Mobile Credit in Kenya and Tanzania: Emerging Regulatory Challenges in Consumer Protection, Credit Reporting and Use of Customer Transactional Data

Jason G Blechman[1]
Macmillan Keck, Attorneys & Solicitors, New York and Geneva

Abstract
The recent proliferation of mobile financial services in developing countries has increased access to financial services among underserved rural and low-income populations. Mobile credit is one emerging mobile financial service that allows consumers to quickly apply for and receive loans over mobile devices. Mobile credit services have achieved early success in Kenya and Tanzania, two mature markets for mobile financial services. While these new services have the potential to further promote financial inclusion, they also raise novel regulatory issues and do not fit neatly into pre-existing regulatory categories. This is due to the nature of mobile credit and the variety of entities and regulatory frameworks implicated in the business models found in these two markets. Policymakers and regulators will need to make choices about how to regulate mobile credit with respect to consumer protection, credit reporting and the use of mobile and mobile money services transactional data, a key input for credit evaluation decisions. These choices will need to take into account promotion of financial inclusion and protection of consumers while limiting disincentives for innovation and investment.

Keywords
mobile credit, mobile financial services, regulatory challenges, consumer protection, credit reporting, customer transactional data, Kenya, Tanzania

Recommended citation
Blechman, J. G. (2016). Mobile credit in Kenya and Tanzania: Emerging regulatory challenges in consumer protection, credit reporting and use of customer transactional data. *The African Journal of Information and Communication (AJIC)*, *17*, 61-88.

1 The author is an attorney with experience in telecom, competition and corporate law. He has recently advised governments, regulators, foundations and private sector clients on regulation of mobile financial services in Bangladesh, Kenya, Tanzania, Uganda and Ukraine.

1. Introduction: The mobile credit phenomenon

The recent proliferation of mobile financial services in developing countries has increased access to financial services among underserved rural and low-income populations. GSMA (2016a, p. 8), a global industry group of mobile network operators (MNOs), claims that mobile financial services have done more to extend the reach of financial services in the last decade, than traditional bricks and mortar banking has in the last century. Prior policy efforts to increase access had largely focused on expanding the formal banking sector and were often hampered by the high costs of building and operating physical branches and extending ATM networks (Macmillan, 2016). Today, the rapid growth of mobile networks across the developing world and the affordability of mobile devices has opened up a new, alternative, mobile channel for low-cost delivery of financial services. The regulatory approaches applied to these services are critical to their development. This article looks specifically at mobile credit, an emerging financial service that has potential to grow and further promote financial inclusion

Mobile financial services is an over-arching term for the use of mobile telecommunications technology to execute a variety of financial transactions (GSMA, 2016a, p. 66). The rise of mobile financial services has been accelerated by the advent of mobile money, a form of electronic money accessible on a mobile device that is easily convertible to and from cash via inexpensive agent networks (Aron, 2015, p.6). Mobile money services, which allow users to conduct basic payments and transfers on a mobile device using mobile money, are typically the first mobile financial services to emerge in a new market. Safaricom's M-Pesa service in Kenya is perhaps the most well-documented and successful example of a mobile money service (Eijkman, Kendall & Mas, 2010; Mbiti & Weil, 2016; Jack, & Suri, 2011).

As of 2015, there were 411 million mobile money accounts globally, with 271 live services in 93 countries (GSMA, 2016a, pp. 8-9). Some experts predict that the number of mobile money users will exceed one billion during 2016 (Kerr & Patel, 2016). Uptake of mobile money services has been particularly pronounced in Sub-Saharan Africa, in part because access to traditional financial services in the region has been limited. In 2014, 34% of adults had a mobile money account and by 2015, one in three mobile connections was linked to a mobile account. The East Africa sub-region has the highest recorded level of mobile money penetration at 55% (GSMA, 2016a, p. 32).

Mobile money services initially arose as a means of allowing the unbanked, i.e. those without traditional bank accounts, to transfer cash to relatives and others across significant geographic distances with only nominal costs. By utilising extensive mobile money agent networks to cash-in and cash-out on either end of the electronic transfer, users could avoid the expense and insecurity of having to physically transport cash from one location to another, for example via mini-bus taxi services. Over time,

the basic transfer and payment functionality of these services served as a platform for the evolution and deployment of more advanced mobile financial services, including bulk payments (such as payment of salaries by government or other large employers), bill payment (such as school fees and utility payments), international remittances, mobile insurance, mobile savings and mobile credit.

The World Bank (2016, p. 267) has described mobile money as both a success story and a regulatory minefield. As mobile money services have emerged, they have defied old regulatory categories and raised novel issues. In particular, policymakers and regulators have had to fashion approaches that differentiated these services from traditional, highly regulated banking services, without compromising the stability and integrity of the financial system or consumer protection. The regulatory approach matters: A 2015 empirical study of 22 countries found that the appropriate level of regulation is key to the success of mobile money in a market, often playing a determining role in whether it flourishes or fails to ignite (Evans & Pirchio, 2015).

Over the last decade, regulators and policymakers across the globe have experimented with and refined various approaches to regulating mobile money services. For example, they have had to grapple with who can offer mobile money services. Some countries limit entry only to banks (Bangladesh, Ghana, India), some have allowed MNOs and other non-banks to provide these services (Kenya, Tanzania), while others only permit non-banks to offer these services when in some form of partnership or other arrangement with a bank (Uganda). Other issues that have arisen with respect to mobile money services include ensuring account balances are secure; avoiding any threat to the stability and integrity of the overall financial system; minimising fraud; terrorism financing and money laundering; promoting agent networks that are extensive, reliable and competitive; providing fair access over MNO-controlled telecommunications channels; protecting consumers; and promoting competition among providers without stifling investment. This list is hardly exhaustive.

In addition to struggling with *how* to regulate mobile money services, policymakers and regulators have had to consider *who* should regulate these services. Some regulatory issues fall squarely within the remit of the financial services regulator (for example, authorising market entry and prudential regulation), and some lie with the telecommunications regulator (for example, access to and pricing of telecommunications network services used for delivery of the services) (Macmillan, 2016). Frequently, issues arise that cross the areas of responsibility of both these sector regulators and some issues also implicate general competition and consumer protection regulators, where these have been established (for example, agent exclusivity) (Macmillan, 2016). Coordination among regulators is necessary to ensure a coherent and comprehensive regulatory approach to mobile money services.

This article discusses specifically mobile credit, an emerging mobile financial service

that has great potential to grow and further promote financial inclusion. Mobile credit products are particularly abundant in Sub-Saharan Africa, in part because of the high level of mobile money penetration in the region, which enables mobile credit delivery (Hwang & Tellez, 2016). As of December 2015, there were 45 live mobile credit services across 16 countries, 37 (82%) of which were in Sub-Saharan Africa.[2] In 2015, seven new services were launched, all in Sub-Saharan Africa (GSMA, 2016b, p. 24).

Like mobile money before it, mobile credit is a new phenomenon that raises novel regulatory issues and does not fit neatly into pre-existing regulatory categories. For example, it is not useful to view mobile credit as merely a new development in banking or microcredit products. As discussed below, this is because mobile credit products have significant differences from traditional banking and even from newer microcredit products. Also, mobile credit provider entities may not be treated as banks or similarly regulated financial institutions for regulatory purposes. Nor is it useful to view mobile credit merely as an extension or "add-on" of existing mobile money services, like bulk payment, bill payment or international remittances. Mobile credit products are now increasingly delivered as stand-alone products without any relationship to an MNO (or the technological channels MNOs control) or any other mobile money services provider. Finally, like mobile money services, mobile credit products straddle several regulatory frameworks and sound regulatory policy will undoubtedly require coordination among regulators.

As mobile credit grows, regulators and policymakers will need to grapple with the *hows* and *whos* of regulating this new emerging phenomenon which transcends even the relatively new categories and approaches to mobile financial services developed over the last decade. This will necessarily involve considering prudential regulation, to ensure the integrity and stability of the financial system; economic regulation, to address market failure; and consumer protection regulation, to ensure that consumers have sufficient information to make informed choices. At the same time, regulators and policymakers will want to create an enabling environment that incentivises innovation and investments in these new products and the underlying technologies that drive them. Trade-offs are inevitable in addressing these diverging regulatory concerns.

This article does not advocate any particular regulatory approach, but rather seeks to frame some of the issues and choices that merit consideration. It looks specifically at three areas of concern: consumer protection, credit reporting, and the treatment of mobile phone and mobile money transactional data. In thinking through these, the

2 GSMA figures do not include airtime credit services, or services which merely allow mobile access to traditional credit products.

article draws largely on the experiences of Kenya and Tanzania, two mature markets for mobile money services, where mobile credit products are beginning to flourish.

2. The emergence of mobile credit

The nature and unique character of mobile credit

Mobile credit generally refers to the ability of consumers to quickly apply for and receive loans over mobile devices, avoiding the time, expense and paperwork of a traditional loan application at a bank. While no formal definition has been agreed, there are several useful descriptions. Mobile credit uses "the mobile phone to provide credit services to the underserved" (GSMA, 2016b, p. 36). There are three dimensions that have been effectively digitised in mobile credit products, namely evaluation of an applicant's repayment capacity, loan disbursement and loan repayment (Hamp, Agwe & Rispoli, 2016, p. 10). This digitisation means that mobile credit has three key attributes, which differentiate it from traditional credit, namely that it is "instant, automated and remote" (Chen & Mazer, 2016). *Instant* refers to the fact that credit evaluation decisions can happen within seconds and in no longer than 24 hours; *automated* refers to the fact that decisions about credit worthiness and limitations, customer management and collections, are all automated, based on pre-set parameters; while *remote* refers to the ability to apply for loans, receive disbursements and make repayments without ever visiting a branch (Chen & Mazer, 2016). For purposes of this article, mobile credit can be thought of as those products that have all the above attributes, but not those that (i) are targeted as a credit product for mobile money agents rather than consumers, (ii) provide financing for collateralised assets[3], or (iii) are credit products for mobile airtime.

One transformative aspect of mobile credit products is the ability of lenders to leverage the available non-traditional digital data of applicants. Many applicants lack formal credit histories. This may be due to an inability to qualify for a bank loan, or it may merely reflect a non-functioning or absent credit reporting regime. When mobile credit services are linked to a mobile subscription or a mobile money account, an MNO or other mobile money services provider can make available a wealth of consumer data. This can include mobile phone usage, airtime purchase history (including airtime purchased using a credit service), and deposit, transfer, merchant payment and bill pay activity of mobile money accounts. Other useful digital data can be obtained directly from a user's smartphone, including social media, SMS and Internet browsing activity. An examination of 10 mobile credit services, nine of which were in Sub-Saharan Africa, of which seven were either in Kenya or Tanzania, found that all of these services leverage such non-traditional digital data

3 For example, a number of credit products available through mobile devices provide secured financing for solar home systems and consumer products (GSMA, 2016b, pp. 25-26).

to inform lending decisions (Hwang & Tellez, 2016). Until an applicant establishes a repayment history with a mobile credit provider, credit evaluation decisions typically rely on non-traditional digital data to evaluate a loan application.

Obtaining user digital data is only half of the challenge of credit evaluation. Mobile credit providers need to take that data and turn it into a useful predictor of repayment in order to reliably evaluate loans applications and set appropriate credit limits. Specialty analytics firms as well as lenders' in-house teams have developed proprietary software algorithms that collect, sift through and apply appropriate weighting to this data in order to evaluate loan applications without any human review. These algorithms are often the special sauce of the individual mobile credit product, the details of which are closely guarded. In Tanzania it has been found that using non-traditional digital data and advanced analytics could reduce the delivery costs of basic microloans of around USD180 by 20-30%. The majority of savings would be generated from lower underwriting costs, lower loan application costs, as well as lower collections and risk costs (CGAP, 2014, p. 8).

Because mobile credit is unsecured and credit evaluation relies, at least initially, on the relevant algorithms, rather than on loan repayment history, it is considered higher risk than traditional bank loans. Not surprisingly, CGAP found that loan amounts are typically small (significantly less than the local equivalent of USD100), have short loan terms (typically less than a month, though some services offer terms that span several months) and are significantly costlier than traditional consumer loan products (with interest rates ranging from 2% to 10% per month) (Hwang & Tellez, 2016). Interest is often assessed as a flat fee, regardless of whether the loan is repaid early. This means that a 30-day loan, repaid in three days, could incur the full monthly interest charge, making the annualised rate astronomical. However, despite these high costs, mobile credit has become an attractive alternative to traditional microcredit services, such as those provided by micro-finance institutions and banks, which often have limited reach and flexibility due to physical constraints and high operating costs (GSMA, 2014, p. 62).

Mobile credit is often conflated with mobile banking. While the two concepts overlap, it is worth distinguishing them. Mobile banking is a sweeping concept that refers to the ability of customers to use their mobile devices as a channel for utilising services provided by licensed banks. This can include access to traditional banking products, such as balance inquiries, repayment of traditional loans, balance inquiries, deposits and withdrawals. When mobile credit first appeared, it was provided by bank partners as an add-on to the mobile money services of MNOs. Accordingly, it was convenient to consider mobile credit as a form of mobile banking offered in collaboration with a mobile money service. However, today many mobile credit providers are not banks or subject to any financial services regulation and therefore fall outside of mobile banking. Furthermore, while some mobile credit products offer

a new source of revenue to MNOs that partner with lenders, today many mobile credit products are provided independent of MNOs or other mobile money services and are no longer add-ons.

Models of mobile credit

Over the past few years, mobile credit has diversified to encompass a variety of business models that span a variety of regulatory classifications. This article sets out four of these models, focusing on examples from Kenya and Tanzania. This is not meant to be an exhaustive list of every conceivable model, or even every model deployed, but rather discusses the models that have already achieved a measure of success, with products gaining publicity and name recognition in these two countries.

Model 1: Bank and MNO partnership

The bank and MNO partnership is the prototype for a mobile credit venture. It is the model employed by Safaricom and Commercial Bank of Africa (CBA) in their M-Shwari product, as well as by Vodacom and CBA in their M-Pawa product, the first successful mobile credit products in Kenya and Tanzania, respectively. This model was later successfully reproduced by KCB M-Pesa in Kenya. These services offer mobile savings accounts along with their mobile credit products.

As the first successful mobile credit product of its kind, the detailed workings of M-Shwari have already been well documented (Cook & McKay, 2015; Mirzoyants-McKnights & Attfield, 2015). A licensed bank (CBA) partners with an MNO (Safaricom) that also has a mobile money service (M-Pesa). The two co-brand a mobile credit product (M-Shwari), which is offered as an add-on to the mobile money service[4] and agree on a revenue sharing arrangement. The MNO provides access to customers as well as transactional data on mobile phone and mobile money usage. The bank develops a credit scoring algorithm that analyses the transactional data to make credit evaluation decisions. The actual lending is done exclusively by the bank, satisfying its identity authorisation requirements from information provided by the customer during registration of the phone number and the mobile money account (Cook & McKay, 2015). The bank carries the repayment risk and absorbs losses from non-performing loans. The credit accounts (as well as the accompanying saving accounts) are considered bank accounts for regulatory purposes. However, unlike in traditional bank loans, disbursements and repayments can only be made through the mobile money service (M-Pesa) and there is generally no connectivity with other bank accounts (Cook & McKay, 2015), though there are some exceptions.[5]

4 M-Shwari has been incorporated into Safaricom's STK menu, available (along with M-Pesa) on all phones with a Safaricom SIM card. Until April 2016, KCB M-Pesa was only accessible through USSD, but at the time of writing is now also incorporated into the Safaricom STK menu. M-Pawa is only accessible through USSD because in Tanzania M-Pesa and its related services do not utilize the Vodacom STK menu.

5 In the case of KCB M-Pesa, an exception is that deposits can be made into an account from other KCB M-Pesa accounts or from a KCB branch (Safaricom, n.d.).

Model 2: Non-bank lender and MNO partnership
The second model is similar to the first, except that the lending entity is not a bank or similarly regulated financial institution, but rather an unregulated lender. As a result, the lender cannot offer savings accounts as a further add-on product. Otherwise, from the consumer's perspective, the mobile products under Model 2 are essentially identical to the mobile credit products under Model 1, i.e., short-term, unsecured credit, available as an add-on to an existing mobile money service.

Timiza is a successful example of a mobile credit product that follows this Model 2. Timiza was launched in Tanzania in November 2014, as a partnership between Airtel Tanzania, an MNO, and lender Jumo (formerly African Financial Business), to offer a short-term, unsecured mobile credit product linked to the mobile money service Airtel Money. Jumo is classified as a microfinance institution and thus falls outside of Tanzania's banking regulatory framework (Roberts, Blechman & Odhiambo, 2016, p. 21). Jumo also operates in Kenya, where it is considered a non-deposit taking microfinance institution and similarly also falls outside the banking regulatory framework, avoiding oversight by the Central Bank of Kenya. Airtel Kenya and Jumo have partnered to launch Kopa Cash, a mobile credit product similar to Timiza that functions as an add-on to Airtel Money accounts in Kenya. As of mid-2016, this product was in the process of being fully deployed.

Model 3: Bank utilising MNO channels
A third model for mobile credit involves banks utilising mobile channels to offer mobile credit, without partnering with MNOs or other mobile money service providers. However, as these credit services that currently operate in Kenya and Tanzania typically require links to existing traditional bank accounts, or must be secured by savings, they violate the parameters of mobile credit set out above and are arguably forms of traditional credit delivered by banks over mobile channels. While they may not strictly be considered mobile credit, they may serve as an alternative for borrowers with bank accounts. For purposes of this article, an examination of their regulatory treatment is instructive, even if only to provide context for and comparison with the treatment of *proper* mobile credit products.

One example of such a product is MCo-op Cash, a mobile wallet launched in Kenya in 2014 by The Co-operative Bank of Kenya Limited and accessible across mobile networks using USSD (The Co-operative Bank of Kenya Limited, n.d.a).[6] In addition to transfer and payment functionality, MCo-op Cash allows subscribers

6 Unstructured supplementary service data (USSD) is a session-based telecommunications channel used for transmitting data across a GSM network. Users typically initiate sessions by entering "short codes," e.g., *999# and information is presented by the service provider in the form of menus to be navigated by the user.

to apply for loans, which are deposited directly into the wallet account (The Co-operative Bank of Kenya Limited, n.d.b). As of May 2016, three types of loans alone

are available, secured loans (secured by savings account balances), salary advances (only available to those who have repaid similar loans from Co-operative Bank) and business loans (only available to those with existing Co-operative Bank loans) (The Co-operative Bank of Kenya Limited, n.d.c).

Another example is Equity Bank's Eazzy Loans in Kenya. In order to launch a mobile banking business (including mobile money services) that could compete with M-Pesa, without the need to rely on Safaricom's USSD channel, Equity Bank obtained a telecommunications license and established Equitel, a mobile virtual network operator[7] (Mas & Staley, 2014). With an Equitel SIM card, subscribers are able to access the My Money mobile money service through Equitel's SIM toolkit (STK) menu, including the Eazzy Loan product. However, opening a traditional Equity Bank account is required to access these services (Equitel, n.d.).

Model 4: Non-bank mobile Internet application

A fourth model for mobile credit involves non-bank lenders delivering mobile credit products via smartphone apps. Smartphone usage is growing in in East Africa, with penetration reaching 19.4% as of 2015 (GSMA, 2016a, p. 32). According to Safaricom, the leading MNO in Kenya and provider of the M-Pesa service, the number of smartphones in Kenya rose 128% in 2015 to 7.8 million (Aglionby, 2016a). Under this Model 4, a credit provider has no formal relationship with a mobile money service, other than connecting to allow disbursements and payment, similar to connections made by bill pay and other third party services. By utilising mobile Internet, these products avoid reliance on MNO controlled channels such as USSD and STK. While other services, such as MCo-op Cash (see Model 3) are also available as smartphone applications, in addition to availability via mobile channels, under this Model 4, the mobile credit product is exclusively available over mobile Internet.

Branch, launched by Branch International in Kenya in 2015, is an example of a mobile credit product in Kenya utilising Model 4. Branch is an unregulated lender, falling outside of Kenya's banking regulatory framework and oversight by the Central Bank of Kenya (Hwang & Tellez, 2016). Branch is available exclusively as an Android app and collects information from a user's phone, including SMS activity, calling patterns, M-Pesa transactions, Facebook activity, GPS data and a user's contacts,

7 A mobile virtual network operator (MVNO) utilises the network infrastructure and technology of an existing MNO. Equitel utilises the network of Airtel in Kenya.

which is analysed via a proprietary algorithm to make credit evaluations (Branch, n.d.; Google Play, n.d.a; Herbling, 2015).[8] Disbursements are made into M-Pesa accounts, though there is no partnership between the services and Branch is not an add-on to a mobile money service as in Models 1 and 2. In its first six months of operation, Branch reportedly disbursed close to USD1 million in loans (Herbling, 2016). Branch is also available in Tanzania (Google Play, n.d.a).

Another example of a mobile credit product using this model is Tala, formerly Mkopo Rahisi, a mobile credit product launched in March 2014 by US start-up InVenture (Aglionby, 2016b). Like Branch, Tala is also available exclusively via an Android app. The app scans a user's smartphone, including SMS, emails, Facebook and Twitter activity, frequency of voice calls and M-Pesa data, to collect data to determine creditworthiness (Aglionby, 2016b; Google Play, n.d.b; Mwiti, 2016).[9] Tala reportedly disbursed over KES1 billion (nearly USD10 million) in loans by the end of May 2016 (Herbling, 2016). Tala is also available in Tanzania, with plans to expand into Ghana and Nigeria in 2016 (Mwiti, 2016).

Table 1: Models of mobile credit products in Kenya and Tanzania

	Lender is a bank	Mobile money service add-on	Relies on MNO-controlled channels	Examples
Model 1	Yes	Yes	Yes	M-Shwari, KCB M-Pesa (Kenya), M-Pawa (Tanzania)
Model 2	No	Yes	Yes	Timiza (Tanzania), Kopa Cash (Kenya)
Model 3	Yes	No*	Yes	MCo-op Cash, Eazzy Loans (Kenya)
Model 4	No	No	No	Branch, Tala (Kenya and Tanzania)

** Although these bank products may be affiliated with mobile money services provided by the same bank, they are not add-ons to a third-party mobile money service.*

8 As of 30 June 2016, Branch's listing at the Google Play store states "Branch eliminates the challenges of getting a loan by using the data on your phone including your M-Pesa SMS history to verify your identity and create a credit score."

9 As of 30 June 2016, Tala's listing at the Google Play store states: "When you download Tala, we will ask to scan your M-Pesa SMS and other information in order to verify your identity, creditworthiness, and provide you the fastest loan in Kenya."

3. Substantive areas of concern

Basis of potential regulation

Next, this article examines regulatory choices that policymakers and regulators have made, and will continue to need to address, around mobile credit. As mobile credit is a consumer financial service, it requires regulatory choices around consumer protection, prudential and economic regulation.

Consumer protection regulation is designed to protect the ability of consumers to make informed choices among competing options, by ensuring that consumers are protected from coercion, deception and other influences that are difficult to guard against (Averitt & Lande, 1997, pp. 716-717). Most obviously, consumer protection regulation can address how mobile credit platforms interact with consumers, including disclosure of pricing and other terms and conditions of loans. However, consumers need to be considered in other parts of the process, including whether and how loan defaults are reported and whether non-traditional digital data used to make lending decisions is accurate. These matters are discussed further below.

As mobile credit is a financial service, prudential regulation must also be considered. Prudential regulation is meant to protect the stability of financial institutions and the stability of financial systems as a whole (Macmillan, 2016). However, as of late 2016, there are no indications that mobile credit is of a sufficient scale to make prudential regulation of currently unregulated lenders (Models 2 & 4) an urgent concern, though this may need to be reassessed in the future.

Finally, economic regulation is meant to address significant market failures (Jalilian, Kirkpatrick & Parker, 2003, p. 11). For example, mobile credit products are often (but not always) linked to mobile money services, which are subject to network effects. When mobile money networks do not effectively interoperate, network effects may arise that can serve as a barrier to entry for new entrants (Bourreau & Valletti, 2015, p. 14). To the extent that mobile credit is linked to these networks, the market for mobile credit may also be affected. In particular, the use of mobile money transactional data as an input for mobile credit scoring may prevent market entry by those providers without ready access to this data, discussed further below.

Identifying core themes

The remaining sections of this article examine three substantive areas involving mobile credit that require regulatory choices: how to protect mobile credit consumers, whether and how to impose credit reporting obligations and how to regulate usage of non-traditional digital data. As each of these substantive areas is explored, several core themes recur which emphasise the novel regulatory challenges presented by mobile credit.

First, mobile credit is a novel product, both in how it functions and who it targets. Never before has credit been so available, while requiring so little effort from consumers. Applicants need not have any prior credit history or any assets to secure their loan. In most cases, they only need a mobile connection and a limited trail of non-traditional digital data. This opens up borrowing opportunities to those who may not otherwise have been able to access traditional credit and allows them a stepping-stone on the path to more substantial credit. At the same time, mobile credit can be seen as a potential hazard to an unwary consumer. Those lacking financial sophistication may be tempted to take out loans they do not need or understand and may fail to understand the damaging implications of failing to repay those loans. A key challenge is how to regulate mobile credit in a way that promotes financial inclusion and prevents exploitation of unwary consumers.

Second, as the description of the various models above should indicate, mobile credit providers span a variety of entity types and partnership models, which fall under a variety of applicable regulatory frameworks. There is no obvious regulatory framework that should apply to all of these new products, and modifications to existing frameworks are likely necessary to take into account the novel features of these products. Some models are potentially regulated by multiple frameworks, which has the potential to lead to conflicting obligations for market participants and squabbling or turf battles among regulators. Other models are almost entirely unregulated, which may have been appropriate for some forms of microcredit or other services delivered over mobile channels, but may not be appropriate for the novel nature of mobile credit. In addition, the gaps in regulation of some lending entities creates opportunities for regulatory arbitrage by market participants.

Third, all regulatory interventions need to promote legitimate policy objectives, without stifling investment and innovation. Mobile credit's promise of increasing financial inclusion could easily be undercut if market participants abandon development of these products, because regulatory burdens make them unprofitable.

4. Consumer protection

Consumer protection policies are a necessary enabler of financial inclusion, ensuring that consumers are treated fairly and engendering confidence in financial services (CGAP, n.d.). The unique nature of mobile credit makes sound consumer protection provisions essential. As discussed above, the revolutionary *instant, automated and remote* nature of these products has the ability to bring credit to those who have never received formal financial services. The availability and accessibility of mobile credit products brings new risks to the most vulnerable financial consumers.

Because application for and approval of loans is so effortless for borrowers, they may be enticed to take out loans they do not need. The ease of obtaining mobile credit, coupled with aggressive marketing, at times delivered directly to a user's mobile phone, can effectively make such loans an impulse purchase. A lack of familiarity

with financial services may mean that borrowers may not understand the price of the loans they are taking, much less be able to compare them across services or with other sources of microcredit. A lack of transparency or deliberate obfuscation can exacerbate this risk. For example, in early 2016, on the side of a building in bustling Central Nairobi, a large advertisement for a prominent mobile credit product declared in giant text "Get a loan with interest as low as 4%." However, the advertisement did not clarify anywhere that the 4% refers to monthly interest, while the annualised rate, without considering any compounding, is actually 48%.[10]

Without effective protection for consumers, mobile credit could, perversely, become an obstacle to financial inclusion for some. If defaults on mobile credit loans are reported to credit bureaus, unwary consumers may be blacklisted for failing to meet repayment conditions that they did not understand, or that they could never have met. Sound consumer protection policies are thus essential for mobile credit to fulfill its potential for extending financial inclusion.

Current consumer protection policies applicable in Kenya and Tanzania

Consumer protection provisions vary across jurisdictions. Some countries have obligations that apply to all businesses, either through a general competition or consumer protection regulator. Sector regulators often have obligations that only apply to those entities that fall under their regulatory mandate. Because mobile credit products straddle several regulatory frameworks, there will likely be disparities in applicable consumer protection regulation among the four models discussed above. A comparison of applicable consumer protection regulation in Kenya and Tanzania makes these disparities clear.

Banking regulation (applies to Models 1 & 3)

When banks are the lenders behind mobile credit, these products fall under the purview of banking regulation. Both Tanzania and Kenya have extensive regulatory frameworks that govern banking and related services, which are overseen by their respective central banks. Kenya has extensive consumer protection provisions that apply to banks, whereas Tanzania has only limited provisions. In Kenya, banks are subject to the Central Bank of Kenya Prudential Guidelines for Institutions Licensed under the Banking Act (2012), which includes the Guideline on Consumer Protection, CBK/PG/22. This Guideline is comprehensive and wide-ranging and a full review is outside the scope of this article. However, it is worth summarising some of the most relevant and noteworthy provisions relating to fairness and transparency.

The Guideline requires banks to act "fairly and reasonably in all its dealings with consumers" explain products and services "clearly in simple and ordinary language"

10 The 48% rate assumes the loan is held for the full month. If the loan is repaid early, the annualised rate can be much higher.

and inform the customer of all "charges, fees, penalties and any other financial liability" (Guideline on Consumer Protection, CBK/PG/22, sect. 3.2.1(a), 3.2.3(a)). Banks must inform a consumer of and provide terms and conditions that highlight all fees, charges, penalties, interest rates and other liabilities or obligations (Guideline on Consumer Protection, CBK/PG/22, sect. 3.4.4). Banks must make specific disclosures regarding interest rates, including disclosing the rate, explaining how it was calculated and providing the total cost of credit (Guideline on Consumer Protection, CBK/PG/22, sect. 3.4.5).

In addition to the formal banking framework, there are other sources of consumer protection obligations in Kenya that apply only to banks. The general competition framework specifically addresses the provision of banking services, prohibiting the imposition of charges and fees that are not brought to the attention of a customer prior to their imposition or the provision of the services (Competition Act, 2010, sect. 56(3)). Also, members of the Kenya Bankers Association (an industry group that includes all commercial banks) have agreed to disclose an annual percentage rate (APR) pricing mechanism framework that includes interest rate components, bank charges and fees and third-party costs to provide loan applicants with a rate that can be compared across banks. As of July 2014, all commercial banks in Kenya were bound to disclose APR for loans as part of its required disclosure of total cost of credit (Kenya Bankers Association, 2014).

Tanzania has fewer consumer protection provisions in its banking regulatory framework. However, a bank is required to disclose fees and charges on all of its products and services at each branch and on its website (Banking and Financial Institutions (Disclosures) Regulations, 2014, sect. 11). It is not clear if a mobile credit platform would be subject to these requirements.

Competition regulation (applies to Models 1-4)

Not all jurisdictions have general competition regulators, and not all such regulators extend their mandate to consumer protection. Both Kenya and Tanzania have such regulators. In theory, these regulators would have authority over all four models of mobile credit products. However, as indicated below, while Kenya's competition regulator has taken an active role in regulating aspects of mobile financial services, Tanzania's has largely been absent.

In Kenya, the Competition Authority of Kenya is the independent regulator of competition with primary authority over competition matters in all sectors (Competition Act, 2010, sect. 5). The Competition Act, 2010 includes consumer protection provisions of general application, such as prohibitions on misleading representations and unconscionable conduct and a requirement to inform consumers of all charges and fees (Competition Act, 2010, sect. 55-57).

The Authority has been active in the regulation of competition and consumer protection in mobile financial services. In 2014, in response to complaints from a competitor, the Authority ordered Safaricom to open up its agent network to rival mobile money services, ending its policy of exclusivity practices (Nleya & Robb, 2014). In 2015, the Authority launched a market inquiry into the pricing and conditions of USSD access offered by MNOs, focusing on any constraints in financial services and consumer protection issues (Competition Authority of Kenya, 2015). The Authority has also been proactive in approaching mobile credit specifically. It recently announced a market inquiry into the banking sector including an examination of credit reporting obligations by mobile credit providers (including non-banks) and the use of transactional data for mobile credit evaluation (Competition Authority of Kenya, 2016).

In Tanzania, the Fair Competition Commission (FCC) is the independent competition regulator with authority over all sectors of the Tanzanian economy, except where expressly excluded by subsequent legislation (Fair Competition Act, 2003). Competition legislation prohibits conduct that is misleading, deceptive or unconscionable (Fair Competition Act, 2003, sect. 18 and 25). A recent legislative amendment requires the FCC to consult with the telecommunications regulator on matters involving telecommunications.[11] However, the FCC has apparently interpreted this amendment to essentially remove issues arising in the telecommunications sector, including mobile financial services, from its jurisdiction (Roberts et al., 2016, p. 23).[12] Whether the FCC will take a similar approach to mobile credit (or any particular model) is still an open question.

Telecommunications regulation (could apply to Models 1-3)

Telecommunications regulation is another source of consumer protection obligations that may impact mobile credit providers. In both Kenya and Tanzania, the respective telecommunications regulators have had minimal involvement in regulation of mobile financial services other than requiring that the service providers have the appropriate licenses to make use of telecommunications channels. There is no reason to assume that their approach to mobile credit provided by MNOs, or over MNO-controlled channels, would be different. However, because MNOs are licensed by these regulators (Models 1 & 2), as are the service providers who use mobile channels like USSD to provide services (Model 3), these regulators may be able to apply consumer protection regulations to the services offered by these licensees. Telecommunications

11 The Electronic and Postal Communications Act, 2010 (EPOCA), includes an amendment to the Fair Competition Act, 2003 (FCA), adding: "Where, in the course of performing its functions under [the FCA], the [FCC] encounters any matter related to electronic or postal communications, as those terms are defined in [the EPOCA], it shall request the written advice of the [telecommunications regulator] on such matter and upon receiving such request, the [telecommunications regulator] shall have the power to provide the [FCC] with such advice."

12 Excluding issues relating to the review of mergers.

regulators in other jurisdictions may take a more proactive approach to regulating mobile financial services, including mobile credit.

In Kenya, several consumer protection provisions in the Kenya Information and Communications (Consumer Protection) Regulations (2010) may be interpreted as applicable to mobile credit providers who are also telecommunications licensees. Customers of licensees have a right to "receive clear and complete information about rates, terms and conditions for available and proposed products and services" as well as "protection from unfair trade practices, including false and misleading advertising" (Kenya Information and Communications (Consumer Protection) Regulations, 2010, sect. 3). Licensees must provide a clear and understandable description of available services, rates, terms, conditions and charges for such services (Kenya Information and Communications (Consumer Protection) Regulations, 2010, sect. 10).
In Tanzania, the Electronic and Postal Communications (Consumer Protection) Regulations (2011, sect. 4 and 7) require licensees to provide consumers with information on products and services, which is complete, accurate and up to date, in simple and clear language and all promotions must clearly indicate the total charge and the terms and conditions.

Payment services regulation (could apply to Models 1 & 2)
A less definitive source of regulation of mobile credit services is through regulation of related mobile money service providers, which is often achieved through payment services regulation. Such regulations may apply to mobile credit products that are add-ons (Models 1 & 2) of mobile money services. However, at the time of writing, the author is unaware of regulators in Kenya or Tanzania applying these regulations in that way. Nevertheless, these existing regulatory frameworks contain many potential hooks for regulators to apply obligations to mobile credit providers who would otherwise be out of their reach.

In both Kenya and Tanzania, the respective central banks have led regulation of mobile money services, beginning with a flexible approach (the *light touch* approach in Kenya and the *test and learn* approach in Tanzania), based on the issuance of *no objection letters*. However, both systems have matured with the passage of payment system legislation and regulations that provide for the issuance of authorisations or licenses and include some limited consumer protection provisions.

In Kenya, the Central Bank of Kenya (CBK) regulates payment service providers, a term which includes mobile money service providers. Under the National Payment System Regulations (2014), the CBK could potentially review add-on partners as part of a payment service provider's authorisation process. In addition, a payment service provider must notify the CBK prior to adding new functionality to its mobile money services or changing "major partners in the business" (National Payment System Regulations, 2014, sect. 13(2)). Mobile money service providers also have some

limited consumer protection requirements. For example, advertisements must be precise and easily understood, not misleading and comprehensive enough to properly inform consumers about the product (National Payment System Regulations, 2014, sect. 37).

In Tanzania, non-banks must receive licenses from the Bank of Tanzania (BoT) in order to offer a mobile money service. Under the National Payment Systems Act (2015, sect. 51) mobile money services must provide consumers with terms and conditions that are transparent, fair, legible and in comprehensible language, disclose pricing of products and services. Under the Payment Systems Licensing and Approval Regulations (2015, sect. 39), they must also "display charges, fees and terms and conditions for their services to customers prior to charging them". It is conceivable that the BoT could potentially extend its authority to add-on partners as part of the licensing process.

Consumer protection regulation (applies to Models 1–4)
Kenya has enacted a Consumer Protection Act (CPA) (2012), applicable across the Kenyan economy, which contains general prohibitions on false, misleading, deceptive or unconscionable representations (Consumer Protection Act, 2012, sect. 12 and 13). The CPA contains provisions regulating "credit agreements," regardless of whether the entity is a licensed bank, however it is not clear from the definitions whether these would apply to all loans or only to credit extended as part of a consumer transaction (e.g., a supplier credit agreement) (Consumer Protection Act, 2012, Part VII). There is no regulator specified in the CPA as responsible for enforcement. Rather, consumers are able to commence proceedings on behalf of a class of persons (Consumer Protection Act, 2012, sect. 4).

Issues in consumer protection to be considered by policymakers and regulators
The brief review of consumer protection regulations in Kenya and Tanzania set out above indicates a patchwork of regulations that may or may not apply to a particular mobile credit provider. Some obligations apply to all forms of mobile credit, but most have limited application to only a subset of the models. For example, in Kenya, while banks (Models 1 & 3) are required to make detailed disclosures on interest rates, non-banks (Models 2 & 4) are under no such obligation. Policymakers will need to decide whether consumer protection provisions should apply uniformly across all forms of mobile credit, or whether the current system is adequate.

One argument for applying a uniform set of standards rests on the fact that consumers may be unable to differentiate between the various lending entities behind mobile credit products. In 2014, CGAP conducted interviews with a range of users of M-Shwari (Kenya) and M-Pawa (Tanzania) (Mazer & Fiorillo, 2015). These mobile credit products are the first and most popular of their kind in their respective countries and are provided by CBA, a prominent bank, in partnership with the leading MNO.

None of the M-Shwari users and very few of the M-Pawa users were aware that CBA was even involved in the mobile credit product (Mazer & Fiorillo, 2015). If users are unable to identify the lending entity behind these services, particularly one as prominent as CBA, it seems even more unlikely that they could distinguish the type of entity making the loan and understand the regulatory obligations by which it is bound. With such disparate obligations, whether a consumer receives transparent and fair treatment may simply be the accidental result of which particular mobile credit product the consumer chooses.

In Kenya and Tanzania, mobile credit providers under Model 4 (non-banks using smartphone apps) avoid banking, telecommunications and payment services regulation altogether. The general consumer protection obligations under the general competition and consumer protection frameworks were not written with effortless borrowing through mobile devices in mind and may prove insufficient to protect consumers. This potentially creates a large regulatory gap in the regulation of these entities.

Policymakers and regulators will need to consider whether it is fair or appropriate to apply widely divergent levels of consumer protection with respect to products that are functionally indistinguishable to consumers. Uniformity would create a more level playing field for competition among these services. If all of the services are subject to the same requirements on disclosure of rates, fees and other terms of service, consumers can more easily compare the services and select the one that best fits their needs. Also, uniformity in consumer protection requirements removes incentives for mobile credit providers to select regulatory structures that protect consumers least.

If policymakers and regulators choose uniformity, they will need to then determine what level of regulation is appropriate. This is not simply a matter of selecting one of the current regulatory mandates or approaches to apply to all mobile credit products. Regulators may find that the existing regulatory requirements are not well suited for mobile credit. For example, requirements that fees be posted at branches or that interest rates be displayed in terms of an annual percentage rate may not make sense for these new products. Regulators may need to craft consumer protection obligations that cater to the idiosyncrasies of mobile credit, in other words the instant, automated and remote nature of the products and the increased vulnerability of the consumer population likely to take advantage of them. These concerns will need to be balanced against a need to encourage investment and innovation. However, the requirements for transparency and fair treatment (e.g., displaying costs in an understandable way and responding to customer complaints) seem unlikely to impose burdensome costs.

Another consideration is which regulator or regulators are best placed to regulate consumer protection issues around mobile credit. Financial services regulators have expertise in regulating consumer protection for lending. However, they may be

reluctant to extend their mandate beyond traditional banking and similar services to cover all the entity types in the market. Telecommunications regulators are typically more interested in regulating use of mobile channels rather than the content these channels provide. This may leave general competition and/or consumer protection regulators to take the lead, as CAK seems to have done with respect to other non-prudential aspects of mobile financial services in Kenya.

5. Credit reporting

Credit reporting systems are a critical element of financial infrastructure that can help to reduce the costs of financial products and increase their availability to consumers (IFC, 2012, pp. 3-5). At their core, they consist of databases of information on borrowers, supported by a technological and legal framework (World Bank, 2011).

Three benefits of credit reporting systems stand out as valuable to healthy financial sectors.

First, functioning credit reporting systems can reduce the costs of borrowing. These systems reduce information asymmetries between borrowers and lenders by providing lenders with objective information that can be used to efficiently and effectively evaluate borrowers. This can reduce portfolio risks and transaction costs (for example, by eliminating the need for collateral) and these savings can, under competitive pressure, be passed on to borrowers (IFC, 2012).

Second, these systems can increase financial inclusion. Consumers do not need to have a history of prior transactions or a personal relationship with the institution from which they wish to borrow. Rather, a consumer can leverage a prior history of payments with any other reporting institution as a means of demonstrating creditworthiness to a new lender. In addition, because credit reporting systems aim to provide objective information on borrowers, they may benefit segments of the population that may have been denied credit due to prejudice (World Bank, 2011, p. 7).

Finally, and relatedly, these systems serve as a means of enabling competition between financial institutions. Because credit reporting makes credit histories generally accessible to all lenders, consumers are not locked into borrowing from those institutions with which they have a prior relationship. In theory, consumers can shop around and choose the best rates and other features that meet their needs. This should promote competition among lenders and a diversity of loan products, reducing the costs of lending and providing consumers with greater choice.

Reporting requirements for mobile credit providers are likely not uniform

Credit reporting obligations applicable to mobile credit providers vary across jurisdictions, but often depend on the type of entity making the loans. As there are

a variety of lender-types providing these products, the reporting requirements are likely not uniform across the market. Kenya and Tanzania provide good examples of these disparities.

In Kenya, all banks must report both positive and negative credit information on consumers to Kenya's three credit reference bureaus (Credit Reference Bureau Regulations, 2013, sect. 18). Creditors that are not banks or similarly regulated financial institutions have no obligation to submit any credit data to the bureaus. However, these "third parties" are permitted, but not required, to submit positive and negative credit reference information to credit bureaus, if they are approved by the Central Bank of Kenya (CBK) and obtain the consent of a customer (Credit Reference Bureau Regulations, 2013, sect. 23).

The credit reporting system in Tanzania is significantly less developed than in Kenya. As of early 2016, there were two credit reference bureaus in Tanzania, although neither was fully functional (Roberts et al., 2016, p. 26). The Bank of Tanzania has established the Credit Reference Databank (CRD), which receives, stores, processes and distributes credit information to the credit bureaus (Bank of Tanzania (Credit Reference Databank) Regulations, 2012). Only banks and similarly regulated financial institutions are required to report credit information on new and existing credit facilities to the CRD (Bank of Tanzania (Credit Reference Bureau) Regulations, 2012). Other lenders have no reporting obligations.

Issues in credit reporting to be considered by policymakers and regulators

Policymakers and regulators will need to consider the role of mobile credit in the credit reporting system. As a threshold issue, they must determine whether mobile credit providers should participate in the reporting system and how to ensure that such reporting takes place without stifling innovation and investment. There are potential benefits and challenges to their participation.

A major potential benefit is that credit reporting by mobile credit providers has the promise of bringing large numbers of otherwise excluded consumers into the credit reporting system. As described above, mobile credit providers often use available non-traditional digital data (mobile phone or mobile money history, smartphone data) for evaluating initial loans, which allows them to lend to those with no credit history. If timely repayment of mobile credit loans is reported into the credit reporting system, it can help build a credit history for borrowers that can be leveraged for more significant loans from traditional lenders. Similarly, a history of late payments or defaults on mobile credit loans can help to alert lenders that a borrower is high risk. Accordingly, credit data reporting by mobile credit providers can help extend traditional credit to new borrowers, while also lowering overall borrowing costs.

There are also potential challenges to mobile credit providers participating in credit

reporting. First, credit reporting systems are often designed to accommodate data on longer-term loans, with periodic (e.g., 30 days) obligations on lenders to update information. Mobile credit loans can have terms as short as 24 hours and a single borrower may take out numerous loans in a month. Mobile credit providers, as well as credit bureaus and regulators, may face technical difficulties integrating this type of information into a traditional credit reporting system that is updated monthly.

Second, credit reporting systems typically impose obligations on lenders beyond simply the obligation to report. These include instituting mechanisms to allow consumers to access, challenge and correct inaccuracies in their histories. Because mobile credit loans are of such small value, these obligations may impose disproportionate costs on mobile credit providers, stifling innovation or increasing borrowing costs and undermining the benefits these new services bring to financial inclusion.

Third, market participants may argue that requirements to report credit data on mobile credit would undermine competition in the market for these services. As discussed above, mobile credit providers rely on proprietary algorithms to evaluate available transactional data of borrowers with no traditional credit history. The ability of a mobile credit provider to obtain this data, and the usefulness and accuracy of these algorithms to turn this data into a credit score, are two of the key differentiators of these providers. Some mobile credit providers have argued that requiring credit information reporting would undermine investments in innovation. For example, mobile credit provider X may invest resources in establishing a relationship with an MNO to receive mobile phone and mobile money transactional data on a customer. The same provider may also invest significantly in an algorithm to process this data for credit evaluation. However, if the repayment history for this providers' customers were available through credit bureaus, other providers may piggyback on this investment. Mobile credit provider Y may decide to only give loans to those consumers with a history of repayment of a loan from provider X because it would know that provider X had used its algorithm to score transactional data that indicated that the borrower was creditworthy. The history of the issuance of the loan by X becomes a proxy for the expensive collection and analysis of data that would otherwise be required. The potential for competitors to essentially "free-ride" on a product's evaluations may serve as a disincentive for investment and improvements in such products.

As in the case of consumer protection, a threshold consideration is whether mobile credit providers should have uniform reporting obligations, regardless of the regulatory status of the lenders. For example, reporting obligations in Kenya and Tanzania currently only apply to mobile credit products offered by banks. This may create an unfair playing field and distort competition in the mobile credit market, as non-banks offering similar products have a lower cost of regulatory compliance. Maintaining the disparities in these obligations may further incentivise the creation of products that avoid reporting obligations, as entrants are likely to favour models

with lower costs and lighter regulatory obligations. Such regulatory arbitrage may undercut policy goals of increasing financial inclusion as the market becomes weighted towards products that have no reporting obligations.

If policymakers and regulators decide to require uniform credit reporting, then the level of such reporting obligations is another factor to consider. Even if some credit reporting is seen as beneficial, those obligations that were designed to apply to banks may be seen as overly burdensome for these new products. Policymakers and regulators may explore more flexible and less burdensome obligations that take into account the small loan amounts and short terms of the loans.

6. Availability of mobile and mobile money services transactional data

Another issue for policymakers and regulators to grapple with is the availability of customer transactional data generated by use of mobile services and mobile money services of MNOs. This non-traditional digital data is particularly valuable for mobile credit analytics as it includes a customer's mobile phone subscription history (airtime purchases, airtime extended by credit, call times, etc.), as well as mobile money transactions history (payments, transfers, bill pay, salary disbursements, etc.). This information, which yields insights on consumer attributes, such as liquidity, regularity, scale of cash flow and payment obligations and breadth of social network, has proven valuable in assessing credit risk.

In both Kenya and Tanzania, this data is not considered part of the credit reporting system. Accordingly, MNOs have no obligation to share this information with credit bureaus or to allow customers to review and correct this information. As of late 2016, this data is only shared by MNOs with mobile credit providers in the context of a partnership between the MNO and a lender (Models 1 & 2). Policymakers and regulators will need to take a view on whether this data should remain under the exclusive control of the MNOs, or whether third parties and/or consumers should have access. In Kenya, as of late 2016, the issue of consumer access is being examined by Competition Authority as a facet of phase II of its market inquiry into the banking sector (Competition Authority of Kenya, 2016, p. 248).

One consideration is that this non-traditional digital data is being used as a key input for mobile credit decisions and consumers should therefore have a right to ensure that it is accurate. It is possible that the transaction histories utilised by MNO lending partners may contain errors, be incomplete or include information from a misidentified consumer. Because consumers are unable to review or challenge this information, they risk being unfairly blacklisted from mobile credit services, which may otherwise serve as a stepping-stone to building a credit history and accessing more significant credit or other financial services. This issue is even more salient in a mobile money market like Kenya, where one service, M-Pesa, accounts for the overwhelming number of mobile money transactions and may be the only source of

useful mobile money transactional data.

The United States Federal Trade Commission (FTC) addressed a similar issue when it recently clarified the use of big data in credit reporting decisions. Under the US Fair Credit Reporting Act, consumer reporting agencies (CRAs) that compile or sell consumer reports, used for credit and other decisions, must implement procedures to ensure maximum accuracy of such reports and provide consumers with the ability to correct any errors (FTC, 2016). The FTC clarified that data brokers that compile "non-traditional information, including social media information" may be considered CRAs subject to these obligations (FTC, 2016, pp. 13-15). The companies who obtain and use these reports for credit decisions also incur obligations, including supplying an adverse notice to consumers if they are denied credit on the basis of such data (FTC, 2016). If a similar approach to non-traditional digital data were taken in developing countries, where mobile credit is beginning to flourish, MNOs and their mobile credit provider partners (Models 1 & 2) could be subject to access obligations similar to those applicable to credit reporting information.

Other concerns around the use of non-traditional digital data for credit decisions are competition and policy based. For example, if an MNO is dominant in mobile and mobile money markets, it may be the only entity in the market with sufficiently robust mobile and mobile money transactional data. The dominant MNO could partner with one or more lenders that provide add-ons to its mobile money service (Models 1 and 2) and exclude all other competing mobile credit services. This could further entrench its dominance in mobile and mobile money markets. Furthermore, to promote financial inclusion, policymakers may deem it essential that consumers have access to this MNO information and share it with lenders.

Some of the concerns around the use of transactional data will be alleviated by the emergence of the non-bank mobile Internet apps for smartphones (Model 4). These mobile credit providers are able, with a consumer's permission, to extract information on voice, SMS and mobile money activity directly from a consumer's device. In effect, this subverts the monopoly that MNOs have on this information, permitting consumers to directly share accurate, verifiable versions of this information with mobile credit providers for credit evaluations. Also, in some cases, these mobile credit providers may be able to access histories of loan disbursements from competing mobile credit providers that have partnered with MNOs, as these may leave a record on a smartphone through SMS confirmations. This may raise similar concerns over free-riding described above, with respect to credit reporting.

The benefits made possible through smartphone apps require widespread adoption of smartphones, particularly among the low-income and rural populations that are targeted by financial inclusion. While globally, 45% of mobile connections were smartphones in 2015, in Africa this number was only 23% and in the East Africa

Community it was only 17% (GSMA, 2016c, pp. 13, 19). Accordingly, it is likely that the rise of these smartphone applications will not relieve policymakers and regulators of the need to address the use of mobile money transactional data for many years to come.

7. Conclusion

The emergence of mobile credit products has the potential to increase access to financial services, particularly in sub-Saharan Africa. However, like the emergence of mobile money services over the last decade, these new products challenge existing regulatory categories and approaches. This is complicated by the fact that mobile credit is offered by a variety of entities and/or partnerships, which are subject to different regulatory frameworks. Policymakers and regulators will need to consider how best to regulate mobile credit, using the tools of consumer protection, prudential and economic regulation to promote financial inclusion and protect consumers, without stifling investment and innovation.

Regulation of consumer protection, credit reporting and availability of MNO transactional data are three substantive concerns linked to the emergence of mobile credit. However, as exemplified by the patchwork of applicable frameworks in Kenya and Tanzania, these concerns are not yet addressed comprehensively or coherently. Policymakers and regulators will likely need to reconsider outdated regulatory approaches in order to enable mobile credit to fulfil its potential.

First, the novel nature of mobile credit raises novel concerns for consumers. Credit is available immediately and on demand, without the need to visit any branches or agents, wait in line, or fill out forms. The ease of use of these services has, in some cases, essentially turned credit into an impulse purchase. Moreover, these products are often targeted at the most vulnerable and least financially educated. Regulatory frameworks need to protect consumers in a sensible way that addresses the realities of this new technology, without stifling innovation.

Second, the regulatory frameworks need to advance policies of financial inclusion. Mobile credit repayment histories can potentially serve as a stepping-stone to for borrowers to access larger credit volume. In order to accomplish this, mobile credit needs to be included in credit reporting systems in a way that furthers these policy goals, without exploding the costs of mobile credit, or unfairly punishing the financially uneducated for mistakes. In addition, disparate reporting obligations among mobile credit providers, based on entity types, risks distortions in competition and regulatory arbitrage.

Finally, mobile credit has thus far relied heavily on mobile and mobile money transactional data. If this reliance continues and has implications for policies promoting availability of credit and financial inclusion, policymakers and regulators

will need to consider whether use of this information needs more oversight, and whether consumers should have greater rights to review and challenge this data.

The patchwork nature of the current regulatory frameworks presents significant challenges, particularly for consumer protection. These include the likelihood of conflicting obligations for market participants, regulatory gaps and incentives for regulatory arbitrage. However, the wholesale creation of a comprehensive regulatory framework to address mobile credit may be too costly. Much can be achieved through coordination among regulators, particularly as mobile credit straddles several regulatory frameworks. Often coordination among regulators is mandated, particularly between sector and general competition regulators, as regulators are required by law to consult with one another. However, regulators can also be proactive and enter into memoranda of understanding that define obligations on consultation, joint investigations and sharing of confidential information. Prudent coordination can reduce duplication of resources where powers overlap; reduce duplication and conflict between regulators' investigatory actions and competitive behaviour; and permit regulators to draw on one another's strengths (Macmillan, 2016). Such coordination among financial services, telecommunications, competition and consumer protection regulators is essential to meet the regulatory challenges presented by mobile credit.

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