term institution building, which includes macroeconomic stability, improving contractual frameworks, and the building of effective credit registries and bureaus, and short- to medium-policies targeting the competitive environment. Cross-border banking, if carefully managed, can also contribute to financial inclusion.

While the focus on financial inclusion is a worthy and important one, it is important to not lose sight of other dimensions of financial sector development, including the efficiency of financial institutions and markets and long-term finance. Financial sector deepening can contribute to poverty alleviation and economic growth both through

expanding access to and use of financial services (especially payment and savings services, as I will argue) and through more efficient and stable financial systems, which can have critical positive effects for the poor through good and labor market effects.

The remainder of this paper is structured as follows. The next section offers a brief literature survey on the barriers to formal financial inclusion as well as the effects of reducing these barriers. Section 3 presents some recent data on financial inclusion in Africa, relying on the Global Findex data. Section 4 discusses several policy areas related to financial inclusion. Section 5 links the financial inclusion debate to the broader question of financial development and section 6 concludes.

Financial inclusion – what does the recent literature tell us

While an extensive theoretical and empirical literature has discussed the benefits of an efficient financial system for economic growth, many of these benefits also apply to individuals and entrepreneurs. First, more efficient payment systems help individuals by allowing better integration into modern market economies. Not having to rely on cash, but rather using safer, less costly and swifter means of transferring payments allows more economic transactions across greater geographic distances. This can have a direct impact on income earning opportunities and thus incomes of the poor.

Second and related to the intermediation function of the financial system, gaining better access to savings and credit services enables the poor to pull themselves out of poverty by investing in human capital accumulation, thus reducing aggregate poverty. Similarly, gaining access to credit services allows the poor to invest in their micro-enterprises or finance other income enhancing opportunities such as migration or asset purchases, thus gaining broader income earning opportunities and ultimately higher incomes.

Third, access to efficient savings, credit and insurance services allows the poor more broadly to smoothen consumption when hit with income or expenditure shocks. The most obvious example is the need to keep children at home for work purposes rather to send them to school; being able to access efficient savings, credit and insurance services to smooth income or expenditure shocks reduces the need to do so. More generally, being able to access credit on short notice and/or to rely on the availability of savings or insurance payouts in the event of income or expenditure shocks improves the livelihood of the poor by stabilizing consumption over time and allowing longer-term planning.

Given the exclusion of poorer population segments from the formal banking system, the financial inclusion agenda has for many decades been associated with the microfinance movement, which first focused on microcredit before expanding into other services, including savings and insurance services and, more recently payment services. Microfinance – financial service provision for the poor – builds on well-known methods to overcome the cost and risk barriers to reach low-income population segments with need for small and few financial transactions; most notably, the cooperative movement in Continental Europe in the 19th century has provided the necessary tools, such as joint liability and community banking. More recently, the focus has expanded beyond microfinance to a broader concept of financial services for the poor, independent by whom they are provided.

The success of microcredit has often been explained with specific techniques, including (i) joint liability lending, (ii) dynamic incentives, (iii) high repayment frequency and (iv) focus on women. The recent decade has also seen an explosion in empirical research assessing the impact of microfinance and other interventions to reduce the barriers to accessing formal financial services. This comes on top of a 20-year old empirical literature on gauging the effect of financial deepening on economic development, moving from aggregate cross-country data to more micro-level enterprise and household data. In addition, there has been a move from the use of observational data to focusing on interventions under the control of researchers and to exploiting policy experiments that provide the necessary exogenous variation in supply of financial services across different sub-national units or user groups.[2]

A large number of studies have assessed the impact of microcredit on welfare of individuals and households and growth of micro-enterprises. This rapidly expanding literature allows some initial conclusions on the effect of expanding microcredit to micro-enterprises and poor households. In summary, the initial expectations on microcredit being able to pull millions out of poverty by giving them access to credit has not been fulfilled. As summarized by Banerjee, Karlan and Zinman (2015) in their introductory paper on a special issue of the AEJ: Applied Economics with six microcredit assessments, there is "a consistent pattern of modestly positive, but not transformative, effects." Evidence on the effects of microcredit has been mixed and the results seem to depend very much on the characteristics and circumstances of borrowers and the purpose of the loans. There is some evidence on business creation, but this does not necessarily translate into higher consumption or income.

There are several reasons of why the impact of microcredit is so limited and why impact is heterogeneous (see Banerjee, 2013, for an in-depth discussion). First, micro-entrepreneurs might not be credit constrained and/or other constraints within the business environment might be more binding, a topic we will return to below. This might also explain the limited take-up of microcredit in many circumstances. Second, there might be rapidly diminishing returns, in the form of an S-shaped production. Initial returns might be high, but rapidly decreasing (Banerjee and Duflo, 2007). Micro-enterprises' capacity to grow might thus be limited. In this context, one also has to distinguish between life-style or subsistence entrepreneurs and transformational entrepreneurs. Many of the micro-enterprises are set up out of lack of alternative employment options for the owner in the formal sector. They rely almost exclusively on the owner, maybe with support from family members and/or friends. A large share of microenterprise owners may be running their business to make a living while they are looking for a wage job and may not have plans for expanding the business (Emran, Morshed and Stiglitz, 2007). In this context, targeting women might also restrain microcredit from having maximum impact, as many of the female borrowers have to combine household chores with entrepreneurial activity.

Third, a large part of borrowers use credit for consumption rather than investment purposes, as for example documented by Johnston and Morduch (2008). Attanasio et al. (2015) also find that about 50% of loans given for business creation in rural Mongolia were actually used for household purposes. This is in line with evidence reported by Karlan and Zinman (2010) for the Philippines on diversion of entrepreneurial credit for household purposes.

Impact evaluations of micro-savings interventions, on the other hand, have been much more positive. These studies confirm that access to formal savings can result in a better protection of resources from other household members especially if the alternative is saving within the household rather than other informal means of saving outside the household. Compared to the impact studies on microcredit, the studies assessing the impact of providing access to savings products are, on average, more positive. However, they also show the need for very specific products and techniques to overcome constraints of low-income households and micro-entrepreneurs.

Households and enterprises face an array of obstacles to accessing deposit and savings services, starting with geographic access, related to limited branch networks. Financial innovation including mobile vans and agency banking, has helped bridge the geographic gap. Similarly, deposit collectors can increase access to and use of formal savings services (Ashraf et al., 2006b). Second, there are important cost barriers as well as documentation requirements that prevent poorer population segments from opening formal accounts. Third, behavioral constraints are important for take-up and use of formal savings vehicles. Intra-household differences in spending preferences and bargaining power can reduce savings substantially. This might especially affect women and, indirectly, children if women have more child-oriented preferences. There might also be behavioral constraints related to present-bias and several studies have explored and shown the effectiveness of soft and hard commitment devices, including nudges and reminders (e.g., Ashraf, Karlan and Yin, 2006a). A final important barrier is the lack of knowledge. While there have been attempts at increasing financial literacy, most of them with frustratingly limited results.

A third significantly smaller strand of the literature has explored the effectiveness of micro-insurance products, especially rainfall insurance. Given the high exposure of households especially in rural areas and active in agricultural activities to weather shocks, this seems a very relevant product. Rainfall insurance relying on objective rainfall data taken at a geographically close gauge to the policyholders can reduce agency conflicts and costs for insurance companies. Where offered, however, take-up of such insurance products has often been surprisingly low. Where taken up, however, the evidence suggests microinsurance can have positive effects on farmers and entrepreneurs, though the limited take-up might limit the benefit of offering such services.

The broadest and quickest impact, however, so far, seems to have come from efforts to expand formals payment services to previously unbanked population segments. Many of these studies have focused on Africa, not surprising given that Africa has been at the forefront of mobile financial services. In 2002, Celpay, a specialized provider linked to mobile network provider Celtel, started a business-to-business payment service in Zambia, and, in 2005, First National Bank started a similar service in South Africa, though limited to existing customers. In 2007, Safaricom started M-Pesa in Kenya, which had more than 10 million registered customers, or 40 percent of Kenya's population, by June 2010 and a business volume of US$400 million per month, or 15 percent of Kenya's GDP. By now, most countries in Africa have a mobile payment service provider, although the penetration has not reached the same level in other countries as in Kenya. Mobile phone banking offers two critical advantages over other delivery channels. First, it relies to a greater extent on variable rather than fixed costs, which implies that even customers who undertake small and few transactions are viable or bankable relative to banking through

conventional channels. Second, as already discussed above, trust can be built much more easily by reducing the risk from the customer's and the provider's viewpoint. The success of mobile might also indicate a shift away from a credit-led inclusion approach, the hallmark of the original microfinance movement, toward a payment-led inclusion approach. Such an approach addresses people's most immediate needs, that is, the need for safe, rapid payments. In addition, focusing on transaction services rather than credit services also seems consistent with the overall level of financial development, which is more highly focused on transactions. This transaction-led rather than credit- or savings-led approach toward inclusion does not downplay the importance of other financial services; rather, the issue is: which service should one start with and which delivery channel should one use. There is by now increasing evidence of the positive effects that mobile banking can have on risk sharing in an economy (e.g., Jack and Suri, 2014 and Blumenstock, Eagle and Fafchamps, 2013). Beyond the impact on individuals, mobile money can also enable easier access by micro- and small enterprises to trade credit, with positive repercussions for firm growth (Beck et al., 2015).

In summary, the impact of expanding payment and savings services seems more immediate and substantial than that of expanding credit services. The multiple barriers faced by low-income population segments in the continent can be overcome with different types of financial innovation: delivery channels looking beyond mortar-brick branches, risk management tools that can help overcome the high risks and costs associated with poorer and rural population segments as well as products more adequate for these customers.

The financial inclusion agenda has moved beyond microfinance institutions towards an array of other formal institutions, including commercial banks, and non-bank financial institution, such as mobile phone company. This is important, also for reasons of competition and regulation policy, a topic we will return to in section 4.

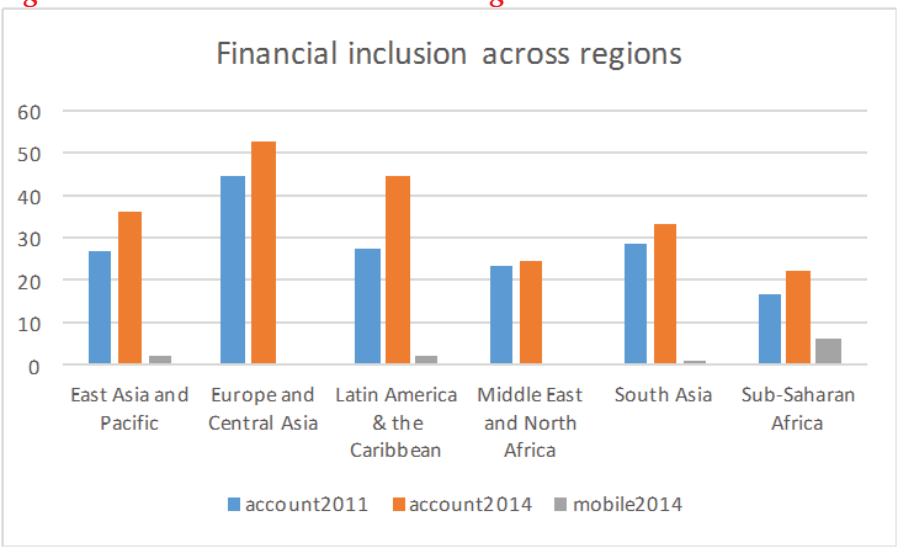
Financial inclusion in Africa – where do we stand?

Many African financial systems have been changing and developing rapidly over the past decade. After disappointing results of financial liberalization in the 1980s and 90s for financial development and inclusion, African banking systems entered the 21st century more stable and better capitalized, though also over-liquid. The past ten years, however, have seen a persistent trend towards financial deepening across many African countries, even through the Global Financial Crisis. Financial innovation in the form of new financial service providers, new products and new delivery channels has helped expand the population with access to financial services in many countries. In this section, I will focus on the financial inclusion dimension of recent financial development trends across the region.

Unlike data on financial depth and stability, data on financial inclusion has become available only recently. Branch and account penetration data have been systemically collected only for the past decade. Enterprise survey data, which gives insights into financing conditions of enterprises and other operational and growth constraints, are available only for a sub-set of African countries and are undertaken on an irregular basis every few years. Household-level surveys focused on financial inclusion were first undertaken in 2011 and repeated in 2014. These Global Findex data, collected by Gallup, are processed and provided by the World Bank.[3]

Figure 1 shows a significant increase in the share of households with a bank account, between 2011 and 2014. This graph shows the median value across the six regions of the developing world (as classified by the World Bank). There has been a general increase in financial inclusion, as measured by this variable across most regions, with the notable exception of the Middle East and North Africa region. The increase in Latin America has been especially notable. The one dimension where Sub-Saharan Africa stands out is the share of population with a mobile-phone based account (only data for 2014 are available), where the median is significantly higher than in other regions, a topic which we have already discussed above and will return to below.

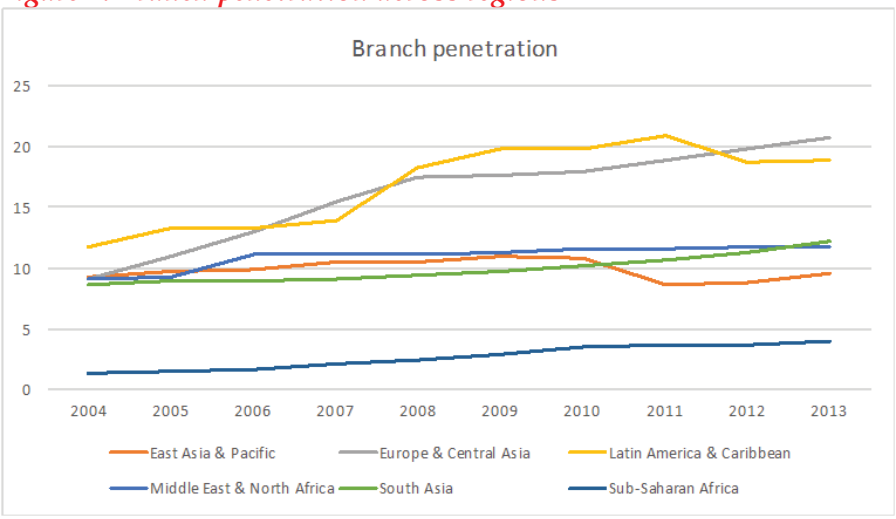
Figure 1: Financial inclusion across regions



Source: Author's calculations based on Global Findex data. The median for each region is shown.

While the Global Findex data, based on household-level data, are only available every three years, higher frequency branch and account penetration data are available on a yearly basis, based on an initial data collection by Beck, Demirguc-Kunt and Martinez Peria (2007) and annual updates by the Financial Access Survey (IMF).

Figure 2: Branch penetration across regions

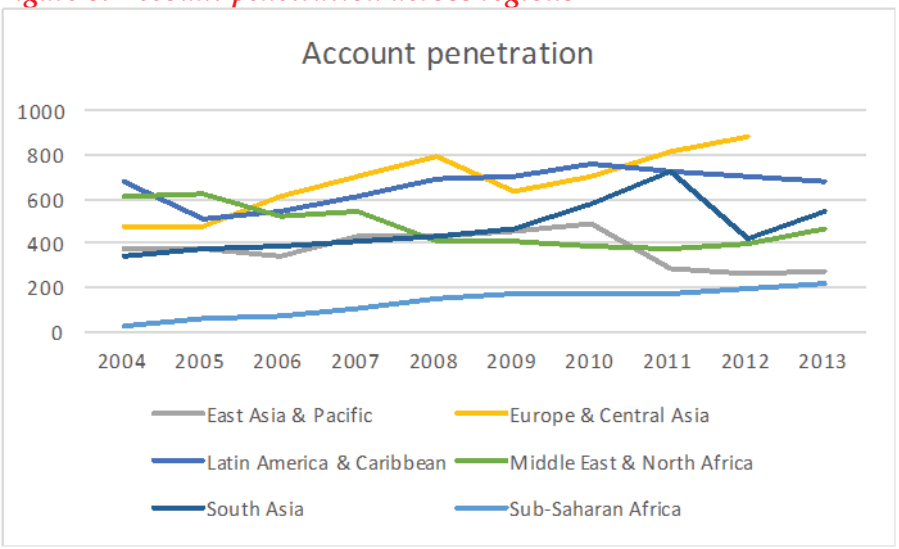


Source: Author's calculations based on Global Financial Development Data. Branch penetration is relative to 100,000 adults. The median for each region is shown/

Figure 2 shows a constant increase in the median branch penetration for Sub-Saharan Africa, though from a significantly lower level than other regions of the developing world. Notably, both Latin America and East Asia and Pacific have seen decreases in the median branch penetration, while Europe and Central Asia have seen similar increases as Africa. It is important to stress that branch penetration data provides only a partial picture, as it does not take into account alternative delivery channels. However, evidence from Kenya's Equity Bank suggests that major clientele expansion efforts are still accompanied by branch expansion (Allen et al., 2013).

Figure 3 shows similar trends for the total number of bank accounts per 1,000 adults. These data are available for only a sub-set of countries, though and give thus a less complete picture than the branch penetration data. In addition, this is a rather imperfect measure of account penetration, as clients can have several accounts, including with the same bank. The advantage of these data is that they are available on higher frequency than household survey data. Combining both sources and extrapolating annual changes in financial inclusion might thus be a helpful approach.

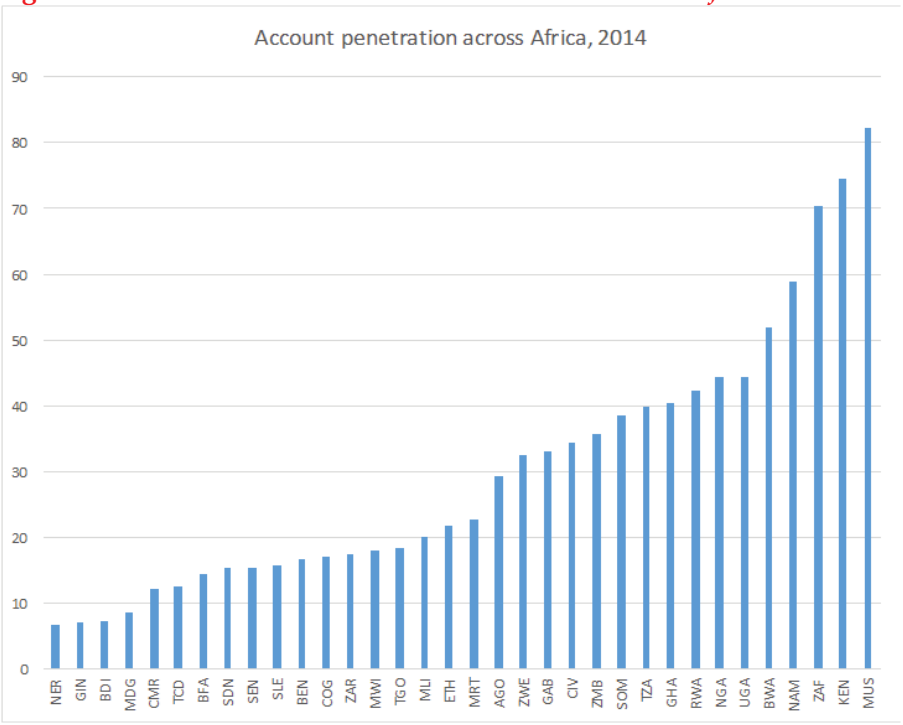
Figure 3: Account penetration across regions



Source: Authors' calculations based on Global Financial Development Data. The median for each region is shown.

In spite of the progress in financial inclusion across the region, there is still a large inclusion gap in the region, though differing across countries. Figure 4 shows the enormous variation in account penetration across Sub-Saharan Africa, which ranges from over 80% in Mauritius to below 10% in Madagascar, Burundi, Guinea, and Niger. While this variation partly reflects the variation in income levels, this is certainly not the only factor, as Kenya, for example is the African country with the second highest account penetration in the region.

Figure 4: Financial inclusion across countries within Africa



Source: Authors' calculations based on Global Findex data

The Global Findex data do not allow documenting variation across countries but also changes over time between 2011 and 2014. Table 1 shows account penetration in 2011 and 2014 for the countries for which data are available for both years, and the changes in percentage points. As can be seen, while several countries in East and Southern Africa saw dramatic increases in account penetration (led by Kenya with a 32 percentage point increase and Botswana, Tanzania and Uganda with increases well above 20 percentage points), several countries saw a reduction in account penetration, including Angola (10 percentage points), Zimbabwe (7 percentage points), and Cameron (3 percentage points). While most countries saw an improvement in financial inclusion, as measured by account penetration, progress has been very uneven.

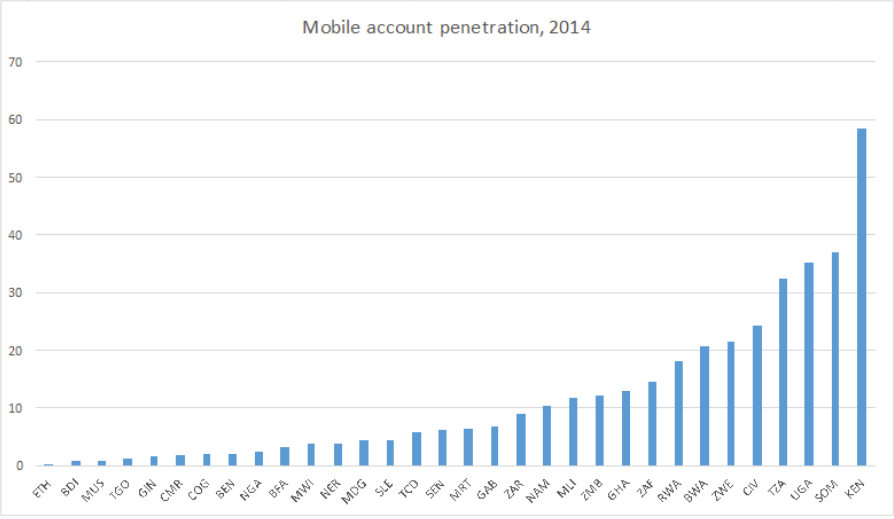
Table 1: Account penetration across Africa countries, 2011 and 2014

	Account penetration 2011	Account penetration 2014	Change
Angola	39.20	29.32	-9.89
Zimbabwe	39.65	32.39	-7.26
Cameroon	14.81	12.18	-2.63
Burundi	7.24	7.11	-0.13
Sierra Leone	15.34	15.58	0.24
Burkina Faso	13.35	14.36	1.00
Malawi	16.54	18.09	1.55
Mauritius	80.12	82.21	2.09
Madagascar	5.52	8.55	3.03
Guinea	3.69	6.96	3.27
Chad	8.96	12.43	3.47
Niger	1.52	6.71	5.18
Mauritania	17.46	22.87	5.40
Benin	10.46	16.62	6.16
Congo	10.05	17.07	7.02
Togo	10.19	18.25	8.07
Sudan	6.90	15.27	8.37
Rwanda	32.76	42.12	9.35
Senegal	5.82	15.42	9.60
Ghana	29.43	40.51	11.08
Mali	8.21	20.08	11.86
Congo, Dem. Republic	3.70	17.48	13.78
Gabon	18.95	33.01	14.07
Zambia	21.36	35.64	14.28
Nigeria	29.67	44.44	14.77
South Africa	53.65	70.32	16.67
Botswana	30.26	51.96	21.70
Tanzania	17.26	39.78	22.52
Uganda	20.46	44.45	23.99
Kenya	42.34	74.66	32.31

Source: Global Findex, 2011 and 2014

We discussed the relative high mobile money account penetration in Sub-Saharan Africa compared to other regions above. Behind the regional median, however, is an enormous variation in the share of population with mobile accounts across Africa, as shown in Figure 5. Leading is Kenya with a population share of almost 60% with mobile money accounts. Tanzania, Uganda and Somalia have a population share with mobile money accounts of more than 30%. On the other extreme, there are many African countries, where mobile money accounts have extremely low outreach.

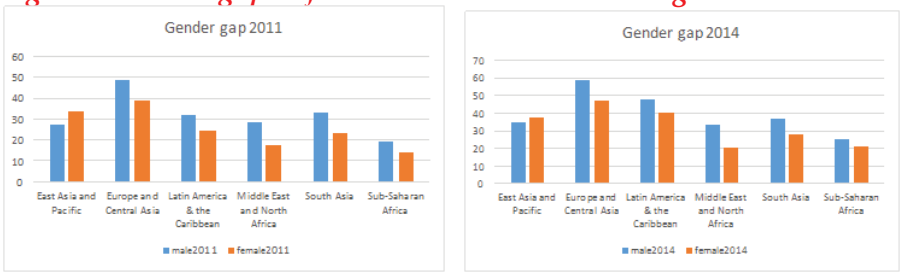
Figure 5: Mobile money account penetration across countries in Africa



Source: Author's calculations based on Global Findex data.

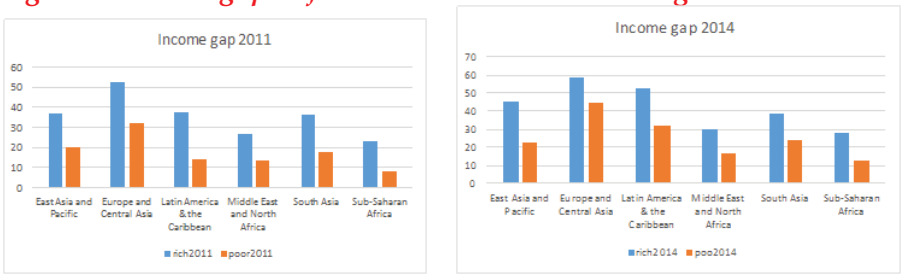
The increase in financial inclusion has gone hand in hand with a closing of the gender gap. While in 2011 men were 1.4 times as likely as women to have an account, this ratio dropped to 1.2 in 2014. Similar trends can be observed for Latin America and South Asia, while in Middle East and North Africa and in Europe and Central Asia there was little change. In East Asia and Pacific, women are more likely to have an account than men, though the ratio has tightened between 2011 and 2014.

Figure 6: Gender gap in financial inclusion across regions



Source: Author's calculations based on Global Findex data. The median for each region is shown.

Figure 7: Income gap in financial inclusion across regions



Source: Author's calculations based on Global Findex data. The median for each region is shown.

The increase in financial inclusion has benefitted relatively more the poorest two income quintiles than the richest 60%. While in 2011 the median account penetration of the 60% richest was 2.7 times as high as the account penetration of the poorest 40%, the ratio was 2.2 in 2014. This ratio has gone down in other regions as well, with the notable exception of East Asia and Pacific where it increased from 1.79 to 2. The biggest drop can be seen in Latin America. Critically, Sub-Saharan Africa shows – in the median – still the lowest financial inclusion of the lowest two income quintiles of all regions, both in absolute terms (12.9%) as relative to the inclusion of the upper three income quintiles.

Table 2 shows that mobile account penetration in 2014 accounts for a large share of the general increase in account penetration discussed above. Here we use a global sample of countries and regress the difference in account penetration in 2014 and 2011 on mobile account penetration in 2014, log of GDP per capita in 2014 (to account for income differences across countries), the average inflation rate between 2011 and 2014 and the Rule of Law indicator from the Kaufman, Kraay and Mastruzzi World Governance Indicators, averaged between 2012 and 2014. Both for the general measure of account penetration and across the sample splits between male and female population and between the two lower and upper three income quintiles, we find that mobile account penetration in 2014 enters significantly and positively. The coefficient estimates also provide evidence of the additionality effects of mobile money accounts. Consistent across the sample splits, a one percentage point increase in mobile account penetration is associated with at least half a percentage point increase in account penetration between 2011 and 2014. We also find that richer countries experience

higher increases in account penetration, while we do not find evidence for any significant and consistent relationships between macroeconomic stability or Rule of Law and changes in account penetration. It is important to stress that these simple OLS regressions do not allow for any causal interpretation and do not shed light on the policies and institutions that have helped increase financial inclusion. However, they point to the important role of mobile money and technological innovation, in general, for progress in financial inclusion.

Table 2: What explains variation in account penetration between 2011 and 2014?

	Difference in account penetration	… among female population	…among male population	…among poorest 40%	…among 60% richest
Mobile account penetration 2014	0.546	0.518	0.566	0.522	0.560
	(6.48)**	(6.26)**	(5.46)**	(4.96)**	(5.55)**
Log GDP per capita 2014	4.030	4.988	2.832	5.963	2.630
	(4.17)**	(5.26)**	(2.38)*	(4.93)**	(2.27)*
Log (Inflation)	6.761	22.362	-6.193	29.019	-8.365
	(0.34)	(1.15)	(0.25)	(1.17)	(0.35)
Rule of Law	-2.377	-3.152	-1.533	-3.222	-1.617
	(1.49)	(2.01)*	(0.78)	(1.62)	(0.85)
Constant	-29.711	-39.614	-17.868	-48.094	-16.320
	(3.23)**	(4.39)**	(1.58)	(4.19)**	(1.48)
R^2	0.48	0.51	0.37	0.44	0.37
N	62	62	62	62	62

* $p<0.05$; ** $p<0.01$

Financial inclusion - policy challenges

Prioritizing financial inclusion on the financial sector agenda has critical repercussions for the mix of policy reforms and institution building in an economy. First, however, is the question on how realistic is it to expect outreach of the financial system to 100% of the population? What are realistic benchmarks and targets when expanding access to financial services? Measuring access to financial services is a first important step. In order to develop policies and targets, however, benchmarks are needed and bottlenecks in expanding access have to be identified.

The objective of 100% account penetration for payment and savings services has been declared a global objective, while – with good reason – no such objective exists for credit services. First, there is a clear trade-off between expanding outreach to credit

services and the stability risks that this involves. Second, as discussed above in section 2, payment and savings services seem more immediate needs than credit services for large part of the population.

The discussion in section 2 has already pointed to some of the barriers. More generally, Honohan and Beck (2007) and Beck et al. (2011) point to four major characteristics of African economies and societies that hamper further attempts at increasing financial inclusion. First, the *small scale* of economies makes the reaping of scale economies difficult and thus outreach efforts to previously unbanked segments of the population more difficult. In addition, the dispersed populations in many African countries means that financial service provision outside urban centers is not cost-effective. a large share of all economic agents operate in the *informal sector* and do not have the necessary formal documentation, such as enterprise registration, land titles, or even formal addresses. This increases the costs and risks for financial institutions and excludes large segments of the population from formal financial services. Third, a high degree of *volatility* on the individual and aggregate levels increases costs and undermines risk management, while at the same time it increases the benefits financial system customers stand to gain. Fourth, *governance problems* continue to plague many private and government institutions throughout the continent and undermine not only the market-based provision of financial services, but also reform attempts and government interventions aimed at fixing market failures.

Financial innovation, especially related to technology, as well as financial integration, can help overcome these barriers. New delivery channels, such as mobile-phone based and agency banking can help mitigate scale- and risk-related frictions. Mobile-based banking can help reduce operational risk, while it minimizes the opportunities for theft and fraud. It is more, financial services via mobile phones offer African financial systems the chance for a transformational banking model that leapfrogs conventional banking models by substantially reducing transaction costs.

Financial integration can also address many of these barriers. It can help overcome the diseconomies of scale present in many of Africa's small financial systems. While both the theoretical and empirical literature on the effect of foreign bank entry has not come to unambiguous findings, there is evidence of a positive relationship between foreign bank entry and financial inclusion in the case of financial institutions from geographically and culturally close home countries (Mian, 2006; Claessens and van Horen, 2014; Beck, 2015). These findings are especially interesting in the context of Africa, with the increasing share of shift in the composition of the foreign bank population across the continent. Specifically, South African, Moroccan, Nigerian and Kenyan banks have increased their role across the continent over the past two decades. While not all of these regional banks are necessarily leaders in financial inclusion, they bring experience from other African countries and can increase competition in their host countries. There is some tentative evidence that this has helped reduce small firms' financing constraints (Beck, 2015).

However, recent papers have also pointed to the important role of financial infrastructure for the effect of cross-border banking. Claessens and van Horen (2014) find that foreign banks have a negative impact on financial deepening in countries where they have a limited market share, where enforcing contracts is costly and where credit information sharing is limited. Similarly, Bruno and Hauswald (2014) show that the positive growth

effect of foreign banks is a function of the contractual and information frameworks of the host countries.

The role of government and competition

While the role of governments as retail providers of financial services has been discredited across Africa, governments continue to have an important role in helping expand access to financial services. On the one hand, there is the long-term agenda of institution building, including credit registries and contractual frameworks, which cannot be ignored. Beyond this long-term agenda, however, there are short-term solutions and policies that can help turn bankable into banked population and thus push the financial system closer to the frontier.

Competition is an important area for government action. Allowing competition within the banking system and from outside the banking system can help foster the necessary financial innovation to push the financial system towards the frontier and exploit the possibilities that new methodologies, products and technologies can offer. An increased focus on competition, however, has critical repercussion for regulation and government policy in general. It entails a very sophisticated approach that has to balance (i) the need for innovation, (ii) avoiding market dominance of new players that gain rapidly market share in new products and (iii) reducing risks of fragility. In order to illustrate this, we return to the area of mobile financial service providers. On the one hand, the monopolistic position of Safaricom in the cell phone market and the expectation of monopolistic rents encouraged the company to launch M-Pesa. The possibility to enter without regulatory restriction has certainly helped, though the dominating market position is of concern for market development going forward, and mobile payment services might raise new previously unknown risks. A dynamic approach is therefore called for, where the regulatory authorities – in this case both banking and telecomm regulators – have to follow market development closely and react flexibly.

In certain instances, authorities might have to force financial service providers to cooperate rather than compete with each other, especially in financial sector infrastructure, such as payment systems. One striking feature of African financial systems is the lack of interconnectedness of ATM and POS networks across banks. As a public good, key payment system infrastructure such as this should live up to certain public policy concerns, such as allowing fair and competitive access to retail payments infrastructure to take hold. A more comprehensive approach would imply expanding traditional infrastructure, such as credit registries and payment systems beyond banks. Another lever to increase competition is transparency, which can be created by, for example, forcing financial institutions to publish their service fees in major newspapers. Currently, only a minority of countries in Africa have such a requirement.

Islamic finance – panacea or another piece of the puzzle?

Islamic finance is a relatively new addition to the set of financial providers and products in most African countries. There are five principles that differentiate Islamic finance from conventional finance. Three of these are negative principles: the prohibition on *riba* (usury, which is generally defined as interest or excessive interest), the prohibition on *gharar* (risk or uncertainty, which is generally defined as speculation), and the prohibition on financing for illicit sectors in Sharia (such as weapons, drugs, alcohol, and pork). The other two principles are positive: the profit- and loss-sharing principle and the principle that all transactions have to be backed by a real economic transaction that involves a tangible asset. Despite the implication of the term, Islamic finance is not restricted to Muslim customers. Islamic financial products can be offered by Islamic banks and conventional banks through specialized windows.[4] It has been popular in the Middle East and some Asian countries for many years and has expanded to Africa in recent years, partly driven by resources and technical assistance from the Middle East. The ultimate question - the extent to which the provision of Sharia-compliant products can expand the banked population - is still an open one. On the one hand, such products might overcome the reluctance of religious households and entrepreneurs to overcome their reluctance to use formal financial services. This segment is probably small. On the other hand, the main barriers laid out above – cost and risk – are still there, so that Islamic banking is unlikely to help push out the frontier. Islamic finance seems to offer the chance to attract additional resources from the oil-exporting countries of the Middle East. On the other hand, most African countries do not face a resource but rather an intermediation constraint. While the jury is still out, the experience over the past years suggests that while the share of Islamic finance in overall intermediation will further increase across the continent, it will help deepen and broaden the financial system only at the margin.

Regulatory policies

As institutions reaching out to the low end of the market expand both in outreach and in volume, the question on how to regulate them properly arises. Analysts have early on agreed on an important distinction between institutions that require prudential regulation, as they use deposit funding to lend to borrowers, and institutions that require "only" conduct regulation as they either do not on-lend their deposits or use non-deposit resources for lending.[5] Prudential regulation is aimed at the solvency and liquidity of the individual financial institution (and the overall financial system), partly with the aim of protecting small depositors and thus addressing the agency problem between depositors and financial institution. Conduct regulation is more concerned about problems between clients and the institutions and focuses on consumer protection. In reality, there is a wider range of options on regulating low-end-market financial institutions, ranging from (i) registering with a government authority, (ii) publishing regular reports on operations and financial reports, (iii) being subject to non-prudential conduct regulation and supervision, and (iv) being subject to prudential regulation. Even where low-end-market financial institutions are subject to prudential regulation, there is often a special regulatory regime for these institutions ("window"), which might involve lower documentation and reporting requirements, higher capital and

liquidity requirements though lower minimum capital requirements, more stringent provisioning requirements and certain activity restrictions such as on foreign exchange.

An important challenge to consider is avoiding regulatory arbitrage, i.e. financial institutions choosing a lighter regulatory regime if they can, with potential fragility risks. A functional approach to regulation, i.e. regulating according to the services provided by an institution rather than according to its name is therefore critical, combined with a risk-based approach, where institutions whose potential failure constitutes a bigger fragility risk for the economy and society face more rigorous regulation and supervision, is critical in this context.

A related question is who should supervise low-end-of-market institutions. In many low- and even middle-income countries, the supervisor of commercial banks (in many cases the central bank) is the only reputable, competent and politically independent institution and would therefore be the natural host as regulator and supervisor of MFIs. On the other hand, regulating and supervising these institutions might require a different approach and skill set that might not easy to integrate into a central bank or bank supervisory culture. One compromise might be to have a specialized department within the bank supervisory authority or central bank. In either case, supervisory capacity is often an important constraint. Another challenge is the number of institutions to supervise. Where this number is very large, delegated supervision has been suggested, e.g. in the case of cooperatives or credit unions, where an apex institution undertakes supervision of individual institutions and is in turn regulated and supervised by the bank or MFI supervisory entity.

In the context of conduct regulation, consumer protection has taken on an increasingly important role. Consumer protection seems to be especially important for institutions catering to the low-end of the market, given the limited financial literacy of the client base. This protection seems important across the different services, but especially when it comes to credit, with the possible risk of overindebtedness. There is a large policy literature on effective consumer protection.[6] Effective consumer protection in financial services focuses on four key areas: (1) disclosure of interest rates and fees, which is clear, simple, easy to understand, and comparable; (2) prohibitions of business practices that are unfair, abusive, or deceptive; (3) recourse mechanisms that are efficient and easy to use; and (4) financial education that gives consumers the knowledge, skills, and confidence to understand and evaluate the financial information they receive (Rutledge, 2010). There are different instruments of consumer protection corresponding to these different objectives. Disclosure requirements are one of the most basic and important tools. For example, providing customers with a clear indication of the monthly costs of credit, including interest, principal, and fee payments, over the complete lifetime of the credit should be a minimum requirement. A step up from minimum consumer disclosure rules (which can be enforced by bank supervisors or on a self-regulatory industry-wide basis by the banking association) are government regulations that prohibit financial institutions from selling specific products to all but sophisticated clients (such as corporate clients or high-wealth individuals) and government regulations that impose affordability tests on financial institutions before credit may be extended. However, there is a trade-off between too onerous regulation that prevents the financial system from expanding access and protection of consumers. A final set of rules imposes certain minima or maxima on the costs of financial services, including usury interest rates. Such

interest rate ceilings (in the case of credit) or floors (in the case of savings products) can, however, easily turn into a restrictive tool that reduces access to services by riskier customers and customers with need smaller transactions and who are thus costlier for financial institutions.[7] While a case might be made to reduce abusive levels of interest and avoid overindebtedness, often such as caps are set at an unrealistically low level. One important concern in this context is that lenders can try to get around such caps by imposing fees and reducing transparency.

Very different regulatory challenges arise in the area of digital payments, related to network externalities in payment services.[8] Given that new payment networks require large investments but can only be successful if accepted by users on both sides of transactions, there can be fierce competition to dominate a market (and thus recover the fixed investment), while there might be less competition once a dominant player emerges. Competition will therefore be more about new and disruptive technologies rather than within existing markets and products. Critical for the regulator will be to decide on the extent to which to allow new players into the market (e.g., mobile network operators (MNO) offering payment services) and the degree of regulation to be imposed on them. It is not clear-cut whether an MNO-led model such as in Kenya, where the client holds the account with the MNO and has interaction only with the MNO and its agents, or a bank-led model as in most countries, where a bank account is necessary, is better or whether it is rather the country-specific circumstances that determine which model is best. As pointed out by Bourreau and Verdier (2010), however, there are more than two polar forms of cooperation between MNOs and banks, which might have very different interests in terms of revenue generation and cost management; these different interests are complementary in some circumstances and conflicting in others. Another important issue is whether to impose via regulation interoperability between networks or have the market "work it out".[9]

Another critical question for regulators is the ID requirements to be imposed on such transaction accounts and payments, with the standard recommendation being a risk-based approach, with accounts and transactions below a threshold size being excluded from the more rigorous banking documentation requirements related to Anti-Money Laundering and Countering Financing of Terrorism (AML/CFT) rules (Hernandez-Coss et al, 2005).

Demand-side constraints

In addition to supply side constraints, there are also significant demand-side constraints that have often been ignored, both on the household, but also enterprise level. As already discussed above, financial literacy has been an increasingly important topic among policy makers and donors over the recent years. In this context, it is important to distinguish between financial knowledge or literacy, i.e. awareness and knowledge about existence and functioning of specific services and products) and financial capability, i.e. good financial decision-making and also the ability to access the formal financial services with sound business plans, bankable applications. Initial studies have shown the potential for such programs, but also the need for targeted efforts.

There is also a general trust issue. The mistrust vis-à-vis financial institutions might be easier to overcome in the case of transaction services, where the intertemporal nature of financial services is reduced to a few minutes, especially in the case of mobile phone

banking than in the case of savings or credit services, where the result can only be seen after months if not years.

Gender issues

The gender dimension is critical in the discussion on financial inclusion, both in terms of access to financial services across male and females and in terms of female empowerment being an important outcome variable. This box briefly summarizes some of the cross-cutting issues in this respect. First, females are, on average, less likely to have access to formal financial services than males. At the same time, a large share of self-employed in developing countries is female and thus in need of financing. Demirguc-Kunt, Klapper and Singer (2013) document a significant gender gap in individual account holdings, though with significant variation across countries. Aterido, Beck and Iacovone (2013), however, show for several Sub-Saharan African countries, that this unconditional gender gap turns insignificant once one controls for other characteristics, a finding that holds both for individual account holding and entrepreneurial access to credit. In the case of enterprises, they explain this finding with a selection bias and in the case of individuals with gender gaps in other dimensions related to the use of financial services, such income, education, household and employment status. The findings for access to entrepreneurial credit are matched by Bruhn (2009) for Latin America. However, gender gaps in critical factors that determine access to formal financial services, including employment and income status, legal restrictions (such as in asset ownership and holding in some countries) and education, provide an important justification to focus efforts in financial inclusion on female individuals and entrepreneurs and look beyond traditional banking techniques focused on salaried, formally employed and educated individuals.

Beyond the lack of access to formal financial services by women, there are several other reasons why the microfinance movement and the financial inclusion agenda more generally have focused on women. It has often been argued that credit to female borrowers has a more direct impact on household welfare than credit to male borrowers as they care more about children and family. However, there is a trade-off as documented by Kevane and Wydick (2011); women in childbearing age face higher time constraints due to family commitments and are less likely to expand employment in their micro-enterprise with credit than male micro-entrepreneurs or older women. Another reason is that women are often restricted from access to formal financial services due to intra-household restrictions, though this might also imply tailored solutions that protect women against having to share credit or savings proceed freely within the household. Another, supplier-focused, argument is that female borrowers constitute less of a credit risk, as they are less mobile than men and often more conservative in their investment decision.[10] Repayment rates are typically higher for women than for men.[11] Looking beyond credit products; on the one hand, interventions to increase savings are often more successful for women than for men. On the other hand, some interventions are less successful for women than for men, given intra-household and other constraints holding back women. This implies that such interventions have to take into account these specific constraints faced by women in order to be successful.

Looking beyond the inclusion agenda

While this paper has focused on access to and use of financial services by individuals, households and micro-enterprises, I would like to make a short remark on the broader literature of finance and poverty alleviation. In addition to direct benefits of access to financial services, there might also be important indirect effects from financial deepening. If financial deepening reduces the cost of credit and improves allocation of scarce capital across the economy, this can have an impact on the structure of economy.

While there is no firm evidence that direct access to credit is always welfare improving for its recipients, there is some tentative evidence that financial deepening can reduce income inequality and poverty alleviation through indirect channels. On the aggregate cross-country level, Beck et al. (2012) find that that the negative relationship between financial depth and changes in income inequality goes through enterprise and not household credit. Assuming that access to formal credit by microenterprises is more likely to be captured by household credit, this suggests that the pro-poor nature of financial deepening is primarily linked through indirect effects. However, this study is subject to the important caveats on cross-country comparisons. In addition, recent evidence also suggests that financial deepening can contribute to employment growth, especially in developing countries (Pagano and Pica, 2011), consistent with studies for Thailand and the U.S. Gine and Townsend (2004) compare the evolution of growth and inequality in a dynamic general equilibrium model with the actual development in the Thai economy and show that financial liberalization and the consequent increase in access to credit services can explain the fast GDP per capita growth, rapid poverty reduction and initially increasing but then decreasing income inequality. Underlying these developments are occupational shifts from the subsistence sector into the intermediated sector and accompanying changes in wages. Net welfare benefits of increased access are found to be substantial, and, though they are concentrated disproportionately on a small group of talented, low wealth individuals who without credit could not become entrepreneurs, there are also benefits to a wider class of workers because eventually wage rates increase as a result of the enhanced access to credit by potential entrepreneurs. Beck, Levine and Levkov (2010) find similar evidence for the U.S., where branch deregulation in the 1970s and 1980s resulted in lower income inequality. Credit expansion following deregulation led to an increase in labor demand, which fell disproportionately on unskilled, lower-income households whose wage rates and working hours increased. These labor market reactions to financial liberalization can thus explain the tightening in income inequality. Ayyagari, Beck and Hoseini (2013) find a strong negative relationship between financial deepening, rather than financial inclusion, and rural poverty, following financial liberalization in 1991 in India. They also find that financial deepening reduced poverty rates among the self-employed, and also supported an inter-state migration from rural areas into the tertiary sector in urban areas.

Taken together, the empirical evidence so far suggests an important difference between two concepts – *Finance and Poverty Alleviation* and *Finance for the Poor*. By changing the structure of the economy and allowing more entry into the labor market by previously unemployed or underemployed segments of the population, financial deepening (more efficient financial institutions and markets) helps reduce income inequality and poverty, as discussed above. By doing so, financial deepening can help achieve more inclusive growth and also help overcome spatial inequality in growth benefits. It is thus important to understand that the effects of financial deepening on employment and

poverty alleviation do not necessarily come through the "democratization of credit" but rather a more effective credit allocation. This also implies that microcredit is not necessarily the most important policy area to reap the benefits of financial deepening for poverty alleviation.

For the poor to benefit directly from financial sector deepening and broadening (*Finance for the Poor concept*) it is important to look beyond credit to other financial services that are needed by the poor, such as simple transaction or savings services. While it should be a goal to achieve access to basic transaction and savings services for as large a share of the population as possible to thus enable them to participate in the modern market economy, the agenda in boosting access to credit should focus on improving the efficiency of this process, replacing access through political connection and wealth as it still happens in many developing countries with access through competition. By channeling society's resources to the most credit-worthy enterprises and project, the financial system can enhance inclusive growth.

Conclusions

This paper has discussed the state of financial inclusion in Africa as well as the opportunities and challenges to expand it further. Both financial innovation, especially technology, and financial integration, offer good opportunities. Government has to play an important, though mostly supporting role in this context.

When discussing financial inclusion, it is critical to distinguish between different services. The recent empirical literature allows some important, though still to be confirmed, conclusions. While efforts to increase payments and savings services to large population segments can have very positive welfare implications for individual and positive aggregate growth effects, efforts to increase access to credit and insurance services should be much more targeted.

Most importantly, data collection continues to be a critical part of the overall effort to increase financial inclusion. The current cross-country data collection efforts on household and enterprises surveys should be complemented with more tailored surveys to gauge the barriers to access to and use of financial services by individuals and small enterprises. The increasing wave of randomized control trials assessing benefits of specific interventions and products should be complemented with broader assessment of specific policies and institutions. Central banks can play a critical role by making available, for example, credit registry data and other micro-level data.

Notes

1. See, for example, CGAP (2011), which defines financial inclusion as a "state in which all working age adults have effective access to credit, savings, payments and insurance from formal service providers" and defines effective access as "convenient and responsible service delivery, at a cost affordable to the customer and sustainable for the provider…"
2. See Beck (2009) for a discussion on different econometric techniques in the finance and growth literature.
3. The FinScope and FinAccess surveys are an important survey tool, but are available for only a quarter of African countries, at this stage.

4. Islamic products have to be offered through specialized windows that must, in theory, rely on resources that are ring-fenced because the source of the resources and the use of the resources have to be Sharia-compliant, that is, assets and liabilities must match.
5. Another exception are MFIs who partly rely on forced savings of their borrowers for funding. CGAP (2011) argues that they can basically go without prudential supervision.
6. For the following, see, for example, Beck et al. (2011) and the references therein.
7. For a recent discussion on this issue, see Maimbo and Henriquez Gallegos (2014)
8. See Bourreau and Verdier (2010) for more details on the following discussion.
9. A working group financed by the Bill & Melinda Gates Foundation and headed by Liliana Rojas Suarez (Center for Global Development) and Stijn Claessens (IMF) is currently developing a policy framework on how to regulate digital payments, with the paper to be launched in March 2016.
10. For a more in-depth discussion, see chapter 7 in Aghion de Armendariz and Morduch (2007).
11. See for example Beck, Behr and Güttler (2013) with evidence from two MFIs in Albania and Bolivia that lend to both men and women.

References

Aghion de Armendariz, Beatriz and Jonathan Morduch (2007). *The Economics of Microfinance*. MIT Press.

Allen, Franklin, Elena Carletti, Robert Cull, Jun Qian, Lemma Senbet and Patricio Valenzuela. 2013. Improving Access to Banking: Evidence from Kenya. World Bank Policty Research Working Paper 6593, Washington D.C.

Ashraf, Nava, Dean Karlan, and Wesley Yin (2006a) Tying Odysseus to the Mast: Evidence from a Commitment Savings Product in the Philippines. *Quarterly Journal of Economics* 121, 673–97.

Ashraf, Nava, Dean Karlan, and Wesley Yin (2006b) Deposit Collectors. *Advances in Economic Analysis & Policy*, 6, 1–22.

Aterido, Reyes, Thorsten Beck and Leonardo Iacovone (2013) Access to Finance in Sub-Saharan Africa: Is There a Gender Gap?, *World Development* 47, 102-120.

Attanasio, Orazio, Britta Augsburg, Ralph de Haas, Emla Fitzsimons, and Heike Harmgart (2015): The Impacts of Microfinance: Evidence from Joint-liability Lending in Mongolia, *American Economic Journal: Applied Economics* 7, 90-122

Ayyagari, Meghana, Thorsten Beck and Mohamad Hoseini. 2013. Finance and Poverty: Evidence from India. CEPR Discussion Paper 9497.

Banerjee, Abhijit. 2013. Microcredit Under the Microscope: What Have We Learned in the Past Two Decades, and What Do We Need to Know? *Annual Review of Economics*, 5, 487–519.

Banerjee, Abhijit and Ester Duflo, The Economic Lives of the Poor, *Journal of Economic Perspectives*, 21, 141–67, 2007.

Banerjee, Abhijit V., Dean Karlan and Jonathan Zinman (2015) Six Randomized Evaluations of Microcredit: Introduction and Further Steps, *American Economic Journal: Applied Economics* 7, 1-21.

Beck, Thorsten. 2015. Cross-border Banking and Financial Deepening: The African Experience, J*ournal of African Economies* 24, i32-i45.

Beck, Thorsten. 2009. The Econometrics of Finance and Growth, in: Terence Mills and Kerry Patterson (Eds.): *Palgrave Handbook of Econometrics, Vol. 2*, Palgrave Macmillan

Beck, Thorsten, Patrick Behr and Andre Guettler. 2013. Gender and Banking: Are Women Better Loan Officers? *Review of Finance* 17, 1279-1321.
Beck, Thorsten, Berrak Buyukkarabacak, Felix Rioja and Neven Valev. 2012. Who Gets the Credit? And Does it Matter? Household vs. Firm Lending Across Countries. *B.E. Journal of Macroeconomics: Contributions 12.*
Beck, Thorsten, Asli Demirguc-Kunt and Maria Soledad Martinez Peria. 2007. Reaching Out: Access to and Use of Banking Services Across Countries, *Journal of Financial Economics,* 85, 234-66.
Beck, Thorsten, Ross Levine, and Alexey Levkov. 2010 Big Bad Banks? The Winners and Losers from Bank Deregulation in the United States. *Journal of Finance* 65, 1637–1667.
Beck, Thorsten, Samuel Maimbo, Issa Faye and Thouraya Triki. 2011 *Financing Africa: Through the Crisis and Beyond*. World Bank, Washington, D.C.
Beck, Thorsten, Haki Pumak, Ravindra Ramrattan and Burak Uras. 2015. Mobile Money, Trade Credit and Economic Development: Theory and Evidence. CentER Discussion Paper 2015-23, Tilburg, Netherlands.
Blumenstock, Joshua, Nathan Engle and Marcel Fafchamps (2013) Risk Sharing and Mobile Phones: Evidence in the Aftermath of Natural Disasters. Working Paper
Bourreau, Marc and Marianne Verdier. 2010. Cooperation for Innovation in Payment Systems: The Case of Mobile Payment. *Communications and Strategies* 1, 95-114.
Ruhn, Miriam. 2009. Female-Owned Firms in Latin America: Characteristics, Performance, and Obstacles to Growth. World Bank Policy Research Working Paper 5122.
Bruno, Valentina and Robert Hauswald. 2014. The Real Effects of Foreign Bank Entry. *Review of Finance* 18, 1683-1716.
Emran, M. Shahe , A. K. M. Mahbub Morshed and Joseph E. Stiglitz. 2007. Microfinance and Missing Markets. Working Paper
CGAP. 2011. Global Standard-Setting Bodies and Financial Inclusion for the Poor: Toward Proportionate Standards and Guidance. Washington, DC
Claessens, Stijn, and Neeltje Van Horen. (2014) "Foreign Banks: Trends and Impact," *Journal of Money, Credit and Banking* 46(S1), 295–326.
Demirguc-Kunt, Asli, Leora Klapper and Dorothe Singer (2013). Financial Inclusion and Legal Discrimination Against Women. Policy Research Working Paper 6416, World Bank, Washington D.C.
Giné, Xavier, and Robert M. Townsend. 2004. Evaluation of Financial Liberalization: A General Equilibrium Model with Constrained Occupation Choice. *Journal of Development Economics* 74, 269–307.
Hernández-Coss, Raúl, Chinyere Egwuagu, Jennifer Isern, and David Porteous. 2005. AML/CFT Regulation: Implications for Financial Service Providers that Help Low-income People. Washington DC: CGAP Focus Note 29.
Honohan, Patrick and Thorsten Beck. 2007. *Making Finance Work for Africa*. World Bank.
Jack, William and Tanveer Suri 2014 Risk Sharing and Transaction Costs: Evidence from Kenya's Mobile Money Revolution, *American Economic Review* 104, 183-223.
Johnston, Don, and Jonathan Morduch. 2008. The Unbanked: Evidence from Indonesia *World Bank Economic Review* 22, 517-37.
Karlan, Dean and Jonathan Zinman. 2010 Expanding Credit Access: Using Randomized Supply Decisions to Estimate the Impacts, *Review of Financial Studies* 23, 433-464.
Kevane, Michael and Bruce Wydick (2001): Social Norms and the Time Allocation of Women's Labor in Burkina Faso. *Review of Development Economics* 5. 119-129
Maimbo and Henriquez Gallegos. 2014. Interest Rate Caps Around the World: Still Popular, But a Blunt Instrument. World Bank Policy Research Working Paper 7070,

Washington, DC.
Mian, Atif. 2006 Distance Constraints: The Limits of Foreign Lending in Poor Countries. *Journal of Finance*, 61, 1465–1505.
Pagano, Marco and Giovanni Pica (2012): Finance and Employment, *Economic Policy* 69, 5-55
Rutledge, Susan. 2010. Consumer Protection and Financial Literacy: Lessons from Nine Country Studies. Policy Research Working Paper 5326, World Bank, Washington, DC.

Two

Digital Financial Services and Regulatory Policies in Africa+

Mthuli Ncube*

The Challenge:
Low levels on inclusion in financial services, requiring the promotion of Digital Financial Services.
Action by Policy-Makers &Regulators
Regulatory environment should be more facilitative to DFS and financial inclusion, while being cognisant of the inherent risks
Action by Development Community
Provide financial resources for financial institutions and MNOs to partner, reduce risk, and develop digital financial services platforms
Action by Private Sector
Be proactive in approaching and partnering government and development community in setting up and scaling up digital financial services platforms.

*Professor of Public Policy, Blavatnik School of Government & Fellow of St Antony's College, University of Oxford; Chairman of AERC Board. Email: mthuli.ncube@bsg.ox.ac.uk
+Prepared for the AERC Senior Policy Seminar, 22-23 March 2016, Nairobi, Kenya. I acknowledge comments from discussants and participants at the Senior Policy Seminar. All errors remain my own.

Introduction

Framework for financial sector development, digital financial services and economic development

Digital Financial Services (DFS) are fast growing market across the globe. DFS include mobile banking and all electronic means of proving financial services, including use of credit cards and debit cards. In 2013, for example, there were 203 million registered mobile money customers and 61 million active customers (customers with at least one transaction in the past 90 days), according to GSMA's State of the Industry 2013 report. To support these customers, there are 886,000 agents, of which 52 percent are active. The most popular transaction is airtime top-up, representing 75 percent of transactions. Person-to-person (P2P) transfer is the second most popular transaction type at 18 percent. Bill payment, bulk payment and merchant payment make up the remaining types, while deposit to savings account, purchase of insurance and repayment of credit products are negligible. Only 8 of the 219 deployments are earning revenues in excess of EUR 800,000, showing that there is still a long way to go for sustainable financial inclusion.

In order to situate Digital Financial Services (DFS) in the landscape of financial services, it is important to present a framework that captures its role in a broader financial system. Certainly, the framework for an appropriate regulatory framework of DFS requires a functional approach to the role of the financial system. A narrow traditional savings-mobilization approach is not adequate.

The ultimate consequence of a well-functioning financial system is that of economic development. A well-functioning financial markets, along with well-designed institutions and regulatory systems, foster economic development. The channel for the linkage of financial system development and economic development is the functions that the system performs, in the first place. Some studies have shown that, in the case of the stock markets, features, such as liquidity, turnover, efficiency of pricing of risk, are positively correlated with current and future economic growth and productivity improvements. A liquid financial market, which is characterized by active trading among a large number of investors and firms, provides an easy entry and exit strategy both for investors and issuing firms. Thus, liquidity is a crucial feature of financial sector development, through promotion of investment.

A well-functioning financial sector also provides a channel for more efficient corporate governance and resource allocation, whereby resources are allocated to the most productive and innovative firms. The linkage between liquidity and economic growth is supported by the existing empirical evidence in that countries with liquid markets experience faster rates of capital accumulation and subsequently greater productivity gains (see Ncube and Senbet (1997)).

Ncube and Senbet, consider an environment in Africa characterised by risk and uncertainty, and an environment with imperfect information and agency problems. First, an environment characterized by risk and uncertainty calls for a financial system that provides efficient risk sharing and diversification. Under uncertainty, risk allocation and sharing are vital functions of financial markets beyond mere savings/capital mobilization, which has inspired financial liberalization/reform programs with undue

emphasis on the development of the banking sector. Consequently, both the quantity and quality of capital need to be considered in the functioning of financial markets. The traditional view is guided primarily by the quantity of capital mobilized in an economy.

Second, we consider a financial system's role in an imperfectly informed environment characterized by agency problems, such as those prevailing in Africa. In this environment, there are incentive problems among various stakeholders to firm, particularly among management and capital contributors (shareholders and bondholders), and potential conflicts between capital contributors and the society at large (non-financial claimholders, such as employees and customers), and between the capital contributors and managers on, one hand, and customers, on the other.

A well-functioning and liquid financial system serves as a vehicle for efficient contracting among conflicting parties and for disciplining of corporate insiders. For instance, a well-functioning financial system allows for active contests for corporate control so that resources are controlled by those who create the most value for the stakeholders, and ultimately for the society at large.

According to Ncube and Senbet (1997)) the principal functions of the financial system are:

- **Mobilization of domestic financial resources:** Capital markets resolve the divergence of liquidity requirements by investors, and long-term capital commitments by entrepreneurs, through risk pooling and through provision of alternative instruments to facilitate diversification, and allow for maturity transformation. This risk pooling and maturity transformation allows entrepreneurial firms to invest and grow.

- **Risk Allocation:** risk sharing in the form of diversified investments means that each investor presumably owns only a partial stake in any given project, and is not exposed to all the risk in the project. Risk sharing arrangements imply the separation of ownership and control in the sense of separating providers of real investment from the providers of risk capital.

- **Production of information and Price Discovery**: The financial system provides prices and facilitates price discovery. Prices have an information content and hence signals scarcity and value, thereby facilitating allocation of resources optimally.

- **Promotion of corporate governance:** Capital markets contribute to the growth of good corporate governance and the market for corporate control (mergers and acquisitions), all through an external imposition of discipline.

- **Improvement in the design of incentive contracts:** Capital markets facilitate the design of incentive-compatible contracts that promote alignment between management, shareholders, bondholders, government (tax payers) and customers. The market can deliver a pricing benchmark for the valuation of such incentive schemes, as well as for the assessment of these incentive contracts on corporate investments.

- **Mobilization of global capital and promotion of global integration:** Capital markets that are well-functioning can make a country more competitive in attracting global capital in the form of FDI, portfolio investment, trade finance, development finance, even global remittances.

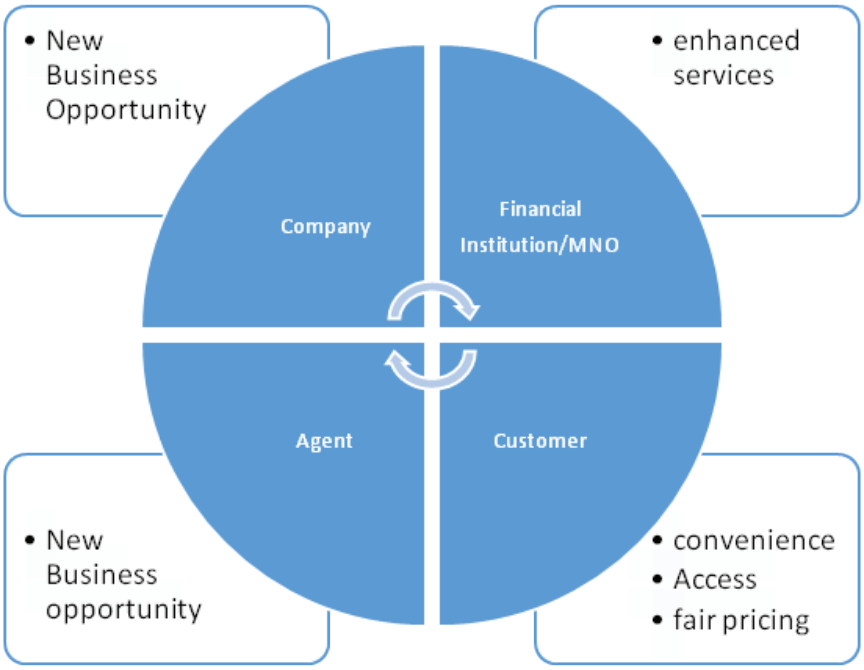
- **Financial inclusion**: One other functional role of the financial sector is to promote, through technological partnerships, financial inclusion, which involves deepening financial sector and improving access and connecting individuals and businesses that were not netted in the current arrangement of the financial system. Promoting Digital Financial Services is important for the deepening of financial inclusion.

The next sections will outline the state of the Digital Financial Services globally, DFS in Africa specifically, issues on DFS generally, and regulatory frameworks for DFS.

Digital financial services architecture

Successful development in DFS depends upon its ability to add value for all of the different parties in the 'partnership ecosystem.' Therefore, tangible value should be delivered to: customers, MNOs, banks, agents, financial institutions and often other companies, such as retailers or dealers. See figure 1 below.

Figure 1: Architecture and Partnership Ecosystem for DFS



Finding technology and business models that are workable for all parties has always proven to be challenging as different actors have distinctly different business objectives. If there is failure to add value to any partner of the ecosystem, may result in the failure and collapse of the DFS business model. These partnerships often require a form of 'co-opetition' where the parties are simultaneously working together as well as competing with each other. **Models of cooperation** differ by degree. Thus we have:

- **Light-touch model:** involves minimal cooperation among providers, which may include banks, MNOs, and other digital payments services providers.
- **Mobilephone-centered model**: mobile payments service is MNO-led, and there is minimal cooperation with banks and other players; (eg M-Pesa in Kenya and Tigo Pesa in Tanzania).
- **Bank-centered model**: the service is bank-led, and there is minimal cooperation with MNOs and other players (eg Standard Bank South Africa, First National Bank South Africa, Chase QuickPay in the United States Stanbic IBTC Bank in Nigeria).
- **Partial-integration model**: characterized by strong cooperation between banks and MNOs, but little cooperation between them and other digital payments services players(eg Orange Money in partnerships with local banks in parts of Africa).
- **Fully-integration model**: strong cooperation among partners of all types (eg Peru model for a single, open, integrated and interoperable platform for DFS).

State of DFS and financial inclusion in Africa

Africa has been at the forefront of digital financial services. In sub-Saharan Africa (SSA), 36 countries out of 54 have mobile banking services. These include, for example, Côte d›Ivoire, Ghana, Kenya, Madagascar, Mali, Nigeria, Niger, South Africa, Senegal, Tanzania, and Uganda. The December 2013 Global System for Mobile Communications Association (GSMA) data shows that there are 219 deployments globally of which 52% are in SSA. In addition, there were 47 planned deployments in the region, out of 113 planned worldwide. With roughly 2.5 billion people in lower to-middle income countries who have no access to banking services, the potential is clear. The estimates show that out of about one billion Africans, nearly 735 million (in 2012) are mobile phone subscribers, with Nigeria having the highest number of mobile phone subscriptions in Africa (16% of the continent's total mobile subscriptions).

In 2013, mobile money was rolled out in nine new markets worldwide: Bolivia, Brazil, Egypt, Ethiopia, Guyana, Jamaica, Tajikistan, Togo, and Vietnam. Regulatory reforms that are enabling mobile money services are contributing to the growth of the industry in terms of number of deployments.

There were over 203 million registered mobile money accounts worldwide in June 2013 with 98 million of these being in SSA, with East Africa accounting for the highest share (34%) globally. By end of 2013, at least nine countries - Cameroon, the Democratic Republic of Congo, Gabon, Kenya, Madagascar, Tanzania, Uganda, Zambia and Zimbabwe had more registered mobile money accounts than bank accounts, compared to just four in 2012 . This has made financial services accessible to more people than the traditional banking industry ever had. In addition, many African countries also experienced robust mobile penetration during 2003 and 2013 period.

Over the last decade, Africa has witnessed high mobile telephony penetration and high uptake of mobile financial services in a number of countries. Mobile telephony has reduced geographical constraints transaction costs as well as assisting commercial banks to have a costless expansion strategy. A number of factors such as mobile phone penetration, financial and conventional infrastructure development, population density, regulation, and the appetite of private players to pursue the opportunity tend to drive variation in mobile financial services. Currently,

The high numbers of the population that have no access to formal financial services on the continent has fuelled high demand for mobile telephony and mobile financial services. In 2012, SSA had the lowest deposit institution penetration in the world (16.6%) compared to 63.5% in developing countries. But this varies considerably, ranging from 42% in Southern Africa to 7% in Central Africa and 12% in the East Africa Community (EAC) region

In most African countries, mobile phone banking is taking services to remote areas where conventional banks have been physically absent or too expensive. Subscribers can now open accounts, check their balances, pay their bills, transfer money, and buy basic everyday items. Mobile-banking is 19% and 54% cheaper compared with traditional banks and informal options respectively. It is also technologically the safest, quickest and cheapest method of transferring money, for conducting both personal and business transactions.

According to MobileMoney Expo 2014, there are active 113 mobile money deployments around Africa being managed by MNOs, financial institutions, microfinance enterprises and independent organizations. More than 25 new deployments are expected to go live by 2015. Mobile financial services offer more opportunities for partnerships between banks, non-bank financial institutions. In many African countries, banks and MNOs are also competing to tap the market of the unbanked population. This is leading to the expansion of financial services to mobile subscribers by providing mobile financial services to the unbanked. Thus a necessary condition for M-banking to expand is for regulators, especially central banks, to put in place supportive regulatory regimes.

MNOs are extending the reach of the formal financial sector, providing low-cost products and new entry points for the unbanked through mobile phones and agents' networks of cash-in and cash-out (CICO) agents. Currently, financial services evolving around mobile money include: (a) M-transfers (also referred to as Person-to-Person-P2P; (b) M-payments; and (c) M-financial services such as insurance, micro-finance, etc. all done via mobile phones. For AML/CFT purposes, it is important that these financial products and services are provided through financial institutions subject to adequate regulation in line with the Financial Action Task Force (FATF)

Depth of financial inclusion and DFS

The depth of financial inclusion across Africa various quite markedly. Various constraints have been identified for this variegated situation. Table 1 below shows the state of financial inclusion for a selected number of countries.

Table 1: Financial inclusion in selected countries in Africa

	Benin	Cameroon	Kenya	Mozambique	Nigeria	Senegal	Uganda	Zambia
Population	10.3	22.3	44.3	25.3	173.6	14.1%	37.6	14.5
HDI(out of 187)	165	152	147	178	152	163	164	141
GDP per capita(PPP US$)	1791	2711	2265	1045	5601	2269	1410	3181
Poverty rate(<$1.25 a day)	19%	28%	43%	61%	27%	11%	12%	42%
Literacy Rate	29%	71%	72%	51%	51%	50%	73%	61%
Financial Inclusion Rate	20%	47%	67%	13%	60%	20%	28%	23%

Sources: United Nations Development Programme, United Nations Educational, Scientific and Cultural Organization, World Bank (latest year available), European Investment Bank (2014)

In the selected group of countries, Kenya shows the highest level of financial inclusion at 67% rate and followed by Nigeria at 60%. Cameroon is at 47% inclusion rate, while the rest of the countries in the sample are all below 30% inclusion rate. The lowest rate is recorded in Mozambique ate 13% inclusion rate.

Looking closely at Nigeria, the most populous country and largest economy in SSA, Nigeria has the highest level of banked adults within the study, at 60 percent financial inclusion. The regulator does not allow for MNOs to offer their services directly, which may be hindering the growth of the market. The DFS market is dominated by Ecobank on the side of banks. First Bank and United Bank for Africa also offer DFS, though both have performed poorly. On the MNO side, Airtel, Etisalat, Globacom and MTN have all partnered with banks in non-exclusive agreements to offer DFS.

Table 2 below shows more detail for each selected African country, juxtaposed against Latin America and the Caribbean regions, and South Asia.

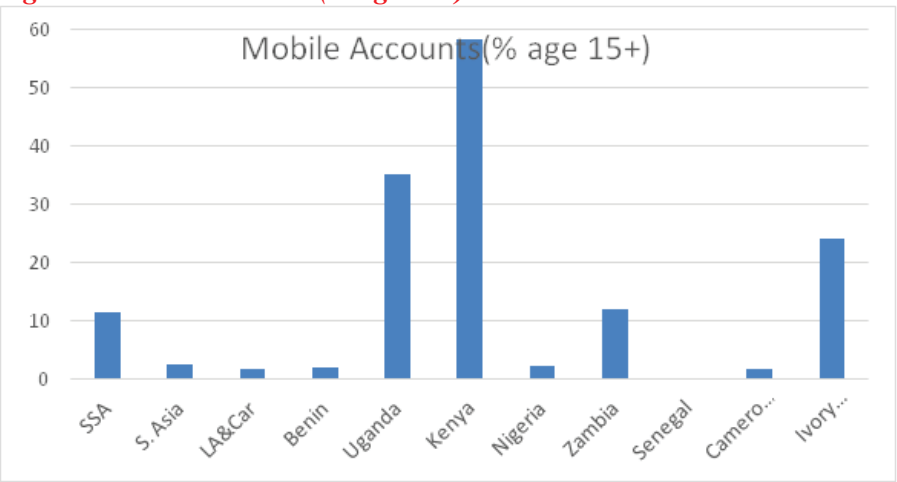
Table 2: Financial inclusion in Sub-Saharan Africa, South Asia, Latin America & Caribbean

	SSA	S. Asia	LA&Car	Benin	Uganda	Kenya	Nigeria	Zambia	Cameroon	Ivory Coast
Account(% age 15+)										
All Accounts	34.2	46.4	51.4	16.6	44.4	74.7	44.4	35.6	12.2	34.3
Women	29.9	37.4	48.6	13.6	36.6	71.1	34	33.2	10.2	29.2
Adults belonging to the poorest 40%	24.6	38.1	41.2	11	27.2	63.4	34.4	20.9	2.7	25.1
Young Adults(% ages 15-24)	25.9	36.7	37.4	8.4	35	66.4	35.7	28.8	5.3	24.1
Adults living in Rural Areas	29.2	43.5	46	12.6	45.7	73	39.4	34.8	11.1	34
Financial Institution Account (% age 15+)										
All adults	28.9	45.5	51.1	16	27.8	55.2	44.2	31.3	11.4	15.1
All adults 2011	23.9	32.3	39.3	10.5	20.5	42.3	29.7	21.4	14.8	..
Mobile Account(% age 15+)										
All adults	11.5	2.6	1.7	2	35.1	58.4	2.3	12.1	1.8	24.3
Access to Financial Institution Account(% age 15+)										
Has debit card	17.9	18	40.4	5	17.8	34.7	35.6	18.7	6.1	5.5
Has debit card, 2011	15	7.2	28.9	0.7	10.3	29.9	18.6	15.7	2.1	..
ATM is the main mode of withdrawal(% with an account)	53.8	31.1	71.1	39.1	60.3	52.7	70.5	68.5	27.1	8
ATM is the main mode of withdrawal(% with an account), 2011	51.7	16.9	57	0.4	41.7	69.2	40.8	74.4	5.8	..
Use of Account in the Past Year(% age 15+)										
Used an account to receive wages	7.3	3.5	18	3.2	6.4	18	8.8	7.6	3.7	2.9
Used an account to receive government transfers	3.8	3.1	9	0.9	1	6.4	3	1.5	0.4	1.2
Used a financial institution account to pay bills	2.8	2.7	6.3	0.5	2.6	5.8	5.2	1.9	0.2	1.3
Other Digital Payments in the Past Year(% age 15+)										
Used a debit card to make paymenys	8.7	8.5	27.7	1.2	6.6	11.2	14.1	7.3	1.5	0.7
Used a credit card to make payments	1.9	2.6	18	0.3	0.9	2.7	1.9	1.1	0.3	0.6
Used the internet to pay bills or make payments	2.4	1.2	6.9	2.5	1.7	4.7	3.3	2.5	0.7	1.7
Domestic Remittances in the Past Year(% age 15+)										
Sent remittances	28.7	10.7	9.5	18.7	46.9	53	39.3	29	28.5	39.1
Sent remittances via a financial institution(% senders)	31	20.1	..	13	11.7	16.2	53.2	27	4.3	6.6
Sent remittances via a mobile phone(% senders)	30.8	7.7	..	4.8	69.4	92	4.6	22.6	2.3	41.7
Sent remittances via a mobile money transfer operator(% senders)	21	13.7	..	15.8	3.6	8.9	8.9	51.7	62.1	31.5
Received remittances	37.2	12.2	11.3	24.2	56.5	61	45.3	35.8	38.9	36.4
Received remittances via a financial institution(% senders)	26.6	15.8	34.2	10.8	12.7	14.2	51.7	26.7	7	4.7
Received remittances via a mobile phone(% senders)	27.6	4.7	4.3	4.5	66	88.8	5.8	20.2	1.6	50
Received remittances via a mobile money transfer operator(% senders)	22.1	9.8	28.4	10.4	2.2	9.9	10.1	53.2	57.1	24.6
Savings in the Past Year(% age 15+)										
Saved at a financial institution	15.9	12.7	13.5	7.1	16.8	30.2	27.1	16.8	7.7	8.9
Saved at a financial institution, 2011	14.3	11.1	9.6	7	16.3	23.3	23.6	11.8	9.9	..
Saved using a savings club or person outside the family	23.9	8.8	7.9	36.8	36.7	39.9	23	24.3	34.6	22.9
Saved any money	59.6	36.2	40.6	61.1	75.2	76.1	69	70.1	64	63.2
Saved for old age	9.8	9.1	10.6	5.5	9.5	17.9	16.3	3.8	7.2	11.8
Saved for a farm or business	22.7	7.3	10.6	16.5	34.3	36.2	31.7	30.7	16.7	22.6
Saved for education or school fees	22.9	14.6	17.2	17.8	41.8	39.3	32.5	32.3	25.5	19
Credit in the Past year (% age 15+)										
Borrowed from a financial institution	6.3	6.4	11.3	7.6	15.7	14.9	5.3	4.8	1.9	2.3
Borrowed from a financial institution, 2011	4.8	8.7	7.9	4.2	8.9	9.7	2.1	6.1	4.5	..
Borrowed from family or friends	41.9	31.4	13.5	24.2	69.4	60.5	37.5	53.3	42.2	35.5
Borrowed from a private informal lender	4.7	10.9	4.7	2.7	6.3	7.3	1.7	6.3	1.6	0.8
Borrowed any money	54.5	46.7	32.7	39.6	79	79.2	44.8	68	56.6	48.4
Borrowed for a farm or business	12.8	8.6	6.1	12.7	22.3	24.3	12.7	20.8	11	9.6
Borrowed for education or school fees	12.3	8.9	8.3	7.3	39.1	33.5	7.1	20.8	12.5	7.4
Outstanding mortgage at a financial institution	5.2	3.8	9.6	5.5	9.8	12.1	6.3	4.6	2.7	2.9
Population, age 15% (millions)	553.1	1168.6	428.2	5.9	19.4	25.6	96.6	7.8	12.7	11.9
GNI per capita($)	1686	1483	9542	790	600	1160	2710	1810	1290	1450

Source: Global Financial Inclusion, World Bank, 2015

Kenya's high rate of financial inclusion is supported by having the highest percentage of adults over 15 years old, owning a mobile-banking account---at nearly 60%, as shown in figure 2 below. Figure 2 is drawn from table 2.

Figure 2: Mobile accounts(% age 15+)

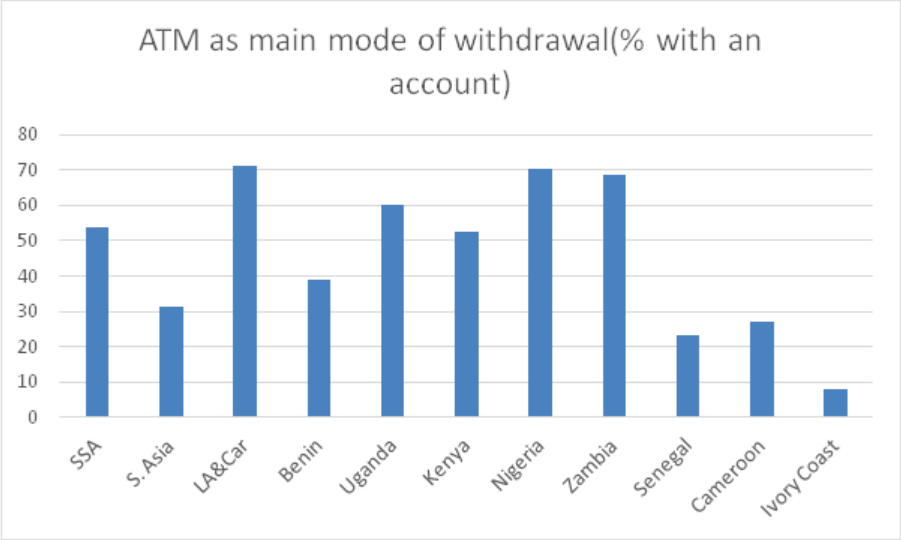


Uganda is second in of mobile accounts ownership at about 35%, Ivory Coast at about 25%. These levels of mobile accounts ownership are above the average for Sub-Saharan Africa at about 11%, and above South Asia(2.5%) and Latin America and Caribbean(1.7%).

When M-PESA was launched in Kenya in 2007 by Safaricom (a subsidiary of the British-owned Vodafone), the regulatory environment played a key role. The regulator offered Safaricom a 'no-objection' letter that allowed the company to innovate, to pilot test its service without the confines of strict regulation. The Central Bank of Kenya was flexible in its regulatory approach. Prior to M-PESA, there were limited means of transacting and conducting payments. Previous physical methods were unreliable, and using commercial banks was expensive and out of reach for the low-income market segment, and especially those in rural areas. It seems the political violence that struck Kenya in 2008, may have boosted the use of the M-PESA service. The violence led to the disruption of normal transportation, travel and access, and the shut-down of formal financial services, such as ATMs. The only way customers could send money was through M-PESA. To date, M-PESA has over 30 million mobile money subscribers and over 80,000 agents across Kenya, making it the most successful DFS environment globally.

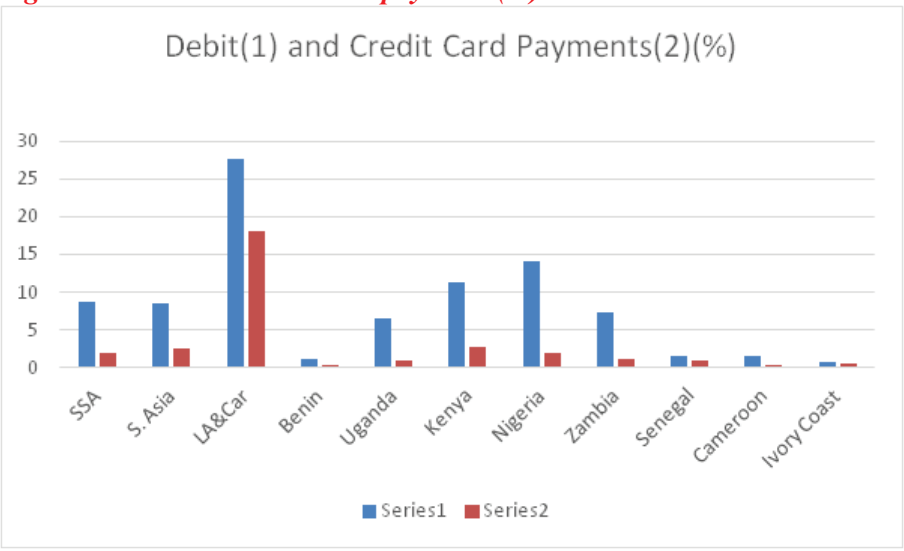
Figure 3, drawn from table 2, shows that on the use of the ATM as a means for withdrawing funds, Nigeria and Zambia at about 70% usage are above Kenya at about 51%. Clearly, ATM are still more dominant in Nigeria and Zambia than in Kenya where mobile telephony banking is more dominant. Ivory Coast exhibits a dominance in mobile accounts relative to ATM usage, as shown in figures 2 and 3.

Figure 3: ATM as main mode of withdrawal (% with an account)



Regarding the use of debit and credit card for payments, this is shown in figure 4 below. Here we can see that Africa lags Latin America and Caribbean region in the use of debit and credit cards. The highest usage of debit cards in Africa among the selected countries is in Nigeria at about 14% and Kenya at about 11%.

Figure 4: Debit and credit card payments(%)



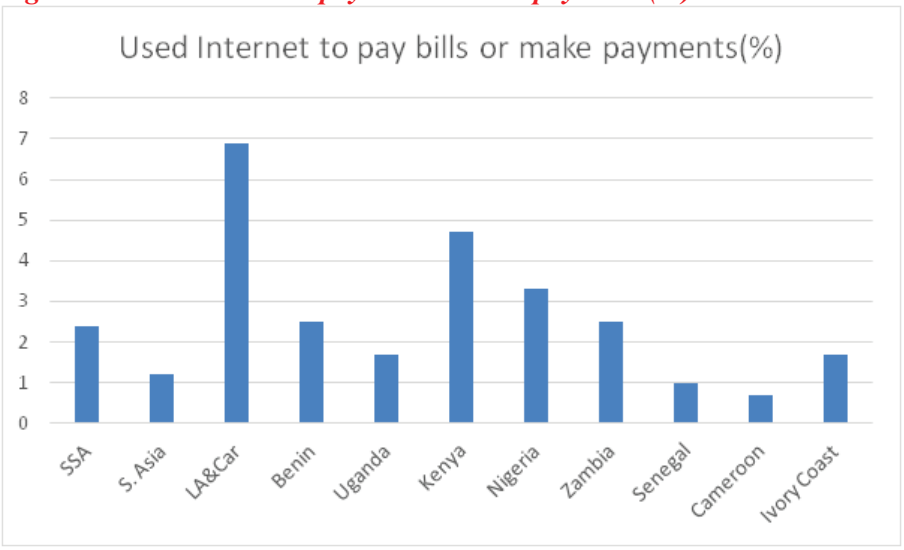
In a country such as Benin, DFS market is considered nascent with just 400,000 registered DFS users, representing 7 percent of the adult population. The financial inclusion rate is

one of lowest of the countries studied, at just 20 percent. There are large challenges with infrastructure, including poor quality of the telecommunications networks, frequent electricity blackouts, poor roads and few structured rural distribution networks. The post office is active in financial services but suffers from poor liquidity, resulting in low usage and an unviable channel for DFS. Banks and MNOs, as well as third parties, are able to offer DFS through BCEAO licensing; however, MNOs have preferred to partner with banks to offer services for ease and speed of regulatory approvals. The MNO MTN has the largest market share for mobile airtime and mobile money services, with approximately 34 percent of the market.

On the use of the internet to make payments, including the payment of bills, the selected Africa countries lag Latin America at about 7% of all payments. Kenya is highest in the group at about 5% followed by Nigeria at just above 3%. Senegal at 1% is on the low side and at similar levels with South Asia. Cameroon is the lowest within the group at below 1% of all payments being make over the internet.

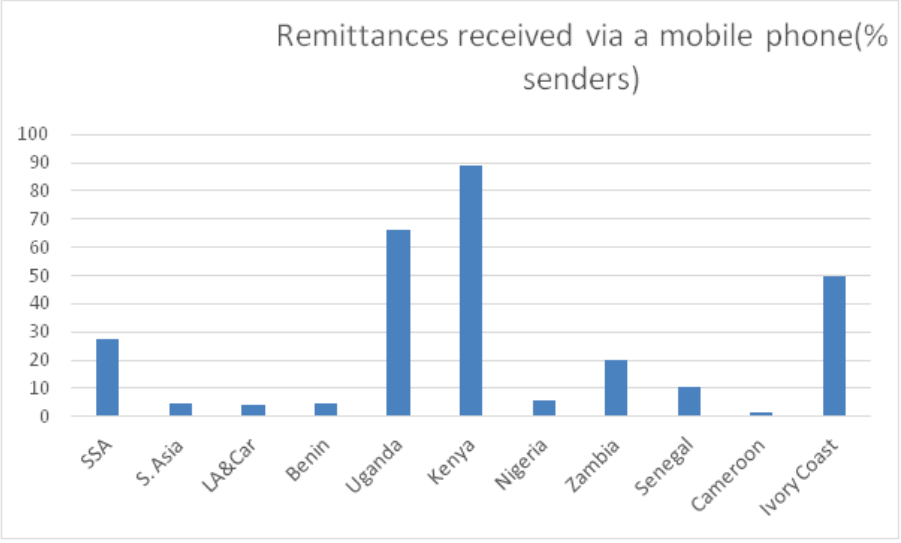
In Cameroon, for example, only banks are able to directly offer DFS, without any allowance for MNOs. There are 2.7 million registered DFS users, representing 22 percent of the adult population, Cameroon. The financial inclusion rate is somewhat high at 47 percent; however, 80 percent of banks' loan portfolio is comprised of large companies rather than retail customers. These figures reveal that there is a lack of willingness on the part of banks to pursue a mass market strategy either through DFS or traditional banking services. MNOs have partnered with banks to offer DFS in the country. MTN, the largest MNO with seven million SIM subscribers, has partnered with Afriland First Bank. Orange, the second largest operator with six million subscribers, has partnered with BICEC (Banque Internationale du Cameroun pour l'Epargne et le Crédit) to offer its Orange Money service. Société Générale is also providing services that are available to subscribers of both MTN and Orange—creating a unique option for interoperability in a duopoly mobile market.

Figure 5: Used internet to pay bills or make payments(%)



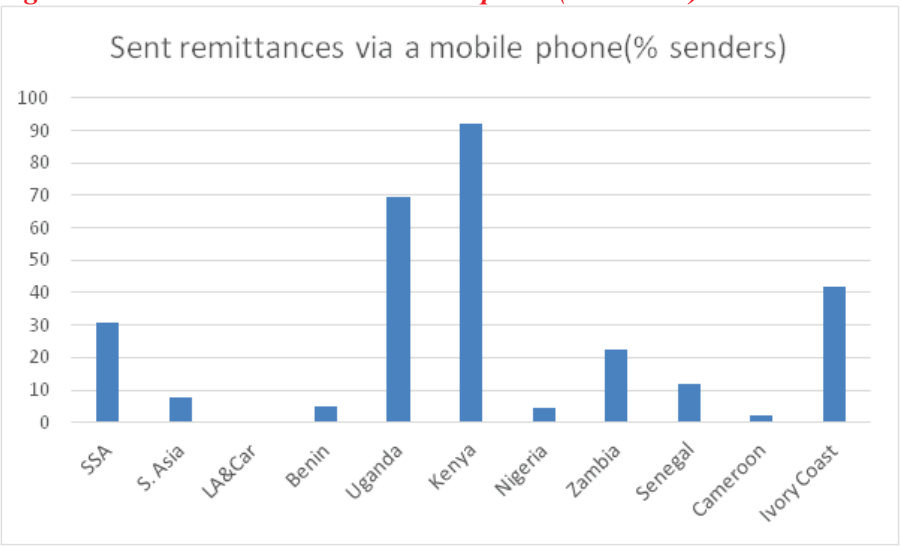
Looking closely at Senegal, the country has benefitted from a variety of actors moving into the market and using it as its first foray into the region and DFS market. The single switch at a regional level has facilitated activity. The regulator allows for all types of providers to offer DFS, including banks, MNOs and third parties. There are 1.5 million Senegalese registered DFS users, representing 20 percent of the adult population. The total banked population is also approximately 20 percent. The three main actors in the DFS market are Orange, Tigo and Société Générale, a bank that offers a service known as Yoban'tel. Senegal is also home to various third-party providers, including the up-and-coming Joni Joni, which focuses on domestic remittances through mobile phones. Impeding the expansion of the market are the low levels of structured rural distribution systems that could support the build out and sustainability of rural agent networks, and low literacy levels.

Figure 6: Remittances received via a mobile phone(% senders)



From figure 6, Kenyans receive nearly 90% of their remittances through the mobile phone, followed by Uganda at nearly 70%, and Ivory Coast at 50%. This again is well above the average for SSA of about 30%, and way above South Asia and Latin America at about 5%. The pattern is similar for the % of those receiving remittances by mobile phone, as shown in figure 7.

Figure 7: Sent remittances via a mobile phone(% senders)



Looking at Zambia more closely, it is dominated by foreign banks, mostly South African. However, only one national bank—Zambia National Commercial Bank (known as Zanaco)—is engaged in mass-market DFS. There are three MNOs: two foreign (Airtel and MTN), which offer DFS, and one national (Zamtel), which does not engage in DFS. Mobile payments came early with Celpay, a now-defunct payment service provider, in 2002. Zoona, a third-party service provider opened in 2009, and is now considered a great success story. There are 2.8 million registered DFS users, but only 2.4 percent of the adult population are active users. Aside from Zoona, all DFS providers face challenges with high inactivity rates. Regulations are supportive of innovation with prudential customer protection, with all types of providers able to offer services to some extent.

Taking a closer look at Uganda, we see that it has 14.2 million registered DFS users, representing 77 percent of adults; however, active user rates are only 28.7 percent of the adult population. The formal financial sector serves about 20 percent of the population. Regulations allow for MNOs to offer DFS, including wallets and agents; however, banks are only able to offer mobile applications and are prohibited from having agent networks. Banks have found ways to engage, though, through partnerships and interoperability with MNOs. The DFS market is experiencing challenges in growth due to the lack of a national ID and poor infrastructure (including roads and electricity), particularly in the north of the country.

Regulatory issues

Barriers to DFS growth

A recent study shows that 50% of adults worldwide remain unbanked and at least 35% of them commonly reported barriers to financial inclusion as being: high cost,

physical distance, and lack of proper documentation, which limit access to financial services in Africa.

These barriers stem particularly from inadequate supportive regulatory environment, deficient infrastructure, physical-geographical isolation or inaccessibility, and financial illiteracy. All these culminate into an exceedingly high cost of providing banking services and other financial services. Most of these barriers can be addressed by policy makers through financial sector reforms that would provide enabling regulations to promote financial inclusion. As noted above, this limited access to formal financial services has at the same time created a unique niche for MNOs to provide mobile money services and other technological innovations to develop, enabling a larger proportion of the population to access financial services.

The slow pace at which reforms are being implemented in some African countries makes it difficult for private operators to engage in the financial sector without a conducive regulatory framework. This, as well as limited financial and non-financial capacity of some countries to conduct financial inclusion surveys that would assist in identifying gaps and needs, offer financial literacy programs and supervise abusive behaviours of financial institutions, have become part of the major barriers to achieve better financial inclusion in Africa. Deliberate and significant efforts must therefore be deployed to address existing barriers, mainly inadequate regulatory frameworks, deficient infrastructure, limited inter-operability, and lack of financial literacy for Africa to fully reap off the benefits of these innovative platforms and solutions.

For mobile money to succeed regulators need to create an open and level playing field that allows non-bank mobile money providers, including MNOs into the market. Thus mobile money has the capacity to significantly expand financial inclusion under supportive regulatory environment that will result in lower transaction costs, improved access to underserved areas, and higher levels of customer convenience. For instance in Kenya, a simplified and converged licensing regime introduced in 2008 has lowered the barriers to market entry and increased competition by allowing operators to offer any kind of service in a technology- and service-neutral regulatory framework.

Some African countries do not have effective regulators and laws that would deepen financial reforms including those governing mobile financial services. A number of central banks such as NCB continue to maintain that any form of banking must be undertaken by licensed deposit-taking institutions, which excludes MNOs. Unsupportive or lack of effective regulatory environment may lead to friction between MNOs, financial institutions and central banks with regards to mobile financial services. This will negatively impact on MNOs service delivery to the unbanked population.

In countries where regulators do not allow mobile money businesses to set up effective distribution networks or to register, identify, and activate clients, business is constricted. It also creates major disincentives to investments and delays the generation of positive cash flow, making it too burdensome for MNOs to address operational challenges.

The regulatory framework

The critical issues on regulation of Digital Financial Services are on functional approach to financial regulation, competition environment and policy, and know-your-customer (KYC) rules. It should also be acknowledged that innovation does present risks which call for appropriate regulation capabilities.

Functional regulation and regulator's objective function

Traditionally, a central bank's objective function is price stability, strong growth and payment system stability. This objective is captured by a loss function which is quadratic capturing the deviation of the actual inflation and actual GDP from their socially desirable targets. However, under a functional approach to regulation the central bank has to maximise financial inclusion as well as focus on price stability, growth and payment system stability. The traditional loss function at any time t, is given by

$$L_t = \frac{1}{2}\left[\left(\pi_t - \pi^*\right)^2 + a\left(y_t - y^*\right)^2\right], \tag{1}$$

where πt is the actual inflation rate at time t and π^* is the socially desirable and targeted inflation rate, and yt is the actual GDP at time t and y* is the social desirable or targeted GDP, and $a \geq 0$ is the relative weight placed on output stabilization against inflation stabilization.

If we add a financial inclusion rate against its target, the los function becomes

$$L_t = \frac{1}{2}\left[\left(\pi_t - \pi^*\right)^2 + a\left(y_t - y^*\right)^2 + b\left(f_t - f^*\right)^2\right], \tag{2}$$

where, ft is actual level of financial inclusion and f is the desired level of financial inclusion.

Svensson (1997) posits that society minimizes the expected value of some discounted inter-temporal loss function, L, into the future. That is,

$$E\left(\sum_{t=1}^{\infty} \beta^{t-1} L_t\right), \tag{3}$$

where $0<\beta<1$ is the discount factor and E is the expectations operator, and Lt is the loss function. When the central bank supports financial inclusion it believes actual realized inflation and output in the future will not deviate too much from the target, but financial inclusion will increase significantly to approach its target. For a game-theoretic interaction between the central bank and the banking sector, see Hausken and Ncube(2013).

We could also add to the loss function an element that captures contribution of institutions to systemic risk. This is not easy to do. However, the Credit-Defaults Swaps spreads(CDS) for each bank give some information on the credit risk each bank is exposed to, and could contribute to the entire banking system. Another approach would be to make use of the contribution of institutions to Expected Shortfall (ES), due it undercapitalization when the entire banking system is undercapitalized. Yet another

approach is to use the CorrValue-at-Risk Measure (ΔCorrVaR), capturing the maximum loss within a 1% or 5% range. Inserting the quadratic difference between the actual credit default spread and target default spread in the Loss Function of the regulator, yields equation 4 given by,

$$L_t = \frac{1}{2}\left[\left(\pi_t - \pi^*\right)^2 + a\left(y_t - y^*\right)^2 + b\left(f_t - f^*\right)^2 + c\left(s_t - s^*\right)^2\right], \quad (4)$$

where s is the measure of systemic risk(CDS spread) and s* is the target level of systemic risk(target CDS spread).

The target CDS spread, s*, could be set at that of the sovereign, being the difference between the domestic US$ interest rate and US rate or AAA entity (risk premium, and the default risk is an increasing function of the risk premium). The individual CDS spread for each institution, measured simply by the difference between its interbank rate and US riskless rate, are then summed up by some weighting approach, to yield a weighted average CDS spread, and this is then compared to the target CDS spread.

Given the loss function in equation (4), the reaction function of regulator and monetary policy is to set interest rates, it* such that,

$$i_t^* = \alpha + \beta\pi_{t-1} + \theta y_{t-1} + \kappa f_{t-1} + \lambda s_{t-1} + \varepsilon_t \quad (5)$$

where α is the real interest rate, π is inflation, y is the output-gap, s, is the measure of systemic-risk gap (financial stability), and ε is an error term. Equation (5) can be estimated using appropriate econometric techniques.

In pursuing the regulatory function, the regulator should also adopt a risk-based approach in supporting DFS and financial inclusion. This type of regulation is based on the regulatory impediments on an activity being based on the risk that the activity poses for the individual participant and stability of the overall financial system. Equally, the regulator must balance between ex-ante regulation, which defines the rules of the game a priori, and ex-post intervention in response to the dynamics and evolution of the financial markets.

Competition environment

Creating an environment of fair competition with anti-monopoly policy is key to supporting financial inclusion. Competition engenders efficiency and competitive pricing in the provision of financial services. Competition for customers forces market players to go out of their way to harness customers that are previously excluded from the formal financial system. The existence so kind of Competition Commission and Anti-Monopoly rules, is at the core of creating a competitive environment. Opening up the environment for easy entry should be balanced with an appropriate level of regulation that keeps the financial system stable and minimises systemic risk.

One challenge for keeping a competitive environment is in services-metamorphosis, where certain financial institutions have captured a large client base which now enables them to offer telecommunication services through a Virtual Network. A good example of this is Equity Bank in Kenya which now offers its clients an additional SIM card for communication within the virtual network. The institution would now require a telecommunications licence due to migration of its services into telecoms. Keeping the environment competitive also means exercising oversight on such metamorphosis in the provision of services, making sure that both the telecoms regulator and the central bank are involved in the regulation of the institution. This new model for Equity Bank may be the future in the evolution of the business model.

Competition environment and policy should be clear on issues of market entry; market exit; potential abuses of market power; interoperability of systems and services; and contestability in the market.

- **Market Entry:** Regulators should not impose impediments to market entry in the financial services sector as long as the regulatory requirements are being met. There should be clear ex-ante rules on types of financial products, consumer protection. Restrictions on bank branching and use of agents, and use of ATMs and POS can hurt the financial inclusion agenda and should be minimised.

- **Market exit:** Rules for dealing with the exit of banks, mainly due to weakness, should be clear ex-ante and should be consistent with international standards. Such rules may relate to closer and curatorship of weak banks, and withdrawal of licences

- **Abuse of market power:** First-mover advantage and uncompetitive practices may produce monopolies and oligopolies in the financial sector, as well as in the telecommunication sectors. The impact of this is potential abuse of market power through uncompetitive pricing of products and services, and inefficient services, due to absence of a broader competition. Generally, anti-monopoly rules as enforced by a Competition Commission, should serve as a check against the development of monopolies and oligopoly institutions.

The need to check against monopoly and oligopoly market power is also a check against catastrophic failure of the monopoly institution. If such a dominant market plays were to collapse that could cause ripples through the financial system and hurt the financial inclusion agenda.

- **Interoperability and Interconnectivity in DFS:** Interoperability is necessary for ensuring competition. Inoperability means the ability to make calls and communicate to users of other telecommunication networks. Interoperability in DFS is also necessary to ensure that users of one financial services digital network and transact with others of other digital financial services. For example in the use of ATMs, interoperability is also required so as to enable use of ATMs by customers across various banking institutions. Naturally, this also points the spotlight on transaction costs when customers use ATMs or services from other providers. ATMs are expensive to role out and the original investors need to recoup their investment and so have to charge for their use. The transactions

ought to be clearly spelled out. In general interoperability, ensures that no single provider uses undue market power to monopolise transactions and transaction costs may go down generally. This is beneficial to customers and the objective of financial inclusion.

The mobile money services ecosystem users would benefit from these services when they are offered across MNOs platforms i.e. when there is interoperability and interconnectivity among the MNOs. This would in turn enhance financial inclusion objectives. The benefits of interoperability in the ecosystem include: deepening the penetration of mobile money, lowering cost of transactions, broader customer choice, and increased competition and break down of dominant positions. Interoperability allows MNOs to engage with each other, with banks, financial institutions regulators, governments and ecosystem partners, to identify and implement solutions that will successfully allow more mobile financial services to be delivered to a broader range of people across regions, while maintaining high service quality.

Efforts are being undertaken through GSMA's Mobile Money Interoperability (MMI) program to promote interoperability and interconnectivity across Africa and the Middle East regions. The of this program is to help MNOs successfully launch and scale interoperable mobile money services through identifying and sharing best practices, guidelines and processes, creating performance benchmarks, and providing regulatory support .

In April 2014, the GSMA announced that nine MNOs operating in these regions - Bharti Airtel, Etisalat Group, Millicom, MTN Group, Ooredoo Group, Orange, STC Group, Vodafone Group and Zain Group - are to work together to accelerate the implementation of interoperable mobile money services across the two regions. These MNOs have 582 million mobile connections across 48 countries in Africa and the Middle East.
Regulators, while pursuing interoperability and interconnectivity policies and regulations, need to take into account factors such as: the maturity of mobile money deployment, impact on market competition and dialogue with issuers. This will ensure that such policies and regulations benefits both customers and providers.

In July 2014, Kenya's MNO, Safaricom, opened up its M-PESA agency network to its competitor Airtel, relaxing the exclusivity that was a requirement for its agents. Safaricom's agents, numbering over 85,000, can now sell products offered by Safaricom's competitors. However, this is not the same as implementing interoperability as its rival as Airtel users cannot send cash from their mobile wallet to the mobile wallet of an M-PESA users, which requires a link between the two MNOs' mobile money systems.

In Nigeria, for instance, mFino, the leading mobile financial services platform company, is to unlock the potential of mobile money through interoperability across various mobile money and bank deployments. This will involve several mobile money operators, financial institutions and mobile operators.

In June, 2014, Tigo, with over 6.2 million customers in Tanzania overall and 3.4 million users of its Tigo Pesa, joined with Airtel and Zantel to announce the first Africa's interoperability arrangement. This will allow over 16 million to send money by mobile to each other in Tanzania, regardless of network. Vodafone is also supporting this

interoperability and is expected to have a similar agreement with Vodacom in Tanzania. This makes the country the only one in the region that is promoting interconnected mobile money services with interbank networks and MNOs. In Uganda, users of mobile money services are forced to affiliate with multiple mobile providers as the country has no interoperability.

- **Equitable Access to Infrastructure Services:** This refers to the right of providers to equitable access on identical terms to the underlying hard and soft infrastructure, networks and other inputs that underpin the provision of their own services. For MNOs, such infrastructure includes, telecommunications lines, fibre-optic backbone network, power grid, and, water supply. For providers of digital financial services, the required hard and soft infrastructure includes, telecommunications system, network services for payment and settlement, credit bureaus, inter alia.

Equitable regulation of services

- **Separation of services:** The regulatory environment should define and separate financial services in order for their regulation to be effective. There should be a clear delineation between payments-only services, and store-of-value services. What constitutes credit or insurance, should be well defined. This differentiation can be based on length of transacting time and value of transactions. Services for store of value refers to any balance whose nominal value can be withdrawn at par immediately or be used to honour payment for goods or services. Examples include, deposits and e-wallet services. This principle of "separation" of services makes for focussed regulation.

- **Equivalent-regulation of similar services:** This provision requires that all financial services that are functionally equivalent should be regulated equivalently, for the same level of risk of the provider. The risk profile of the provider should be understood, and classified so as to enable the application of the principle of equitable regulation of similar services. Equivalent-regulation is only possible if there is clear definition and separation of various services. Regulation should then focus on regulating services. This also reduces opportunities for regulatory arbitrage.

- **Payments services regulation:** All payments services offered by banking institutions, MNOs and DFS providers should be regulated under a payments law, which can be part of the banking law, or separate. This ensures equitable access to institutional infrastructure and legal provisions. Indeed the rules could still differentiate transactions by size and volume. In DFS the risks of settlement completion are low but timing may vary.

- **Regulating Store of Value:** Similar services, whether provided by a financial institution, MNOs, or DFS provides, that offer the same store of value, should subject the same type of regulatory oversight. Similar levels of protection, in the form of deposit insurance or other, should be offered to all the customers in a specific value category for the same store of value. Deposit insurance can be direct, as for banks, and indirect, as for MNOs and DFS providers. The same disclosure rules and KYC rules should apply.

- **Regulating Providers of credit services:** DFS providers are in a position to extend credit on the back of the deposits they hold. This can be performed on a person-to-person(P2P) or person-to-business(P2B) platforms. The legal framework for these activities could be covered by commercial law or specific laws, or even securities law. The extension of credit will entail the need to insure deposits. For example under M-Shwari, a DFS credit extension product in Kenya, this activity is insured as is the case in a normal banking sector credit extension services.

- **Regulating Consumer protection:** Consumer protection regulations should be applied to all providers of financial services, be they DFS providers, banks, or MNOs. Consumers, should be protected against things such as fraud, abuse, exploitative piecing, extortion, and discrimination. There should be full disclosure by providers about the type of product, its pricing elements such fees and any interest, and risks associate with it. The regulators have to regulate equivalent products equivalently. In some jurisdictions an Ombudsman is appointed in order to protect consumers, and sanctions can be imposed on providers who deviate.

Effective consumer protection also goes hand in hand with Financial Literacy drives by regulators to make sure that consumers improve their understanding of financial products.

- **Supervisory Coordination:** Given that DFS architecture involves various actors connected by a nexus of contracts, and services are separated, than regulators of various services have to coordinate with each other. Regulatory coordination minimizes regulatory arbitrage, and helps reduce systemic risk. For example, a Super Regulatory Committee(SRC) or "National College of Supervisors(NCS)", could be created bring together a Central Bank, Non-bank regulator, insurance regulator, pension fund regulator, and telecommunications regulator. This arrangement will enable information sharing across regulators in the ecosystem.

- **Exchange Control Regulation:** On cross-border transactions and transmission of remittances, these could be subject to exchange controls in some jurisdictions. To the extent that Foreign Exchange Bureaus exist, DFS operators, could be subject to similar rules as forex bureaus.

- **Anti-Financing of Terrorism, Anti-money laundering rules:** Cross-border remittances through DFS providers is subject to Anti-money Laundering and Anti-Financing of Terrorism rules. These international rules have to be adhered to. Of course these rules could also be an impediment to cross-border remittances. There is great potential for DFS platforms to lower the transaction costs for remittances which are currently over 10% for some countries.

Know-your-customer rules (KYC) and privacy of information protection

The Financial Action Task Force (FATF), has set a number of standards to promote effective implementation of legal, regulatory, and operational measures for combating money laundering (ML) and the financing of terrorism (TF), basically meaning a service provider has to know their customer. This is to ensure financial integrity. DFS providers need to improve their KYC standards and adherence levels, as any form of anonymity can be exploited for money-laundering or terrorism purposes.

However, strict KYC rules, which result in private information being collected by financial services providers, means the information is at risk of being misused. Indeed, the information access by third parties could violate Privacy-Protection entitlement of consumers. The information could even be used for commercial gain by third parties. There is therefore need to ensure privacy-protection of such personal consumer formation. There is therefore a balance to be struck between KYC rules enforcement and Privacy-Protection of personal information.

Identification (ID) issues

Most telecom regulators require MNOs to have all their clients to register the SIM cards, which ultimately serve as client identities. In 2015 MTN was fined a massive over $5 billion in Nigeria for not registering some of its users, and this wiped out some value for the company's share price. The issue is still unresolved. Clients are also required by MNOs, and as provided for by the central banks, to fill forms to register their mobile money accounts and in the process IDs are required. The information required include: full names, phone number, passport- size photograph, Valid ID cards, and physical address, which have to be verified by agents. The banks also require similar ID documents for registration of mobile banking clients. In addition the regulators demand for the physical presentation of the individual client before opening an account with the MNOs agent or the bank. The current Know Your Customer (KYC) requirements impose obligations on banks as well as MNOs to collect identification documents (IDs) of prospective clients and to have them verified by banks and MNOs.

Customer due diligence (CDD) & know your customer (KYC) rules

There is need to provide room for flexible controls to include the poor and unbanked persons if financial objectives are to be achieved. However, it still remains critical to ensure that services offered by financial institutions and MNOs and their agents are subject to proper controls, these controls should be flexible enough to include poor and unbanked customers.

In some countries, potential mobile money customers, who are mainly unbanked, may not have proper identification. However, identification of users is necessary to curtail AMF/CFT risks. The four countries in this paper require the registration of their clients through SIM card mobile money accounts registration as discussed above. This in away could serve this purpose and also meet financial inclusion objectives while preserving the integrity of the financial system. In Uganda, for instance, banks partnering with MNOs need to take proper measures for back-up and replication of data, KYC requirements, handling complaints, and liquidity management by agents.

Issues for further consideration

Going forward, some issues still require our further consideration. These issues include:

- Cross-Border remittances, and AT and AML riles impediments
- Macroeconomic implications of Cross-Border remittances, such as exchange controls, and capital controls
- KYC and privacy –protection of information

- Financial literacy drive and role of players in the DFS architecture and ecosystem
- Evolution of DFS model, from bank to telecoms, and telecoms to bank
- Deposit insurance and legal framework and Trust laws and use of escrow accounts in Civil Law jurisdictions
- DFS evolution into investment and portfolio management, and insurance markets.
- Analysis of the potential and impact of 'Bitcoin and 'block-chain' technologies in digital financial services

References and further reading

Alliance for Financial Inclusion. 2010. *Case Study: Enabling Mobile Money Transfer: The Central Bank of Kenya's Treatment of M-Pesa*. Bangkok (February).

Bank of Uganda. 2013. "Mobile Money Guidelines, 2013." Kampala. ucc.co.ug/files/downloads/Mobile-Money-Guidelines-2013.pdf.

BCBS (Basel Committee on Banking Supervision). 2010. *Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems.* Basel: Bank for International Settlements.

BCBS. 2013. *Basel III: The Liquidity Coverage Ratio and Liquidity Risk Monitoring Tools*. Basel: Bank for International Settlements.

Beechwood International. 2013. *Safer Corridors Rapid Assessment: Case Study: Somalia and UK Banking*. London.

Bourreau, Marc, and Tommaso Valletti. 2015. *Enabling Digital Financial Inclusion through Improvements in Competition and Interoperability: What Works and What Doesn't?* CGD Policy Paper 65. Washington: Center for Global Development (June).

CGAP (Consultative Group to Assist the Poor). 2015. *How M-Shwari Works: The Story So Far.* Washington.

CGD (Center for Global Development). 2015. *Unintended Consequences of Anti-Money Laundering Policies for Poor Countries.* Washington DC.

CGD (Centre for Global Development). 2015. Financial Regulations for Improving Financial Inclusion: A CGD Task Force Report, Washington DC.

Claessens, Stijn, Patrick Honohan, and Liliana Rojas-Suarez. 2009. *Policy Principles for Expanding Financial Access: Report of the CGD Task Force on Access to Financial Services.* Washington: Center for Global Development (October).

Committee on Payments and Market Infrastructures and World Bank. 2015. *Consultative Report: Payment Aspects of Financial Inclusion*. Bank for International Settlements and World Bank Group (September).

Cook, Tamara, and Claudia McKay. 2015. "Top 10 Things to Know About M-Shwari." Washington: Consultative Group to Assist the Poor (April).

Demirgüç-Kunt, Aslı, and Leora Klapper. 2013. "Measuring Financial Inclusion: Explaining Variation in Use of Financial Services across and within Countries." *Brookings Papers on Economic Activity* (Spring): 279-321.

Di Castri, Simone. 2013a. *Mobile Money: Enabling Regulatory Solutions*. London: GSMA (Groupe Speciale Mobile Association).

Di Castri, Simone. 2013b. *Tiered Risk-Based KYC: M-Shwari Successful Customer Due Diligence.* London: GSMA.

European Commission. 2006. *Evaluation of the E-Money Directive (2000/46/EC): Final Report.* Brussels.
FDIC (Federal Deposit Insurance Corporation). 2008. "Stored Value Cards and Other Nontraditional Access Mechanisms, New General Counsel's Opinion No. 8." Financial Institution Letter FIL-129-2008. Washington.
GPFI (Global Partnership for Financial Inclusion). 2011. "G20 Principles for Innovative Financial Inclusion." Kuala Lumpur: Alliance for Financial Inclusion.
GPFI. 2014. *2nd GPFI Conference on Standard-Setting Bodies and Financial Inclusion, Session 4: Deposit Insurance and Digital Transactional Platforms—A Frontier Issue.*
Government of the United Kingdom. 2015. "UK-Somalia Safer Corridor Initiative." London. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/471064/UK-Somalia_Safer_Corridor_Initiative.pdf.
GSMA (Groupe Speciale Mobile Association). 2013. *The Mandatory Registration of Prepaid SIM Card Users*. White paper. London.
GSMA. 2014. *Mobile Financial Services for the Unbanked.* London.

Hausken, K & M. Ncube(2013) Quantitative Easing and its impact in US, UK, Japan, and Europe, Elsevier Publishers, New York.
Helix Institute of Digital Finance. 2013. "Agent Network Accelerator Survey: Kenya Country Report 2013." Nairobi.
Khan, H. R. 2012. "Financial Inclusion and Payment Systems–Recent Trends, Current Challenges and Emerging Issues." Basel: Bank for International Settlements.
KPMG International. 2014. *Global Anti-Money Laundering Survey 2014*. Amsterdam.
Kumar, Kabir, and Michael Tarazi. 2012. "Interoperability in Branchless Banking and Mobile Money." Washington: Consultative Group to Assist the Poor.
Makin, Paul, Dick Clark, and Susie Lonie. 2015. "Executive Summary: Detailed Recommendations to Reduce and Manage Risk at the 'Last Mile' of the UK-Somalia Safer Corridor Pilot." Guildford, U.K., and Nairobi: Consult Hyperion and FSD Africa.
Ncube, M. and L.W. Senbet 1997. "Perspectives on Financial Regulation and Liberalization in Africa Under Incentive Problems and Asymmetric Information," Journal of African Economies, 6, pp.29-89.
Radcliffe, Dan, and Rodger Voorhies. 2012. *A Digital Pathway to Financial Inclusion*. Seattle: Bill & Melinda Gates Foundation (December). Available at SSRN: http://ssrn.com/abstract=2186926.
Reserve Bank of India. 2014. *Guidelines for Licensing of Payment Banks.* Mumbai.
Svensson. L. 1997. Inflation Forecast Targeting: Implementing and Monitoring Inflation Targets, European Economic Review, 41(6), 1111-1146.
World Bank. 2001. *Principles and Guidelines for Effective Insolvency and Creditor Rights Systems*. Washington (April)
World Bank. 2008. *Finance for All? Policies and Pitfalls in Expanding Access*. World Bank Policy Research Report. Washington (November).
World Bank. 2012a. *Good Practices for Financial Consumer Protection.* Washington (June)
World Bank. 2012b. *Developing a Comprehensive National Retail Payments Strategy.* Consultative Report. Washington (July)
World Bank. 2014. *Global Financial Development Report 2014: Financial Inclusion*. Washington.
World Bank. 2015. *The Little Data Book on Financial Inclusion*. Washington.

Three

Financial Inclusion and Development in Africa: Gaps, Challenges and Policy Recommendations

by Professor Isaac Otchere

Introduction

Financial inclusion has attracted increased attention in the development and policy circles in recent years. This policy initiative aims at drawing the "unbanked" population into the formal financial system, thus ensuring that the financially excluded has the opportunity to access financial services ranging from savings, payments, and transfers to credit and insurance. Its prominence in the development and policy circles is due in part to its poverty alleviating feature, which ultimately can contribute significantly to achieving social cohesion and sustainable economic growth.

Given the state of economic development in Africa and the important role of financial inclusion in development, several development agencies and international financial institutions have taken important steps to promote financial inclusion in Africa. Nevertheless, gaps in financial inclusion remain severe in several African countries. Studies have shown that financial inclusion gaps exist in the developing world in general where more than 2.7 billion people are still financially excluded and about 400 million SMEs do not have access to formal financial services (IFC, 2012). The situation is particularly acute in Africa where the continent lags behind other developing regions, with only 23% of adults holding an account at a formal financial institution, twice lower than the world's average estimated at 50% (Demirgüç-Kunt and Klapper, 2012). Though some progress has been achieved in the recent past on the continent, it is important to take stock of the current state of financial inclusion in Africa. The purpose of this study is to review the state of financial inclusion in Africa, what has been achieved, the challenges and constraint that hinder the realization of inclusive growth and policy prescriptions that can guide policy makers in their efforts to alleviate poverty and achieve sustainable growth in Africa. The paper begins with a brief overview of the state of financial inclusion in Africa, followed by a discussion of the relationship between economic development and financial inclusion and a review of two case studies. It then discusses the gaps and constraints and obstacles to financial inclusion. The paper concludes with some key policy recommendations that are aimed at achieving more inclusive financial systems in Africa.

Financial inclusion

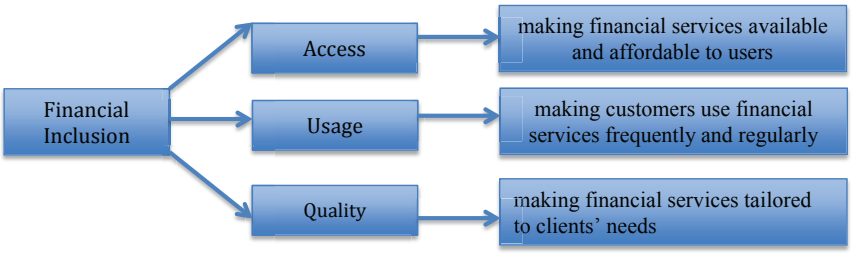
Financial inclusion can be described as the delivery of banking services at an affordable cost to the vast sections of disadvantaged and low income groups (Leeladhar, 2006). It is the process through which accessibility, availability and affordability of the formal financial system is ensured to all members of the economy. The overarching goal of financial inclusion as a policy initiative is to draw the "unbanked" population into the formal financial system so that they have the opportunity to access financial services ranging from savings, payments, and transfers to credit and insurance at affordable cost. Development finance and microfinance institutions have played an important role in this process.

Despite the considerable progress made by microfinance institutions, credit unions, and savings cooperatives over the last two decades, the majority of the world's poor remain unserved by formal financial intermediaries. According to the Consultative Group to Assist the Poor (CGAP), the absolute number of savings accounts worldwide is reported to exceed the global population, and yet half of the world's adult population—2.5 billion people—does not have access to savings accounts and other formal financial services (CGAP, 2009).

There is growing theoretical and empirical evidence that suggests that financial systems that serve low-income people promote pro-poor growth (Beck, Demirgüç-Kunt, and Maksimovic (2004)). Although other factors (including income and interest elasticity of savings) affect the savings rate of consumers in developing countries, lack of access to finance adversely affects growth and poverty alleviation efforts as it makes it more difficult for the poor to accumulate savings and to build assets to protect against risks, as well as to invest in income-generating projects. With this increased attention to the poverty alleviation aspects of finance in recent decades, policy objectives are being constantly expanded to include more quality access to a wider range of financial services (Morduch (1999); Robinson (2001)). It is against this background that financial services to the unbanked have become a major area of interest for policymakers, development finance institutions, practitioners, and academics who increasingly emphasize financial inclusion as a policy objective. The notion of building inclusive financial systems recognizes not only the goal of incorporating as many poor and previously excluded people as possible into the formal financial system, but it also assigns to mainstream financial institutions the role of reaching out to the unbanked (UN Capital Development Fund (2006)). In fact, financial inclusion has become an important policy goal that complements traditional pillars of monetary and financial stability, as well as other regulatory objectives such as consumer protection.

Financial inclusion is a multidimensional concept that goes beyond access to finance to encompass usage and quality. The Alliance for Financial Inclusion (AFI) describes these financial inclusion concepts as making financial services available and affordable to users (access), making customers use financial services frequently and regularly (usage) and making financial services tailored to clients' needs (quality). As figure 1 illustrates, a comprehensive understanding of financial inclusion should consider the availability and accessibility of services, frequency of use, and suitability and quality of financial options for all income levels. Policies to encourage increased access for the previously unbanked must take into consideration all three aspects.

Figure 1: components of financial inclusion



The relationship between financial inclusion, poverty reduction and economic growth

Financial inclusion aims at drawing the "unbanked" population into the formal financial system so that they have the opportunity to access financial services at affordable cost. Thus financial inclusion can make a substantial positive difference in improving poor people's lives and consequently help reduce poverty and promote economic growth. Through affordable cost, financial inclusion enables the poor to participate in investment activities in both physical and human capital and hence increase the productivity of the poor community. Specifically, it can enable the poor to accumulate savings and/or borrow to invest in income-enhancing assets and start micro-enterprises, which ultimately generates employment, increases incomes and reduces poverty and foster social and political cohesion, all of which will contribute to achieving sustainable economic growth.

Greater financial inclusion can also enhance economic development by contributing in several ways to maintaining a sound and stable financial system (Khan, 2011; Thorat, 2010). First, financial inclusion can improve the efficiency of the intermediation process by expanding the number and value of transactions and economic agents involved. The increased diversification will be reflected in the composition of assets and liabilities of the financial sector, which in turn can reduce income volatility and improve liquidity. Recent evidence from Chilean banks suggests that systemic risk resulting from losses on small loans is low, relative to the less predictable and infrequent losses on large loans (Adasme et al., 2006).

Second, shallow financial markets tend to undermine the efficacy of monetary policy in Africa (Christensen, 2011). Financial exclusion often fosters informality which in turn encourages the use of informal financial services. These services, such as pyramid schemes, could cause instability in the system (Cull et al., 2012). Instability effects could also stem from the quality and limited capacity of the institutions that offer informal financial services. A notable example is the crisis experienced by the microfinance sector in Morocco a few years ago as a result of clients' over-indebtedness. The local microfinance institutions did not have the capacity to detect clients' cross-lending which led to high levels of non-performing loans and a crisis in the sector (Christensen, 2011). Financial inclusion increases the degree of formalization of the economy, which can improve the effectiveness of monetary policy transmission and fostering economic growth.

Third, increased financial inclusion strengthens the balance sheet of the household sector by allowing them to save, invest and grow. Moreover, reduced inequalities resulting from financial inclusion are likely to foster social and political stability which could further enhance financial stability and economic growth. The Arab spring experience is a case in point. In terms of stability of the financial system, the risk posed by inclusive policies that bring this category of clients into the financial system is negligible even during financial crisis. Research shows that institutional risk profiles at the bottom end of the financial market are characterized by large numbers of vulnerable clients who own limited balances and transact small volumes. As the evidence provided by Adasme et al. (2006) for Chilean banks suggests the systemic risk resulting from losses on small loans is low, relative to less predictable losses on large loans.

Prior research, including Jalilian and Kirkpatrick (2001), have examined the impact of financial inclusion on development.[1] The studies provide evidence of the linkage between financial development and economic development. In fact, countries that have experienced strong economic growth in recent years, such as Brazil, Costa Rica, and Chile, have the largest number of adults with formal accounts, while other countries with slower economic performance, like El Salvador and Nicaragua, are lagging behind in terms of financial inclusion of the poor (Hurtado et al, 2013). Haiti, arguably one of the poorest countries in the Latin American and Caribbean region, has one of the lowest numbers of adults holding an account in that region.

In summary, financial inclusion remains a top priority on reform agendas of developing countries because of its economy-wide consequences. From the financial sector standpoint, greater financial inclusion represents a broader client base and a more stable diversified source of funding which contributes to the stability of financial systems. More broadly, financial inclusion can contribute to macroeconomic stability, employment, and business creation.

The current state of financial inclusion in Africa: The transformative role of technology

There is no gainsaying that financial inclusion helps alleviate poverty. As a result, financial inclusion has become an explicit policy objective in many developing countries. Governments in the developing world have made concerted efforts to promote inclusive growth and reduce the level of poverty. Despite these efforts, about half of the world's population is still without access to savings accounts, insurance, and other financial services, and about 95 percent of the unbanked are in developing countries (Hannig and Jansen, 2010). Africa faces substantially larger challenges than most of the developing world due in part to a much higher incidence of poverty (Makanjee, 2009). Demirgüç-Kunt and Klapper (2012) show that less than a quarter of adults in Africa have an account with a formal financial institution, and many adults in Africa use informal methods to save, and they also borrow from friends, family, and informal private lenders.

Nonetheless, the last decade has witnessed profound structural changes in financial systems across Africa, characterized by financial deepening and rapid growth in intermediation. Quite a number of countries in Africa have achieved some progress in terms of financial inclusion. For example, the median number of depositors with commercial banks per 1,000 adults in the region increased from 113 in 2007 to 257 in

2011, corresponding to an annual increase of 31% (Demirgüç-Kunt and Klapper (2012). The increased access to finance has been facilitated by the development and rapid diffusion of information and communication technology that has dramatically reduced the cost of connecting users to formal financial institutions through the payment systems (Demirgüç-Kunt, Beck, and Honohan (2008); UN Capital Development Fund (2006)). Technological innovation has certainly played a role in facilitating access and use of financial services in Africa, the financial sector has introduced a wide array of actions to deepen financial inclusion.

Mobile money has helped broaden access to financial services, including savings and payment products. In fact, Africa has seen substantial progress in electronic payments, and the creation of new delivery channels including "mobile branches" or banking services through third-party agents are playing an important role in providing greater financial access in Africa. Mobile money transfer systems facilitate financial transactions via mobile phones and allow users to deposit and withdraw cash from an account that is accessible by mobile handset. Mobile money has achieved the broadest success in Africa where 14% of adults report having used mobile money in the past 12 months (Aker and Mbiti, 2010).

Financial inclusion goes beyond improved *access* to credit to encompass enhanced access to savings and risk mitigation products, a well-functioning financial infrastructure that allows individuals and companies to engage more actively in the economy, while protecting users' rights. As mentioned earlier, financial inclusion encompasses initiatives that make formal financial services *Available*, *Accessible and Affordable* to all segments of the population. This requires paying particular attention to specific portions of the population that have been historically excluded from the formal financial sector either because of their income level, gender, level of financial literacy or location. Technology has helped reduce this problem somewhat. Kenya is a model case for how technology can help improve these facets of financial inclusion initiatives. M-Pesa in Kenya is a famous and successful mobile transfer system. Allen et al. (2014) report that between 2007 and 2012, Safaricom, the Kenyan mobile payment wallet had registered 15 million users. The M-Pesa system has also brought about a substantial decline in the costs of sending transfers and a substantial increase in their volume (especially remittances), and has decreased the use of informal savings mechanisms (Mbiti and Weil, 2011; Jack and Suri, 2010).

The state of financial inclusion in Africa relative to other regions of the world is presented in Figure 1. Sub Saharan Africa (SSA) fares well among other developing countries in terms of financial inclusion initiatives and outcomes. In 2014, the region ranked second among other developing regions of the world only to East Asia and the Pacific. However, between 2011 and 2014, SSA recorded only 5.10% improvement in the financial inclusion index from 21.93 to 27.07. The Middle East and Central Asia are the only regions that recorded lower improvement in the financial inclusion score than SSA.

Despite the progress that has been made by African countries, the uptake and outcome of financial inclusion on the continent varies widely. Figure 2 shows that there is a significant heterogeneity among African countries. The low middle income countries (South Africa, Botswana and Mauritius) and Kenya, Uganda and Zambia have high financial inclusion outcomes. The North African countries including Egypt and Chad

score poorly on the financial inclusion ranking. Table 1 compares the financial inclusion measure for the countries/regions as a whole and the rural sector. SSA has the lowest percentage of the population aged 15+ that have accounts with financial institutions (it is only better than the Middle East). The region boasts of the highest percentage of its 15+ population that borrowed and saved money in 2013. However, the statistics show that most of the borrowing was not from financial institution. Interestingly, the percentage of the 15+ population that saved money at financial institution in SSA is greater than the population that borrowed money from these institutions. This situation could be due to the high interest rate charged by financial institutions in these countries (which can be as high as 33% in some countries, e.g., Ghana).

Figure 2: Regional comparison of financial inclusion

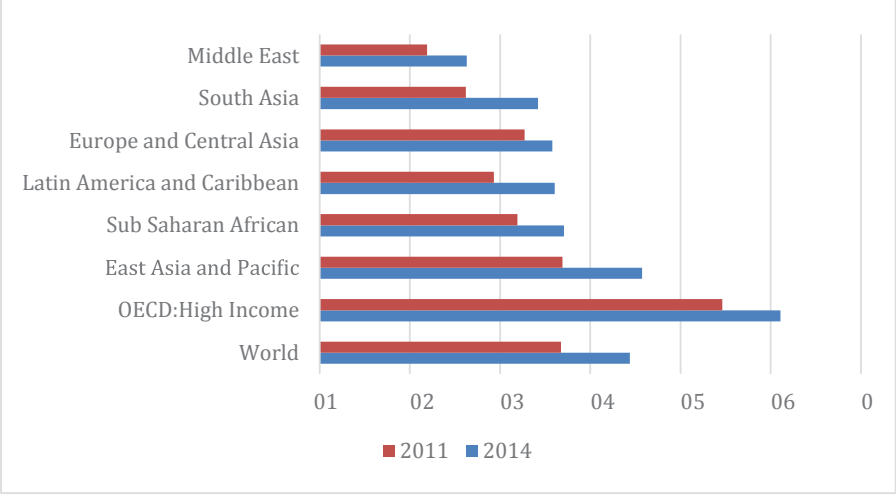


Figure 3: 2014 index of financial inclusion

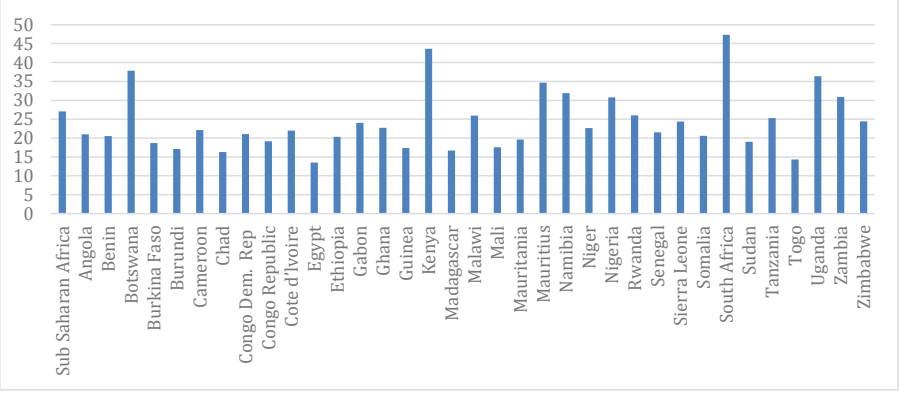


Table 1:Percent of population age 15+ in 2014 that have:

Country	Accounts at Financial Institution	Accounts at Financial Institution - Rural	Borrowed Money in the Past Year	Borrowed Money in the Past Year - Rural	Borrowed from finan. instit.	Borrowed from finan. instit- Rural	Mobile Account	Mobile Account - Rural	Saved Money in the past year	Saved Money in the past year- Rural	Saved at Finan. Institut	Saved at Finan Institut- Rural
Angola	29.32	18.75	29.84	29.11	2.82	1.59	-	-	53.06	47.54	14.86	8.24
Benin	15.98	12	39.59	38.71	7.65	5.84	2.02	1.33	61.1	60.48	7.14	5.78
Botswana	49.24	49.57	69	69.3	13.03	12.67	20.75	21.43	58.17	56.14	26.61	27.15
Burkina Faso	13.42	12.02	46.37	47.02	5.03	5.26	3.08	3.11	50.82	52.06	8.66	7.51
Burundi	6.94	6.32	60.34	60.89	1.51	1.49	0.75	0.71	34.9	35.03	4	3.8
Cameroon	11.35	11.47	56.65	55.09	1.95	2.34	1.8	1.51	63.96	57.9	7.72	7.81
Chad	7.7	7.77	41.02	41.78	2.36	2.46	5.75	5.39	48.58	50.01	4.63	4.15
DRC	10.91	7.53	56.86	60.54	2.4	1.8	9.21	9.18	65.2	68.77	4.72	2.03
Congo Republic	16.68	11.76	41.61	41.62	4.39	1.84	1.99	1.3	55.9	58.13	9.79	8.45
Cote D'lvoire	15.14	10.3	48.42	48.17	2.26	1.82	24.26	25.98	63.23	65.38	8.85	5.34
Ethiopia	21.79	18.65	43.52	44.59	7.36	7.63	0.03	0.03	48.11	47.7	13.63	12.9
Gabon	30.15	24.15	37.83	36.87	4.33	4.02	6.65	3.93	56.01	52.92	18.01	13.49
Ghana	34.62	29.95	36.43	34.38	8.1	6.17	13.01	10.26	55.32	53.64	18.59	13.43
Guinea	6.17	4.05	52.17	54.87	1.96	1.58	1.47	1.29	45.19	45.39	2.87	1.76
Kenya	55.21	53.06	79.19	78.54	14.92	15.64	58.39	56.33	76.06	75.09	30.18	27.7
Madagascar	5.73	2.82	57.33	59.08	2	1.25	4.36	2.96	39.67	37.54	3.26	1.59

Table 1 Continued

Country	Accounts at Financial Institution	Accounts at Financial Institution - Rural	Borrowed Money in the Past Year	Borrowed Money in the Past Year - Rural	Borrowed from finan. instit.	Borrowed from finan. instit- Rural	Mobile Account	Mobile Account - Rural	Saved Money in the past year	Saved Money in the past year- Rural	Saved at Finan. Institut	Saved at Finan Institut- Rural
Malawi	16.14	14.34	66.31	65.7	6.03	5.77	3.84	3.14	59.71	57.5	7.05	6.12
Mali	13.25	11.21	41.46	42.98	2.74	2.64	11.64	12.45	44.9	46.16	2.89	1.79
Mauritania	20.45	16.72	46.61	48.65	7.68	6.39	6.48	6.68	41.2	40.52	10.57	8.77
Mauritius	82.21	80.68	28.77	30.69	17.06	17.46	0.86	0.98	54.16	48.36	35.53	30.02
Namibia	58.06	53.31	45.98	44.79	6.86	5.66	10.36	6.09	56.94	53.64	26.69	23.38
Niger	3.49	3.46	70.73	77.98	1.37	1.13	3.85	4.16	61.02	57.02	1.98	1.7
Nigeria	44.17	38.93	44.82	39.63	5.29	4	2.29	1.78	68.98	69.92	27.07	25.55
Rwanda	38.14	34.29	51.26	47.92	8.18	7.14	18.1	15.78	55.18	53.87	25.53	22.02
Senegal	11.92	6.98	56.6	59.46	3.52	2.43	6.19	3.34	59.05	59.25	6.57	3.54
Sierra Leone	14.15	9.93	57.51	61.82	4.01	3.91	4.45	4.64	65.4	65.9	10.94	6.31
Somalia	7.86	4.39	56.98	60.05	2.05	1.42	37.07	30.55	37.2	33.98	2.82	0.91
South Africa	68.77	68.59	85.58	84.95	12.09	10.46	14.43	13.5	66.36	63.83	32.73	30.19
Sudan	15.27	13.13	45.5	43.76	4.19	4.09	-	-	41.26	37.35	7.47	5.95
Tanzania	19.04	14.36	55.58	55.08	6.5	6.47	32.36	27.98	59.24	58.3	9	6.81
Togo	17.61	13.81	28.58	28.84	3.67	3.43	1.14	1.3	37.55	34.45	6.67	5.28
Uganda	27.78	28.7	78.97	80.65	15.7	16.11	35.1	35.51	75.18	74.91	16.78	17.29

Table 1 Continued

Country	Accounts at Financial Institution	Accounts at Financial Institution - Rural	Borrowed Money in the Past Year	Borrowed Money in the Past Year - Rural	Borrowed from finan. instit.	Borrowed from finan. instit- Rural	Mobile Account	Mobile Account - Rural	Saved Money in the past year	Saved Money in the past year- Rural	Saved at Finan. Institut	Saved at Finan Institut- Rural
Zambia	31.29	30.85	67.99	67.87	4.82	4.06	12.11	11.23	70.12	72.49	16.84	15.82
Zimbabwe	17.19	13.19	62.4	61.69	4.04	3.22	21.6	18.1	51.97	48.05	5.19	3.38
Sub Saharan Africa	28.9	23.58	54.49	54.16	6.29	5.98	11.51	11.46	59.56	57.77	15.9	12.96
East Asia & Pacific	68.76	64.27	41.21	42.74	10.98	9.58	0.4	0.36	70.96	67.44	36.49	32.72
Latin Am & Caribb	51.14	45.74	32.74	31.08	11.31	10.71	1.72	0.99	40.58	38.72	13.46	11.82
Middle East	13.97	10.67	45.73	46.27	5.62	5.01	0.68	0.44	30.45	26.08	3.99	2.41
South Asia	45.49	42.76	46.66	50.48	6.39	6.84	2.65	1.6	36.25	32.95	12.67	11.19
World	60.7	55.77	42.37	44.38	10.69	9.62	2.02	1.94	56.45	53.48	27.38	24.22

Source: Author's compilation based on data from Demirgüç-Kunt and Klapper (2012)

The data presented in Table 1 also illustrates the rural-urban divide which appears to be wide. For example, the percentage of the 15+ population that has accounts at financial institution is about 23% less than that of the general population in the SSA regional average, which suggests the existence of a much bigger urban-rural financial inclusion gap. This significant difference in term of access to bank accounts is not surprising because of the concentration of bank branches in the urban centers. Interestingly, the percentage of the 15+ population of the SSA and those in the rural areas that have mobile phone accounts are similar (11.51% vs 11.46%) and these numbers are the highest in the world. Given the sparse population density of the continent, it is not surprising that mobile phones are being promoted as a tool to enhance financial inclusion in SSA.

Case studies

Factors and barriers of financial inclusion and the role of regulation: are there some African specificities? By Sandrine Kablan

As mentioned earlier, Sub-Saharan African countries are among the least financially developed in the world. The financial development gap of African countries is reflected in the poor access to financial services for both individuals and businesses. Demirgüç-Kunt and Klapper (2012) find that the percentage of adults with a bank account is 23% while it is 89% in developed countries and 39% and 33% in Latin America and Southeast Asia, respectively. In this paper, Kablan investigates the African countries' specificities and financial inclusion and the effect of regulation on financial inclusion. As a first step, the author examines the determinants of financial inclusion for a number of countries. In the second part the author re-estimates the regressions, this time highlighting the African specificity by interacting AFRICA dummy with the main explanatory variables. He finds that some explanatory variables tested for the whole sample have opposite signs and/or are significant only for African countries, suggesting the existence of African peculiarities. The results show that stronger and healthier judicial and legal system encourages people's confidence in the financial systems to open accounts. Consistent with Allen et al (2010), the author finds a strong influence of mobile phones and information and communications technology (ICT) in improving financial services access in Africa.

African specificity also emerges in areas such as non-performing loans and depth of credit information index. Specifically, the author finds that an increase in non-performing loans does not discourage financial institutions in Africa granting credit. Even more interesting is the finding that for the general sample, low competitiveness does not promote access to savings products offered by banks, but for Africa, low competitiveness has a negative impact on access to finance by SMEs. With regards to regulation, the authors find that well capitalized banks in Africa are more inclined to expand their credit distribution base, thereby by touching more people.

Identifying these African specificities has significant policy implications, as they allow political and financial authorities to develop more appropriate measures to improve financial inclusion in Africa. Given these results, governments should aim at improving the legal framework in order to increase the customers' confidence in the judicial and legal system. Also, regulators can encourage greater competition among banks and increase capital adequacy ratio in order to strengthen the financial base of the banks and encourage them to grant more loans.

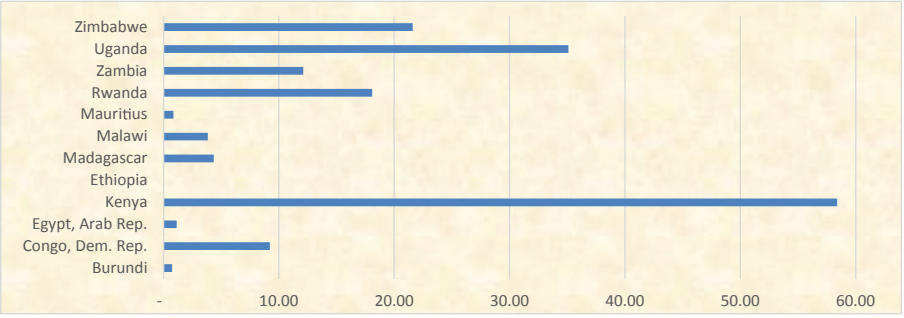
Financial inclusion in Malawi: An assessment (by Nkuna, Lapukeni and Kaude, (2016)

The Malawian economy has registered high economic growth of about 7 percent per annum over the past decade, but the growth has not been inclusive. Poverty remains high at 50.7 percent, and is prevalent in rural areas (Mwanakatwe and Kebedew, 2015). The government considers financial inclusion as a panacea for lowering poverty and income inequality levels and has therefore instituted a number of policies and initiatives aimed at bringing the unbanked into the formal financial system. Notwithstanding this, the efforts of the government have not much progress, as almost half of Malawi's population still remains excluded. According to the Finscope survey, as at 2014, 46 percent of the population were excluded from both formal and informal financial products in Malawi and about 50 percent of the rural population were excluded as compared to 22 percent of those residing in urban areas (Finscope 2014).

In this paper, Nkuna et al (2016) assess the role of commercial banks and digital finance in promoting financial inclusion in Malawi. The authors find that although there has been growth in commercial banks' infrastructure, little has been achieved by the use of conventional channels in reaching the unbanked population particularly in the rural areas. Digital financial services is seen as a viable solution as they offer an effective, less costly means to promote financial inclusion because many people own mobile phones.

Inspite of the growth in available services in recent years, mobile money services in Malawi recorded high inactivity levels in 2014 as compared to other countries in the region (Finscope Survey 2014), thus limiting its impact on enhancing financial inclusion. As the figure below shows, as of 2014, Kenya was far ahead of other African countries, registering 58.4 percent of adults with a mobile account while Malawi had only 3.8 percent of its adult population with mobile account in 2014. The main contributing factors to this high dormancy rate are liquidity constraints particularly faced by agents in the remote areas. The limited reach of banks' cash infrastructure constrains the agents to maintain sufficient liquidity to meet their customers' needs. As of December 2015, a total of 23,754 agents had been recruited, but about 48 percent of them were inactive. Of the active agents, only a small proportion (9.8 percent) were operating in rural areas. The high inactivity amongst the agents limits access of financial services to unbanked, thereby impeding growth of inclusive DFS in Malawi.

Mobile accounts (% age 15+) 2014, selected COMESA states



Source: Nkuna et al, 2016 and World Bank Global Findex, 2016

Challenges to DFS uptake in Malawi

Whilst Malawi has appropriate financial market infrastructure (for payments, clearing and settlement of transactions) to support DFS, there are quite a number of challenges to DFS uptake in the country. These include low literacy levels and consumer awareness, low income levels; poor infrastructure in terms of telecommunications, ICT and power networks, lack of national identification system (that pose challenges in meeting requirements both at the time of registering for services and when transacting cash-outs), limited collaboration amongst the various DFS service providers, regulatory constraints due to lack of overarching regulatory framework (as currently there is no specific legislation to back payment systems), and lack of capacity and skills, both at the regulatory and industry levels.

Policy implication

Given the banking infrastructure problems, it is recommended that commercial banks should consider promoting agent banking and DSF which have proven to be effective for inclusion. Also, given the high inactivity levels both at subscriber and agent level, there is a need for concerted efforts by stakeholders to build robust agent network and increase user base in rural areas. The government needs to continue promoting infrastructure development. It is recommended that the Bank of Malawi should expedite the process of enacting the required legislation to back digital financial services. There is also a need for collaboration amongst various stakeholders, designating clear lead institutions in financial inclusion related activities such as financial literacy program to educate the rural population about the use of digital financial services.

Financial inclusion gaps in Africa

Though there is ample evidence that shows a strong linkage between financial development and economic development, yet as the data presented in figures 2 and 3 indicate, the levels of financial inclusion remain low in Africa compared to other parts of the world. In an interesting article, Allen et al., (2014) attempt to establish the counterfactual by determining what the level of financial development and financial inclusion in Africa would be if the same relationships that exist in the rest of the developing world also held in Africa. Using other developing countries as benchmarks, they find that for 32 of 40 African countries the actual levels of financial development and

financial inclusion fall short of predicted values. In contrast to low- and lower-middle income African countries, upper-middle-income African countries such as Mauritius, Namibia, and South Africa tend to have levels of financial development and financial inclusion that are higher than (or similar to) expected levels, thus suggesting significant gaps in the financial development–financial inclusion nexus for Africa.

To identify the African peculiarities or factors that account for this outcome, the authors examine whether the determinants of financial development and financial inclusion are different in Africa. They find that population density is much more strongly linked to both financial development and financial inclusion than it is elsewhere in the world. Bank branch penetration figures remain low in Africa presumably because of difficulties in achieving minimum viable scale in sparsely populated, low-income areas.

Having established population density as a unique factor for financial development and financial inclusion in Africa, Allen et al. (2014) explore and document evidence that recent innovations in financial services, such as mobile banking, have helped overcome infrastructural deficiencies to improve financial access and to reduce the financial inclusion gaps in Africa. Indeed, technological advances, such as mobile banking, that enable users of financial services to be located far away from their financial institutions, have provided a promising way to facilitate African financial development and financial inclusion outside major cities. Consistent with the data presented in Table 1, they find that mobile banking has advanced more rapidly in Africa than in other parts of the developing world.

In summary, progress has been made in part by the technological advancement, and mobile money and microfinance institutions have substantially increased their outreach in Africa over the past decade (Jarotschkin, 2013). Despite this technological development, mobile banking has so far proven a success only within the context of sending and receiving money and not in terms of bill payment and savings (Faye and Triki, 2013). Achieving, greater substantial gains in African financial inclusion and development will require new approaches on both the demand- and supply-side indicators of financial inclusion. On the demand side, substantial gains in African financial inclusion and development are likely to require concerted efforts at financial education aimed at encouraging usage and building trust among users. On the supply side, greater financial inclusion in terms of savings products, credit, and other financial services will require new approaches on the part of financial services providers that involve an array of new services, delivery channels, and providers. There are indications that the process is already taking hold (Allen et al, 2014). The experience of Equity Bank in Kenya is a case in point. The Bank's more recent experience with agent banking, which employs small retailers as agents that can collect deposits and process loan payments, provides a good example of providers using innovative delivery channels to reach the target group.

Other financial inclusion gaps

i) Data gap.

There is a significant measurement and data gap that must be filled in order to construct a comprehensive picture of financial inclusion in Africa. Specifically, on the demand-side, many countries in Africa are lacking a larger-sample national survey of consumers. Data on financial capability, small and medium enterprises (SME) access to finance,

and market studies measuring the impact of greater financial access is limited. On the supply- side, there is little information on consumer protection measures in African countries. The recent case in Ghana where some clients of a savings and loan bank committed suicide when they lost their savings because of alleged misappropriation of their funds illustrates the need for regulators to have consumer protection measures in place.

ii) Education/income gap

There is evidence that adults in the highest within-economy income quintile are almost four times as likely to have a formal account as those in the lowest income quintile. Similarly, adults with a tertiary education and those aged 25-64 are particularly likely to report having an account at a formal financial institution (Demirgüç-Kunt, and Klapper. 2013). These gaps highlight the importance of financial literacy in expanding financial inclusion.

iii) Geographical (urban-rural) gap

As the data in Table 1 indicate, there is a wide rural-urban divide in financial inclusion in Africa. Bringing financial services to rural clients is a major challenge on the financial inclusion agenda. Often the main barrier to financial inclusion in rural areas is the great distances that rural residents must travel to reach a bank branch. In fact, cost and distance are also commonly cited among adults with a primary education or less as the reason for not using financial services and products offered by financial institutions. Poor infrastructure and telecommunications restrict the geographical expansion of bank branches (CGAP, 2009). In this regard, the use of mobile banking is a welcome solution to this gap.

iv) Banking infrastructure gap

Financial inclusion is positively and significantly correlated with access points measured as commercial bank branches per 100,000 people (Allen et al, 2014). Sub-Saharan African economies are at the low end of the spectrum with a small number of commercial bank branches per 100,000 adults and low account penetration. The lack of banking infrastructure may explain why Africa has been at the forefront of mobile financial services which is considered a bright spot in improving financial inclusion.

v) Gender gap

There are significant barriers to financial inclusion of women in Africa. These barriers include institutional and socio-cultural factors. Requirements by financial institutions such as collateral, lack of financial literacy and cultural and social norms, are among the reasons that are often cited to explain why the gender-related funding gap exists. In some jurisdictions, women do not have ownership titles and earn lower wages than men. This makes them by default unattractive clients for formal financial institutions which often place restrictions on the type of collateral they accept and have very limited or no appetite to lend to clients operating in the informal sector (Taylor and Boubakri, 2013). It must be noted however that, because of recent efforts by government and development agencies including microfinance institutions that favor women, the gender gap is now smaller, though there is still a significant gap that needs to be closed.

Challenges to financial inclusion in Africa and policy prescriptions

Regulatory challenge: Financial inclusion and financial instability

Financial inclusion has become an explicit policy objective in many African countries. The increasing involvement of governments in financial inclusion poses new challenges to African central banks. Historically, the banks' role has been to ensure the stability of the financial system through the regulation and supervision of financial institutions. Central banks are now increasingly playing an active role in promoting financial inclusion, particularly in the areas of microfinance, consumer protection, rural finance and SME access (CGAP, 2010). Playing a promotional role in expanding financial inclusion may potentially give rise to tension with the traditional objective of financial stability. The subprime crisis is a good reminder of the risks to systemic stability stemming from policies and practices aimed at increasing access to finance.

Financial inclusion also entails other risks that potentially can affect financial stability. Banking the poor and the unbanked typically involves high operating costs, as financial intermediaries invest in new distribution channels, new products and new risk management systems that are sometimes untested. These untested innovations can introduce reputational risks which can potentially jeopardize financial stability.

Achieving greater financial inclusion and maintaining financial stability are not mutually exclusive policies. However, a key challenge for African regulators in their efforts to pursue these seemingly incompatible policy objectives is how to harness the potential of financial inclusion while ensuring that the stability of the financial system is not compromised. A possible solution lies in a facilitative regulatory environment that requires policymakers to adapt regulatory frameworks to financial innovation in the low-income market segment so as to ensure that the formal financial system delivers affordable financial services to those excluded from the financial system with greater efficiency without compromising on acceptable levels of safety and soundness.

Challenges to the development of technology-based financial services

Technological development, in particular mobile money, has emerged as a facilitator of financial inclusion in Africa, yet various obstacles have been preventing the development of technology-based financial services on a large scale. For financial inclusion to be expanded through technological development regulation, market uptake is critical. Passing enabling regulation does not guarantee increased access if the users don't understand the product and services. One challenge facing policy makers is the low levels of financial literacy and income: Africa holds one of the lowest literacy rates in the world. As a result, the population's ability to understand technology-based financial services may be hampered. Hence, financial literacy programs are needed to inform customers and show them how digital financial services (DFS) work, the risks involved and how they can protect themselves. The recent financial crisis has underscored the importance of financial literacy and consumer protection, all of which are important components of a good financial inclusion program. Financial education initiatives should be high on the government agenda and should be incorporated into high school and university curricula.

Data and measurement challenge

Tracking progress and measuring outcomes of financial inclusion policy reforms are important parts of any financial inclusion initiative. To track progress in achieving more inclusive financial systems and gauge their impact, reliable and comprehensive data that capture various dimensions of financial inclusion is a critical condition for evidence-based policymaking. Rigorous, well-tailored data is instrumental in identifying policy gaps, understanding both served and underserved populations, and defining priorities for action. This resource may not only set a clear direction for policymaking but may also allow tracking progress of financial inclusion initiatives. Despite these benefits, there is paucity of data describing financial inclusion in most African countries. While data availability is increasing (and the World Bank and other international organizations have been at the forefront of compiling relevant data), more can be done by each country to increase the coverage and scope of financial inclusion data on the continent. It is important for governments of African countries to implement nationally-led surveys of financial inclusion on a larger scale. In this regard, there is a need for strong political will to implement surveys and to gather data on outcomes.

Other policy recommendations

i) Given the experience of Kenya and other countries in the developing world (e.g. the Latin America and Caribbean region), the following lessons could be drawn towards achieving greater financial inclusion in Africa. Government commitment and involvement is paramount in achieving substantial gains. Governments from Kenya, Brazil, Colombia, and Mexico, which have set financial inclusion as a policy priority, have been able to expand financial access at the country level. These governments have adopted regulations (e.g., agent banking) and simplified accounts that foster innovation by the private sector and these initiatives have contributed to the expansion of financial products and services within their respective countries.

ii) Creating favorable technological environment where the rural segment of the unbanked can use mobile money can help draw the large rural population into the financial system. In this regard, African governments can create enabling environment for mobile banking in rural areas by using fiscal tools such as tax concessions to encourage phone service providers to invest in telephone infrastructure in the rural areas.

iii) Addressing other demand-side constraints: Despite the growing number of institutions serving low-income and unbanked populations, there is sometimes lack of trust and understanding on the part of the unbanked population toward financial inclusion. The image and trust the underserved populations hold towards financial institutions play an extremely important role in expanding financial inclusion. Building trust is necessary to achieve long term financial inclusion. Creating a good reputation that fosters loyalty and consumer protection while providing a conducive environment in which these unbanked and mostly uneducated feel comfortable could contribute to increasing uptake of financial inclusion products and services. Here, lessons can be learned from the experiences of Latin American and Caribbean (LAC) countries. The requirements that have been established by financial intermediaries with agent banking networks in these countries to ensure security and trust include maintaining a good reputation and effective regulation of the providers (Hurtado et al. 2013).

iv) Since most of the unbanked are in the rural areas and are unable to access financial services because of infrastructural challenges, policy makers should pay particular attention to this segments of the society by creating an enabling environment for agent banking to flourish. Agent banking will help enhance financial inclusion by acting as delivery channels and offering banking services in a cost effective manner. Using banking agents is important in light of the evidence that SSA countries have very low number of bank branches per 100,000 adults.

v) Leveraging successful innovations: In formulating financial inclusion agenda, policymakers should leverage successful innovations developed by their peers in Kenya and other parts of the developing world (including Brazil) that have realized significant benefits of financial inclusion in safe ways. In this regard, there is a need for increased peer-to-peer advice, as innovative solutions are being generated by regulators of other developing countries. The Alliance for Financial Inclusion—a global network of policymakers in developing countries— has been facilitating peer-to-peer exchange among developing countries, enabling other countries to adapt and scale up successful innovations. African countries would become beneficiaries of better served by becoming active participants of such gatherings.

Conclusion

Financial inclusion remains a top priority on reform agendas of developing countries because of its economy-wide consequences. Specifically, it can enable the poor to accumulate savings and/or borrow to invest in income-enhancing assets and start micro-enterprises, which ultimately generates employment, increases incomes and reduces poverty and foster social and political cohesion, all of which will contribute to achieving sustainable economic growth. In recent years, a growing number of Africans are using alternatives to traditional banking made possible by the rapid spread of mobile phones. In particular, the recent growth of mobile money has allowed millions of people who are otherwise excluded from the formal financial system to perform financial transactions relatively cheaply, securely, and reliably. The use of mobile money in East Africa, especially Kenya shows that innovations can bring about dramatic changes in how people engage in financial transactions by lowering entry barriers, reducing costs, and expanding access. Expanding financial access to the unbanked segments of the economy can potentially cause instability in the financial system. It should however be noted that, achieving greater financial inclusion and striving for financial stability are not mutually exclusive policies, rather they are complementary in nature. Policy makers should therefore create an enabling regulatory environment that ensures affordable financial services and products to those excluded from the financial system while at the same time ensuring the safety and integrity of the system.

Note

1. The question of how or whether finance and therefore financial inclusion contributes to the development process and poverty reduction is not new. There remains some debate as to whether financial development causes economic growth or vice versa. Schumpeter (1911) argued that financial intermediation through the banking system played a pivotal role in economic development by affecting the allocation of savings, thereby improving productivity, and the rate of economic growth.

However, Lewis (1955) suggested that the causality between finance and growth was not unidirectional; rather, there was a two-way relationship, where financial markets and institutions develop as a consequence of economic growth, and in turn act as a stimulus to growth.

References

Adasme, O., G. Majnoni, and M. Uribe. 2006. "Access and Risk: Fiends or Foes? Lessons from Chile." Policy Research Working Paper 4003, World Bank, Washington, D.C.

Alliance for Financial Inclusion (AFI). 2012. "Agent Banking in Latin America." Discussion Paper, AFI.

Allen, F. E. Carletti, R. Cull, J. Qian, L. Senbet, and P. Valenzuela. 2013. Resolving the African Financial Development Gap: Cross-Country Comparisons and a Within-Country Study of Kenya. World Bank Policy Working Paper No. 6592. Washington, DC.

Allen, F. E. Carletti, R. Cull, J. Qian, L. Senbet, and P. Valenzuela. 2014. The African Financial Development and Financial Inclusion Gaps. World Bank Policy Working Paper No. 7019. Washington, DC.

Beck, T., A. Demirgüç-Kunt, and V. Maksimovic. 2005. "Financial and Legal Constraints to Firm Growth: Does Firm Size Matter?" Journal of Finance 60 (1): 137–77.

Christensen, B.V. 2011. "Have monetary transmission mechanisms in Africa changed?" Central Banking in Africa: Prospects in a Changing World, volume 56: 37-61, Bank for International Settlements.

Consultative Group to Assist the Poor (CGAP). 2009. Financial Access 2009: Measuring Access to Financial Services around the World. Washington, D.C.: CGAP/World Bank.

Cull, R., A. Demirgüç-Kunt, and T. Lyman. 2012. "Financial Inclusion and Stability: What Does Research Show?" Brief, CGAP, Washington, D.C.

Demirgüç-Kunt, Asli, Thorsten Beck, and Patrick Honohan. 2008. Finance for All? Policies and Pitfalls in Expanding Access. World Bank Policy Research Report. Washington: World Bank (http://go.worldbank.org/HNKL9ZHO50).

Demirgüç-Kunt, A., and L. Klapper. 2012. "Measuring Financial Inclusion: The Global Findex." World Bank Policy Research Working Paper Series 6025.

Demirgüç-Kunt, A., and L. Klapper. 2013, Financial Inclusion in Africa: A Snapshot, in Financial Inclusion in Africa, edited by Thouraya Triki Issa Faye, African Development Bank (AfDB)

Faye, I., and T. Triki, 2013, Financial Inclusion in Africa: The Transformative Role of Technology, in Financial Inclusion in Africa, edited by Thouraya Triki Issa Faye, African Development Bank (AfDB)

Hannig, A., and S. Jansen. 2010. Financial Inclusion and Financial Stability: Current Policy Issues. ADBI Working Paper 259. Tokyo: Asian Development Bank Institute. Available:http://www.adbi.org/workingpaper/2010/12/21/ 4272.financial.inclusion. stability.policy.issues/

IFC. 2012. "IFC Advisory Services Access to Finance Annual Review 2011." Washington DC: International Finance Corporation World Bank Group.

Jalilian, H & Kirkpatrick, C. (2001).Financial development and poverty reduction in developing countries, Working Paper No. 30, IDPM, Manchester University Retrieved on 15th January,2015 from http://onlinelibrary.wiley.com/doi/10.1002/ ijfe.179/abstract

Jarotschkin, Alexandra, 2013, "Microfinance in Africa." Chapter 1 in Thorsten Beck and Samuel Munzele Maimbo, Eds., Financial sector Development in Africa: Opportunities and Challenges, Washington, DC: The World Bank.

Kablan, S. 2016, Factors and barriers of financial inclusion and the role of regulation:

are there some African specificities? AERC Collaborative research project
Khan, H. R. 2011. "Financial Inclusion and Financial Stability; Are They Two sides of the Same Coin?" Address at BAN- CON 2011. Mumbai: Reserve Bank of India. Odiege, P. 2012. "Mobile Financial Services in Africa: Reaching All Sections of the Population." African Development Bank.
Leeladhar, V. (2005). Taking banking services to the common man– Financial inclusion. Commemorative Lecture by Deputy Governor Reserve bank of India on December 2, 2005 at the Fedbank Hormis Memorial Foundation at Ernakulam. Retrieved 19th February, 2014 from www.bis.org/review/r051214e.pdf.
Makanjee, Maya. 2009. "Financial Inclusion in Africa." Presentation at the Alliance for Financial Inclusion Global Policy Forum. Nairobi, September 15.
Mbiti, I, and David W., 2011, "Mobile Banking: The Impact of M-Pesa in Kenya," NBER Working Paper 17129.
Miller, C. (2005). Global perspectives in rural finance and poverty alleviation. Paper presented at the 4th AFRACA Microfinance forum: Lessons learnt in micro and rural finance service provision in Africa. Kampala.
Morduch, Jonathan,1999. "The Microfinance Promise." Journal of Economic Literature 37 (4): 1569–1614.
Mwanakatwe, P and Kebedew, G.A, 2015, African Economic Outlook: Malawi 2015 http://www.africaneconomicoutlook.org
Nkuna, O., Lapukeni, A.F., and Kaude, P. (2016), Financial Inclusion in Malawi: An Assessment, Reserve Bank of Malawi- AERC Collaborative research project:
Robinson, Marguerite. 2001. The Microfinance Revolution: Sustainable Banking for the Poor. Washington, DC: World Bank.
Taylor, S., and N. Boubakri, 2013, Women and Finance: Unlocking Africa's Hidden Growth Reserve, in Financial Inclusion in Africa, edited by Thouraya Triki Issa Faye, African Development Bank (AfDB)
Thorat, U. "Financial regulation and financial inclusion – working together or at cross-purposes" Address at the Tenth Annual International Seminar on Policy Challenges for the Financial Sector. International Monetary Fund and the World Bank, Washington D.C.